Library Resources & Technical Services

Editorial

Peggy Johnson

This issue is the first that appears following my appointment as editor of *Library Resources and Technical Services,* for a five-year term, following my one year appointment as interim editor. I'm truly honored to be selected to continue in the position that I have found stimulating, challenging, and enjoyable. I'm very pleased to announce that Edward Swanson has accepted an appointment to continue as book review editor, a position he held on an interim basis as well.

Papers in this issue speak to many interests. Martha M. Yee surveys the cataloging literature to identify problems with the MARC 21 format. She sorts the problems into categories, resulting is one set of problems that she calls "true MARC 21 problems." Yee then offers recommendations to address these problems. She notes the sophisticated system that we have developed to link and demonstrate relationships, which facilitate resource retrieval.

Whitney Baker explores the challenging positions held by those library professionals whom she calls "hybrid" conservators. A hybrid conservator is responsible for both oversight of batched, mass production treatments (usually for circulating collections) and the execution of single-item treatments (usually for special collections). Fulfilling these two performance expectations can stress and stretch a conservator, yet combining the roles is not uncommon. Baker concludes with advice on balancing the demands of both responsibilities.

"Zines and the Library," by Richard A. Stoddart and Teresa Kiser, takes us into the realm of collection development and management, while touching on cataloging, access, and preservation challenges presented by these unique materials. While zines are not within the scope of every library's collection development plan, Stoddart and Kiser encourage us not to reject them simply because they represent alternative perspectives and cultures. The authors unspoken message is that we may be guilty of unintentional censorship when we fail to select a range of materials that fully represents a pluralistic society. Stoddart and Kiser located the cover art for this issue.

We are going "global" with a paper by Jutta Frommeyer. I hope all LRTS readers, not just catalogers, will look at her analysis of chronological terms and period subdivisions in three different subject systems used around the world. The ease with which catalogs can be searched internationally and the potential of combining searches across catalogs mean that we need to give serious attention to the lack of consistency that ultimately will baffle users.

Finally, I'm very excited to republish an award-winning essay by Ross Atkinson, first published in *LRTS* in 1992. Atkinson has revisited the themes of his essay on the acquisitions librarian as a change agent and written an introductory essay that considers how the environment and his perspective have changed.

I hope you enjoy this issue. I have certainly enjoyed working with the authors to assemble it.

New Perspectives on the Shared Cataloging Environment and a MARC 21 Shopping List

Martha M. Yee

This paper surveys the cataloging literature to collect problems that have been identified with the MARC 21 format. The problems are sorted into (1) problems that are not the fault of MARC 21; (2) problems that perhaps are not problems at all; (3) problems that are connected with the current shared cataloging environment; and 4) other problems with MARC 21 and vendor implementation of it. The author makes recommendations to deal with the true MARC 21 problems that remain after this analysis.

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A number of writers in our field have suggested recently that it is time to move our cataloging data out of the MARC 21 format and into something else, perhaps XML.[1] XML (Extensible Markup Language) is a subset of SGML (Standard Generalized Markup Language) in which tags are unlimited and not redefined. Even quite knowledgeable MARC 21 leaders recognize that MARC 21 has a much smaller installed base than does XML and that, at some time in the future, we may have to plan for a migration of our data into something like XML or one of its successors in order to have access to a broader marketplace of software and hardware solutions to the problem of bibliographic control.[2] In fact, the Network Development and MARC Standards Office at the Library of Congress has made it quite easy for any institution that wants to switch their MARC records to XML to do so today by providing both a full MARC 21 XML schema and an abbreviated "MARC XML lite," known as the Metadata Object Description Schema (MODS).[3] There is also evidence that the world at large is turning to examine the issues and problems that for the past several hundred years have occupied only librarians.[4] Given this situation, now is a good time to consider whether a future transition might provide the opportunity for beneficial changes to be effected in our shared cataloging environment and in our methods of tagging and coding cataloging data for the purposes of sharing it.

The purpose of this paper is to explore the various problems that the writers have associated with the MARC 21 format. There are actually four categories of problems.

In the first category are problems that are not actually the fault of MARC 21, but rather lie with the cataloging rules and practices that provide content for the MARC 21 data structure standard, such as the *Anglo-American Cataloguing Rules* 2nd ed., revised, (AACR2R) and Library of Congress Subject Headings (LCSH). Such problems will be identified but not discussed extensively, as the need for change in cataloging principles and the rules based on them is much too broad a subject to be covered here. One exception to this approach is made for problems associated with multiple versions and FRBR (Functional

Requirements for Bibliographic Records), on the grounds that MARC 21, the cataloging rules, and the shared cataloging environment are so entwined in their effect on possible solutions that they cannot be separated from each other.

In the second category are problems that perhaps are not really problems at all, but rather solutions to problems that are imperfectly understood by many writers.

In the third category are problems that are due to the shared cataloging environment that MARC 21 was designed to support. Simply changing MARC 21 without also changing the context in which it operates cannot solve these problems. Here we must deal to a certain extent with possible changes in the cataloging rules.

Finally, in the fourth category are some known problems that are either caused or partially caused by MARC 21 and that perhaps could be solved in the process of migrating our data to some new data structure standard in the future. These latter problems I have referred to as a MARC 21 shopping list. It is possible that a number of these latter problems would be better solved in vendor software implementation than in the MARC 21 format itself. In these cases, it is hoped that this paper will stimulate discussion in the vendor community about better ways to use existing MARC 21 data to provide better user service. Unfortunately, many of the problems that are blamed on MARC 21 are problems that derive from the failure of vendors to support full MARC 21 capabilities. Sometimes this is due to financial considerations (development is done only when a significant number of customers will benefit from them); sometimes it is due to vendors' lack of understanding of MARC 21, of cataloging records, of problems that arise in large complex databases of bibliographic records, and of problems the public faces in accessing online public access catalogs.

The third category, problems due to the shared cataloging environment, and the fourth category, the MARC 21 shopping list, will be the focus of this paper.

Category 1—Problems That Are Not the Fault of MARC 21

For the most part, MARC 21 is a data structure standard, not a data content standard or a data value standard, and this seems to be imperfectly understood by some writers.[5] A data structure standard provides a standard for the labeling of data and, as such, for the isolation of particular kinds of data for particular purposes such as indexing or display. The data itself (or the semantic content), however, is determined by data content standards (cataloging rules such as AACR2R) and data value standards (lists of authorized headings, such as the National Name Authority

File or LCSH). Thus, some commentators have identified problems as being associated with MARC 21 when they are actually associated with cataloging rules (data content standards) and authority files (data value standards). For example, Miller and Fiander note what Fiander describes as an "overemphasis on description, especially in considering the growing availability of fulltext."[6] Fiander discusses the need to ease the creation of analytic catalog entries and the question of abandoning the main entry.[7] A joint meeting of the American Library Association's MARBI (Machine-Readable Bibliographic Information) Committee with the Association for Library Collections and Technical Services (ALCTS) Committee on Cataloging: Description and Access (CC:DA) Committee concerning the relationship between MARC 21 and XML posted a long list of concerns that were identified as primarily cataloging problem areas, rather than MARC 21 problems per se or problems with MARC 21 alone.[8] These cataloging problem areas were also sometimes not necessarily problems, but rather solutions imperfectly understood. As stated above, these cataloging issues will not be discussed here, as the topic is too broad to be covered in these confines. However, much work needs to be done in educating our fellow librarians about the value of controlled vocabularies and uniform headings, and the value of the main entry as a work identifier that demonstrates relationships among all of the expressions of a work, works about it, and works related to it.

Numerous writers accuse MARC 21 of being "flat," rather than "hierarchical" like XML. For this reason, it is claimed that there is an "underemphasis on relationships," as Miller puts it.[9] As John Attig has pointed out, MARC 21 has a flat structure because of the shared cataloging environment in which we are currently operating.[10] The current shared cataloging environment derives cost efficiency from the fact that each record is independent so that we can move it in and out of different systems.[11] Since the object of the bibliographic record is the manifestation, this means that there is an over emphasis on manifestation at the expense of expression and work.[12] This is an unfortunate situation, as it means that the most difficult and labor intensive part of cataloging, the demonstration of relationships, is the hardest part to share. However, the solution to the problem lies in changing the shared cataloging environment, not in changing the MARC 21 format. This will be discussed further below in the section on category 3 problems, those due to the shared cataloging environment.

The claim that XML is superior to MARC 21 in its degree of hierarchicality is something of a red herring. The tag and subfield structure in MARC 21 is hierarchical, though not as open to complex hierarchy as XML, and the data content housed in MARC 21 is highly hierarchical. The real problems are not with MARC 21 itself, but rather

with (1) underutilization of the hierarchical data on the part of software vendors, and (2) limits on the degree of hierarchicality that can be supported in the current shared cataloging environment, in which there are thousands of different catalogs, each with a different set of manifestations of expressions of works. Underutilization, the first problem, is likely to continue in any XML implementation if system designers are not better educated in cataloging principles. As John Attig puts it: "The MARC structure supports communication of records; that communication process does not create a catalog."[13] The creation of the catalog, with all of the demonstration of relationships that implies, is up to the catalog software that indexes and displays the MARC 21 records. Limits on hierarchicality that can be supported in the current shared cataloging environment, the second problem, also will not go away in a hypothetical XML shared cataloging environment that is in every other way similar to the current environment with thousands of different subsets of records to index, display, and maintain over time.

Category 2—Problems Identified That Perhaps Are Not Problems

A number of writers complain of the complexity of MARC 21 formats. Tennant, for example, claims that "There are only two kinds of people who believe themselves able to read a MARC record without referring to a stack of manuals: a handful of our top catalogers and those on serious drugs."[14] However, these writers then go on to suggest that further complexity be added to MARC 21; for example, they complain that the functions carried out by people whose names are noted in bibliographic records are not adequately differentiated (thus an author is not distinguished from an editor or a translator). The implication is that MARC 21 actually needs tagging that is more complex, so that an editor or translator is given a different tag from an author. There are two unexamined assumptions here: (1) that catalogers will always know what function(s) were carried out by a person whose name appears in a statement of responsibility connected with a particular work or expression, and (2) that it is possible to create a complete and exhaustive list of all potential functions that a person could carry out in the creation of a work of any kind, whether image, sound, text, or some combination of those. There is also a failure to recognize that designating functions performed using relater codes in MARC 21 is already possible but not widely done, mainly for economic reasons, but also because of the complexities alluded to above.

MARC 21 is complex because it serves so many different communities, including academic libraries, public libraries, school libraries, special libraries, and archives in all disciplinary areas. One institution's complexity is another institution's lack of granularity!

Commentators fail to recognize that most of the complexity in MARC 21 is optional. Nothing requires that MARC 21 users use every field and subfield, and very few of them do. A local implementation almost always will be a subset of MARC; this subset or "level of description" (to use AACR2R's term) will be governed by the content standard or standards followed locally. Also, as noted above, for those who desire less complexity, the Library of Congress is providing a short version of MARC 21 XML, known as MODS. In considering the reasons for MARC's complexity, one should recognize that, to some extent, the complexity is driven by the content standards supported by MARC 21, not by MARC 21 itself. MARC 21 must provide a place for all of the data elements required by content standards such as AACR2R.

MARC 21 also has been criticized for redundancy.[15] When the charges are examined more closely, however, it is apparent that critics do not understand as much as they should about the reasons for the redundancy. Leazer, for example, claims that place of publication is recorded in twenty-four different fields.[16] When one examines his tables more closely, however, it becomes apparent that he has equated with "place of publication" such various other types of data as country of original production of motion pictures (257), place of manufacture (260 $e), and place of publication data in linking fields that apply not to the item described in the bibliographic record in question but to items described in other bibliographic records that are related to this item. He also fails to recognize the function of the 044 field that provides space for coding more than one place of publication when necessary (since the 008 fixed field only has room for one).

Those who charge MARC 21 with redundancy also do not seem to recognize the value of having the same piece of data in coded form, transcribed form, normalized form, and in a form suitable for subarrangement, linking, and precoordination. Having the data in coded form allows the piece of data to be used in rapid batch processing of millions of records. Having the same data in transcribed form allows use of the data as evidence of variation in the naming of authors, works, and subjects that is valuable in making decisions about forms of name for access points as well as historical evidence concerning how various expressions of a work were presented to the public at the time of publication. Having the same data in standardized and normalized form facilitates the collocation of all of the works of an author, all of the expressions of a work, and all of the works on a subject. Also, having the same data in standardized form precoordinated as parts of linking headings aids the demonstration of relationships with other entities (as, for example, when the expressions of a work are subarranged by language using language subfields in uniform titles, one

of Miller's examples of redundancy). Consider the following example of this so-called redundancy:

Indexable field (e.g., 651 _0 $a London (Eng.))

Descriptive field (transcribed) (e.g., 260 __ $aLondinum . . .)

Coded data for rapid batch processing (e.g., xxk)

Many would consider this type of redundancy not just useful but one of the major sources of the power of a catalog to provide superior precision, superior recall, and superior recognition value for scanning, as compared to a Web search engine.

Some charge the MARC 21 format with not being flexible and extensible enough.[17] Flexible would seem to imply that two different catalogers do not need to try to catalog in the same way. Extensible would seem to imply that changing a standard or adding to it should be easy. If we move too far in the direction of flexibility and extensibility, the resultant data may be so little standardized that library catalogs will not be able to differentiate their "look and feel" from that of Google (with the disadvantage of continuing to be much more expensive than Google, as they are now).

Fiander complains that the 1XX, 2XX, 3XX, and continuing sequence of MARC 21 field blocks "jumbles" description and access points.[18] This order precedes the MARC 21 format by hundreds of years and is by no means obsolete in the computer era. It has the effect of ordering the description in such a way that the work is identified first (1XX and 2XX), and then the expression/manifestation (2XX to 5XX), with those fields first that are most likely to differentiate the expression/manifestation from other expression/manifestations of the same work (such as the statement of subsidiary authorship, e.g., translator or editor, the edition statement, and the statement of extent, that is, paging for books or playing time for moving images). Online systems that ignore this fundamental ordering of fields in the bibliographic record create very confusing displays that are difficult for users to scan through quickly.

Category 3—Problems Connected with the Current Shared Cataloging Environment

Note: Numbers in parentheses in the following two sections refer to *MARC 21 Discussion Papers* (DP) and *MARC Proposals* that have been prepared in the past to deal with these problems.[19]

Two major problems have hitherto proven to be intractable in the current shared cataloging environment. Keeping thousands of catalogs under authority control has proven to be so expensive and labor intensive that, in fact, most of them are under rather poor authority control. The other is the problem referred to as "multiple versions" (89-9, 91-13, 2002-DP04). Even before the digital revolution came along, we had technology to reproduce the same intellectual content in different physical formats or to distribute the same intellectual content under different title pages. This is known as the "multiple versions" problem. Our catalogs do a very poor job of differentiating for users between the situation in which two records represent two different expressions of the same work with different intellectual content and the situation in which two records represent the same expression of the same work with the same intellectual content and only minor variation in physical format or distribution history of little interest to most users (two manifestations of the same expression).

Recommendation: Change the shared cataloging environment to enable solution of the multiple versions problem and to enable better and more cost effective authority control, in order to demonstrate hierarchical and other types of relationships between records for both catalog users and library staff in the most cost effective manner.

1. Re-examine our concept of "communication" of records. Consider whether or not the shared cataloging environment could be changed in some way such that changes in headings and bibliographic records could be made once and immediately appear everywhere.

One possible model might be a master record concept for both bibliographic and authority records in which the master record is "mirrored" in some way in local systems, and any change made to the master record is immediately visible to all users of all systems everywhere. Master authority records must be globally linked to master bibliographic records so that a change in an authority record automatically changes headings in all linked bibliographic records. Editing privileges on master records must be tightly controlled so that they are limited to those who are educated and experienced in the complexities of the bibliographic universe.[20]

This solution could potentially solve both major problems described above. It could save us millions spent on staff time to move records in and out of local catalogs and to edit local catalogs to bring them under authority control. Instead of moving records back and forth wholesale and editing the local catalog, copy cataloging staff would spend their time adding holdings symbols to records in the master database, and catalogers would spend their time adding new manifestation records, expression records, work records, and authority records for authors, corporate bodies, and subjects to the master database. It also could allow catalogers to efficiently share with users information they often have about identical intellectual content contained in different manifestations represented by different bibliographic records (multiple versions).

This solution would require a major change in the business model of the utilities, however, as they probably would no longer be able to charge on the basis of record use. The utilities could consider transitioning to the kind of licensing practiced by abstracting and indexing services. This solution also would mean a different marketplace for system vendors, one in which software design would be limited to that required to design local systems (such as circulation, acquisitions, and binding) and link them to master records. It appears that the complexity of software design currently required by libraries and the inability of libraries to pay high software development costs may have already driven many vendors out of the marketplace, so perhaps such a narrowing of scope might be welcomed. The master record approach could have the advantage of leading to the one-time development of complex software for indexing and display of complex hierarchical relationships that could then be shared by all.

If such a major change in business model is impractical, an alternative to explore might be use of authority record numbers (rather than text strings) to link bibliographic records to authority records. This approach, if designed carefully, might allow local systems continually to refresh their authority files with much less frequent editing of bibliographic records than is currently necessary to keep catalogs under authority control. It would solve the first problem above, but not the second (that of multiple versions), as we still would have thousands of different catalogs each demonstrating a different set of relationships among the bibliographic records contained in it.

Since the editing of catalogs to bring them under authority control and to ensure that they demonstrate relationships provides the greatest service to our users and is the most expensive part of our work, it is a shame we cannot apply our experience of the cost benefits of shared creation of bibliographic records to solve the problem of how to make the editing of catalogs as efficient as possible. Solving this problem would have the potential to save us millions of dollars every year and to provide better service to our users, a win-win situation.

2. Consider defining the bibliographic record as an expression-based record to which all manifestations of that expression should be linked.

This solution is under consideration by the Joint Steering Committee for AACR but likely will be rejected in favor of continuing with the current practice of creating manifestation-based records, given the difficulty of creating and using expression-based records in the current shared cataloging environment.

3. If it is not practical to define the bibliographic record as an expression-based record, at least allow use of the MARC 21 holdings format to attach all different manifestations of the same expression to one expression record in audiovisual archives that have a preservation mission.

Holdings in an audiovisual archive with a preservation mission tend to be unique (not held by other institutions), and these archives do not tend to practice shared cataloging in the same way that the library world does; rarely does one institution use bibliographic records created by another. Because the process of audiovisual preservation is a process of creating reproductions, the cataloger can be certain that an item in one format is an exact copy of the intellectual content contained in another item in a different format. Without the solution recommended above, conveying this valuable information about content identity to users is difficult to impossible. Current library standards require making a separate bibliographic record for every change in format; this could lead to the creation of fifty or more bibliographic records for one preserved title; if there are other records for different versions or expressions of the same film that actually differ in content, the situation becomes hopelessly confusing to the user. The appendix presents an example of an expression-based record for a film preserved at the UCLA Film and Television Archives in which manifestations are described as holdings appended to the expression record.

4. Consider other ways to create a sufficiently hierarchical data structure for the general library world.

The key requirement is an ability to define the work, expression, and manifestation levels clearly, and an ability to link in order to demonstrate relationships appropriately across and between these levels.

5. Clean up the MARC 21 format to make a clearer distinction between coding for the carrier and coding for the content.

One example of a problem area (there are others) is that of moving image materials. The content (work/expression) is moving image, but no code in the 008 currently exists for moving image. Instead, MARC 21 has codes for two types of moving image carrier (manifestation) in the 008/33: "m" for motion picture film and "v" for videorecording. Since a video copy can readily be made from any motion picture film (and often is in an audiovisual archive with a preservation mission), the current coding of the 008 in MARC 21 effectively precludes the creation of an expression-based record even for known reproductions of moving image materials. If the move to an expression-based record is allowed for preserving audiovisual archives, as recommended above, carrier coding must be removed from the 008 in the bibliographic record (e.g., 008/33 code m or v) for audio and visual archival materials—which are described on expression-based records with manifestations described in holdings records—and placed in the holdings records instead. As Miller has noted, "The fixed fields also illustrate the difficulty in changing overlapping values during format integration."[21]

Current work on the AACR2 data content standard to clarify which kinds of data go into area 3, area 5, and area 7

may lead to clearer distinctions between carrier and content in the bibliographic description, which may in turn lead to demands for clearer distinctions in MARC 21.

6. Design the best possible record-relationship mechanism to enable the inclusion in holdings displays of identification information drawn from bibliographic records, such as main entry (author and title) and date.

Currently, this is a problem that must be solved by vendors of local systems, rather than a problem solvable in MARC 21, but that might change if the shared cataloging environment were to change as recommended above. The solution, by the way, is *not* to store the same data in two or more places. This creates insupportable data maintenance problems in the long term.

7. Consider whether it might be possible to create identifiers such as URNs for the logical entities "work," "author," and "subject."

URN stands for uniform resource name, which is defined as "persistent identifier for information resources." URNs are being developed by a working group of the Internet Engineering Task Force.[22] For this to work in our field, we would have to agree on common definitions for the FRBR entities, and then we would probably have to designate an agency, perhaps the Library of Congress or a consortium of national libraries, to assign URNs to those entities.

8. Consider defining the authority record for a work heading as a work record to which all expressions of that work should be linked (DP72).

CONSER is currently working on proposals to use authority records to cluster the successive expressions of a serial work.[23] The Joint Steering Committee for AACR also has charged its Format Variation Working Group with addressing the use of work authority records. The group has recommended the creation of an authority record for each expression of a work. If this follows the pattern of Bible headings whereby the expression heading always begins with the uniform title for the work, it could at least create a hierarchically related cluster of headings that represent the work.[24] The Functional Requirements and Numbering of Authority Records (FRANAR) Working Group of the International Federation of Library Associations and Institutions also is studying the role of authority records within the catalog.[25]

9. Separate work headings from transcription that identifies a particular expression or manifestation of a work.

Titles and series titles in current MARC 21 do double duty as transcribed forms and as headings. Many people are using systems that allow global updating for authority control. In other words, a heading in an authority record is linked to all occurrences of that heading in bibliographic records; when a change to the heading is necessary, it is made once in the authority record and that change automatically generates changes in all associated bibliographic records. MARC 21 tags for transcribed titles and series, such as 245 and 440, need to be protected from simple global updating, but they need to link to authority records for the purpose of heading displays and more complex global updating that can retain the transcribed form but substitute a different normalized form for heading display purposes.[26]

10. Consider migrating all variant title access (currently in 246 fields in the bibliographic format) to cross references on work authority records.[27]

11. Change the 245 first indicator to make unambiguous the question of whether the title should go into the title index.

Currently, the meaning of first indicator 0 in the 245 field is determined by the presence or absence of a 1XX field. If a 1XX field is present, the first indicator 0 means the title should *not* be put into the title index. If a 1XX field is not present, the first indicator 0 is an indication that the 245 title is the main entry; as such it *should* be put into the title index. Figures 1 and 2 illustrate problems that arise in the sorting of moving image materials with 130 title main entries when the 245 titles cannot be suppressed from the title index based on MARC 21 indicator value of 0. Figure 1 shows an online public access catalog (OPAC) display example that does not work due to the failure to suppress titles from title indexes based on MARC 21 indicators. Note how the display of the title that is marked for suppression renders the authority record display meaningless and confusing.

Figure 2 provides an example of an OPAC display that includes titles that have been coded for suppression. Other types of titles that need to be suppressed from indexing in this way include transcribed titles that include "sic" or interpolations to correct them, titles with varying orthographies, and generic/numeric nondistinctive music and law titles that should be superseded by a more structured uniform title in a 240 field.[28]

This may be a problem that must be solved by vendors of local systems, rather than a problem that requires a MARC 21 solution; however, a MARC 21 solution could make the local solution much easier. Most local systems are accustomed to tying display to the presence or absence of indicators. The current MARC 21 requirement that the meaning of an indicator for display be linked to the presence or absence of another field is logically a much more cumbersome approach, and it is not surprising that local systems currently do not enable the accurate reading of 245 first indicators in the construction of title indexes.

12. Design the best possible record relationship mechanism to enable keyword searching of bibliographic records to include a search of cross references found in linked authority records.

This is currently a problem that must be solved by vendors of local systems, rather than a problem solvable in MARC 21. It might become a MARC 21 problem, though,

Headings	Records	Authority
Adventurous blonde	0	Yes
Search under: Torchy Blane, the adventurous blonde [This line is derived from a uniform title authority record]		
The adventurous blonde [This line is derived from a 245 00 field in a bibliographic record with a 130 field.]	1	

Figure 1. OPAC display that does not work (due to the failure to suppress titles from title indexes based on MARC 21 indicators)

Current display in all online public access catalogs known to the author that allow the building of a title index using both authority records and bibliographic records
*The rebel. A dash of gray
*The rebel. Absolution
Rebel de solitario
Rebel doctor
Rebel girls
Rebel (Motion picture)
   Search under: Call me genius
*Rebel. Night on a rainbow
Rebel (Television program : 1959–1962). Absolution
Rebel (Television program : 1959–1962). Dash of gray
Rebel (Television program : 1959–1962). Night on a rainbow

Example of the correct display
Rebel de solitario
Rebel doctor
Rebel girls
Rebel (Motion picture)
   Search under: Call me genius
Rebel (Television program : 1959–1962). Absolution
Rebel (Television program : 1959–1962). Dash of gray
Rebel (Television program : 1959–1962). Night on a rainbow

Even better display (no. 3 on the MARC 21 shopping list following)
Rebel (Motion picture)
   Search under: Call me genius
Rebel (Television program : 1959–1962). Absolution
Rebel (Television program : 1959–1962). Dash of gray
Rebel (Television program : 1959–1962). Night on a rainbow
Rebel de solitario
Rebel doctor
Rebel girls

Figure 2. OPAC display that includes titles that have been coded for suppression (marked with a *)

if the shared cataloging environment were to be changed in the ways recommended above.

13. Determine the optimum way to record the hierarchical relationships among headings so that a single change can cascade to all relevant headings. For example, a change in a main subject heading should be able to cascade to that heading with any subdivision appended to it.

This is currently a problem that must be solved by vendors of local systems, rather than a problem solvable in MARC 21. It might become a MARC 21 problem, though, if the shared cataloging environment were to be changed in the ways recommended above.

14. Determine the optimum way to record hierarchical relationships among headings in a way to ensure the success of a user who does a search on variant forms of name found in two hierarchically related authority records.

Consider the following example—the authority record for the FBI:

110 10 $a United States. $b Federal Bureau of Investigation

410 20 $a FBI

410 10 $a United States. $b Dept. of Justice. $b Federal Bureau of Investigation

410 20 $a Federal Bureau of Investigation (U.S.)

410 20 $a FBR

410 20 $a Federalnoe biuro rassledovanii

510 10 $a United States. $b Bureau of Criminal Identification

510 10 $a United States. $b Dept. of Justice. $b Division of

Investigation $w-a

The following is the authority record for a section of the FBI.

110 10 a United States. b Federal Bureau of Investigation. b Uniform Crime Reports Section

Note that the *see* reference from "FBI" to "United States. Federal Bureau of Investigation" occurs only in the parent record. If a user were to search for "FBI Uniform Crime Reports Section," the search would fail unless the system were smart enough to recognize the hierarchical relationship between these two records.

This is currently a problem that must be solved by vendors of local systems, rather than a problem solvable in MARC 21. It might become a MARC 21 problem, though, if the shared cataloging environment were to be changed in the ways recommended above.

15. Consider the possibility of using a different record structure than the current one to deal with "change of

name as change of identity," for example, change of name of a corporate body (earlier and later names), use of pseudonyms by an author, serial title changes, title changes in monographic works entered under title, and main entry changes in works that are published in sequential revised editions.

What is desirable is to allow users the choice of seeing either (a) only those works done under one identity or (b) all works done by one person or body under any identity. The two options also would be desirable for works with uniform titles, such as serials that have changed title. The current structure does not differentiate between a 500 for a pseudonym (same person) and a 500 for another person with the same name as a variant name for this person. The current structure simply chains together the corporate name and serial title changes. If one link is broken, the user cannot follow the chain back. A user will have difficulty assembling all of the works of a corporate body that has changed its name many times.

This is currently a problem that must be solved by vendors of local systems, rather than a problem solvable in MARC 21. It might become a MARC 21 problem, though, if the shared cataloging environment were to be changed in the ways recommended above.

Category 4—The Marc 21 Shopping List

The following is a discussion of other miscellaneous problems with MARC 21 and vendor implementation of it.

1. Devise a methodology to allow for switchable preferred forms of headings (2001-DP05).[29]

Essentially, a user of an English-language catalog should be able to define a language preference for his or her language (Spanish, Chinese, Arabic, or otherwise) so that, for example, if a user is a Spanish speaker and a Spanish form of name is present for a particular author, work, or subject that user seeks, the Spanish form will be substituted for the English-language preferred form wherever that heading appears, whether as a heading display, a multiple bibliographic record display, or a single record display.

A method should be developed to enable a language of preferred heading to vary based on language of catalog, language of catalog user, or script or transliteration preference of user. It should allow suppression or highlighting of categories of cross references in the OPAC by language, script, category of heading, or rules used in formation of heading. It should be possible to designate a particular form of heading as the preferred form for more than one language, as when two different languages actually use the same name for the same person, corporate body, work, concept, and so on. When more than one form is available

in a given secondary language, it should be possible to designate one as the preferred form for that language for all users who speak that language.

If we can solve this problem for users who speak different languages, we might be able to devise similar solutions for speakers of the same language whose usage differs, for example, experts who use technical language and lay people who use common language for the same concept. The desire to serve both types of users creates a constant tension in the data value standards, such as LCSH, used in both public and research libraries.

This is a complex set of record design (MARC 21) problems and system design (local vendor) problems. Before the local solutions can be devised, however, the MARC 21 records must be designed to support them. Data content standards come into play here as well. Currently AACR2R, for example, prefers the name by which an author, corporate body, or work is commonly known in the country of origin, rather than the name by which it is known in English-speaking countries. This was deemed necessary in order to share cataloging internationally. If MARC 21 record structure can be redesigned to support multiple preferred forms as described above, the data content standard will be more closely aligned with its own principle, that is, the principle of using the name commonly known by users of the catalog, regardless of country of origin of the named entity.

2. Ensure better access to data currently coded in fixed fields.

Put coded information currently in 006, 007, and 008 fields in MARC 21 bibliographic and holdings records in the best possible place to allow ready access to both librarians and the public for direct searching of dates, language, country of origin, and physical format categories, for example, general material designations (GMDs) such as leader byte 6, code j for musical sound recordings, specific material designations (SMDs) such as 007, byte 1, code s for sound cassettes, and all types of data coded in 007 fields, separately and in combination. This may be a problem that must be solved by vendors of local systems, rather than a problem solvable in MARC 21.

3. Ensure adequate content designation to enable complex sorting of headings in OPACs for those institutions that desire to do so.

The sorting of bibliographic records and headings is an oddity in the shared cataloging world—an area in which there are no standards or so many standards that it amounts to having none. Institutions are free to do what they like, and many would like to perform the complex sorting described below.

They would like to be able to code (or mark in some way) parenthetical qualifiers in headings that should be ignored in filing until there are two identical strings that

differ only in qualifier (DP57). For subject headings, this would help users improve both the precision and recall of their searches by allowing them to readily select the particular meaning of a term that most closely matches their need (for example, *power* as used in the political sciences, not as used in mechanical engineering). In the case of serial uniform titles, users could see right away that more than one journal has the title for which they are looking as well as an array of all those journals, enabling the users to easily scan the records for the right one. Figures 3 and 4 offer examples of headings with qualifiers.

Vendors of local systems could possibly resolve this sorting issue without requiring a change to MARC 21 if their sorting algorithms were made to pay attention to parentheses in normalized headings, since catalogers restrict their use of parentheses in headings to use with qualifiers only—this concept should be tested, however. If parentheses are ever used in headings for elements other than qualifiers, a MARC 21 change would be required, as no system solution would be available. It appears that OCLC is confident enough to sort parenthetical qualifiers in this recommended way in OCLC authority files. To see an example, scan the corporate name "Greens" in the OCLC authority file.

Institutions would benefit from being able to ensure that the optimal way to code chronological subdivisions on subject headings always file chronologically in heading indexes. The usefulness of this for history headings is self-evident. The headings are artificial constructs created by catalogers and are not likely to be known in advance by users. If users are not given a chronological array, they may never find the correct time period in a large file, such as the one for U.S. history. Figure 5 provides examples of history headings with chronological subdivisions.

Vendors of local systems could solve this problem in part without requiring a change in MARC 21 if their sorting algorithms would pay attention to subfield codes and accommodate a rule requiring all $y subfields in 6XX fields to be sorted by the first number encountered in the string, skipping over all preceding text. An ideal machine-driven solution for the problem of B.C. dates and dates that are not in four-digit form (e.g., 19th century) may not be possible.

Institutions would like the ability to enable title fields (including 130, 630, 730, 830, and 246) and subfields, corporate name fields (including 110, 111, 610, 611, 710, 711, 810, and 811), and subject and geographic heading fields (including 650 and 651) in both bibliographic and authority records to contain articles with non-filing indicators or other markings to signal that they should be displayed, but skipped over for purposes of heading arrangement. For example, the famous Fellini film is called *La strada,* not *Strada*. (DP102, DP118, 98-16R, 2002-DP05). On

Ideal display
Power (Christian theology)
Power (Mechanics)
Power (Philosophy)
Power (Social sciences)
Power (Theology)
Search under Power (Christian theology)
Power amplifiers
Power electronics
Power of attorney
Power resources
Power spectra

Current display in all online public access catalogs known to the author
Power amplifiers
Power (Christian theology)
Power electronics
Power (Mechanics)
Power of attorney
Power (Philosophy)
Power resources
Power (Social sciences)
Power spectra
Power (Theology)
Search under Power (Christian theology)

Figure 3. OPAC displays of subject headings with qualifiers

January 30, 1999, MARBI did approve the use of control characters (98-16R) to indicate non-filing characters and has recently issued guidelines for their use.[30] While these guidelines are somewhat conservative and restrictive, they do essentially throw the ball back into the court of the content standards, which need to change to allow inclusion of articles in heading fields, as well as that of the system designers, who need to retool their software to use the new MARC 21 control characters to achieve proper matching and sorting.

Consider the following examples. The episode of the television program *The Courtship of Eddie's Father* titled *A Little Red* currently must have the article dropped to file properly:

130 0_ $aCourtship of Eddie's father (Television program: 1969–1972). $pLittle red.

245 04$aThe courtship of Eddie's father. $pA little red . . .

In another example, the musical group Los Lobos has a cross reference in its authority record to add the article back to its name!

010 __ $an91017885

110 2_ $aLobos (Musical group)

410 2_ $aLos Lobos (Musical group)

Ideal display

Health (Canberra, A.C.T.)
Health (Chicago, Ill.)
Health (New York, N.Y. : 1981)
Health (San Francisco, Calif.)
Health advocate
Health alert
Health care costs
Health care management review
Health cost review
Health news
Health reports

Current display in all online public access catalogs known to the author

Health advocate
Health alert
Health (Canberra, A.C.T.)
Health care costs
Health care management review.
Health (Chicago, Ill.)
Health cost review
Health (New York, N.Y. : 1981)
Health news
Health reports
Health (San Francisco, Calif.)

Figure 4. OPAC displays of serial uniform titles with qualifiers

Ideal Display

United States——History——Colonial period, ca. 1600–1775.
United States——History——Revolution, 1775–1783.
United States——History——1815–1861.
United States——History——Civil War, 1861–1865.
United States——History——1969–

Current display in all online public access catalogs known to the author

United States——History——1815–1861.
United States——History——1969–
United States——History——Civil War, 1861–1865.
United States——History——Colonial period, ca. 1600–1775.
United States——History——Revolution, 1775–1783

Figure 5. OPAC displays of history headings with chronological subdivisions

4. Consider differentiating proper names from other topical subject headings.[31]

Currently, topical subject headings include many proper names, such as performing animals, fictitious characters, pyramids, ethnic groups, and computer systems.[32] Users, including many reference librarians, are confused about which index ("subject" or "author") to use to search for a proper name. The creation of a new tag in both the 6XX and the 7XX fields for proper names other than geographic, personal, or corporate names would allow systems more freedom to index all proper names (including fictitious characters, performing animals, and so on) in a "name" index or the option of indexing them in both a "name" and a "subject" index.

5. Ensure a separately tagged note is available for expression information composed by the cataloger.

Catalogers often have information about the expression of a work they are cataloging that does not fit into standard bibliographic record fields for expression information and instead must place that information in a cataloger-composed note. This is particularly common with non-book materials such as moving images. For example, the cataloger may know that a film being cataloged is a short airline version, but the item usually does not have an edition statement that can be transcribed into a 250 field. The 562 field is currently used in a limited fashion to hold a cataloger-composed expression note, so perhaps more widespread use of the 562 field is all that is required. Separate tagging is valuable because it can ensure that this note can be placed ahead of all other notes in displays (98-02).

6. Enable the encoding of item barcodes so that one barcode can be shared by multiple holdings records.

In order to support the creation of analytics in library catalogs, library systems need to allow one barcode to be shared by multiple holdings records. This is currently a problem that must be solved by vendors of local systems, rather than a problem requiring a solution in MARC 21.

7. Enable multiple bibliographic records to attach to one holding record.

In order to support the creation of cataloging records for multiple works contained in a single physical item, the so-called "bound-with problem," library systems need to allow multiple bibliographic records to be attached to one holding record (DP116). This is currently a problem that must be solved by vendors of local systems, rather than a problem requiring a solution in MARC 21. Cornell has a local solution, for example.[33]

8. Create a subfield code to differentiate the forename from the surname.[34]

Name searching could be made more precise if the user were allowed to specify whether a particular search string was a surname or a forename, for example, when using fill-in search boxes such as those offered on the Amazon.com Web site.

This may be a problem that could be solved by vendors of local systems by using the presence of a comma in a personal name heading to indicate that what follows is a forename—rather than a problem that requires a solution in MARC 21. However, such a solution should include the ability to recognize those cases in which the entire name is a forename, as signified by MARC 21 indicators.

9. Try to ensure that catalogers have to supply as little ISBD (International Standard Bibliographic Description) punctuation as possible.[35]

This may be impossible in current MARC 21 format, as there may not be enough subfields in 245 to support an alternative to ISBD punctuation. A substantial retrospective conversion of existing data also would be necessary, of course, even if it were possible to change MARC 21 to do this.

10. Add codes for method of distribution (e.g., theatrical distribution of motion pictures, television and radio broadcasting, print publication, Internet distribution).

The ability to limit moving-image searches to works theatrically distributed as motion pictures, excluding works broadcast as television programs, would be very useful. For moving images, such codes would be needed at the work level. Now that methods of distribution are changing so radically for materials more commonly collected by libraries than motion pictures and television programs, letting users limit their searches to works and expressions of works available over the Internet (as opposed to print publications), or vice versa, might also be useful. When the same expression of the same work is distributed both as a print or other offline publication and over the Internet, the coding would be needed at the manifestation level.

11. Add content designation to classification number fields to allow catalogers to differentiate between classification numbers that are used as both location devices and as discipline-based subject access devices, and classification numbers that are not used as location devices but still are valuable as discipline-based subject divisions. Examples are classification numbers assigned to materials shelved in remote storage in barcode sequence, or classification numbers assigned to electronic documents.

Wilson has done research demonstrating that only 20 percent of Association of Research Libraries (ARL) member institutions are applying classification numbers to electronic documents, which means that users are missing out on discipline-based subject access to these information resources.[36] Wilson does not suggest that a reason for this negligence may be that libraries are afraid to confuse users with classification numbers, fearing that they will expect to find items they seek on the shelf at the classification number location. However, this explanation for the decision not to classify seems a distinct possibility. Content designation might allow us, however, to suppress a classification number for an electronic document in an online shelflist but include it in an online classed catalog. It might also allow us to develop display constants in single record displays that better explain to users how the classification number is being used (whether as both location and subject access, or as subject access only and not as a location).

Summary

One reason various commentators are predicting the demise of the MARC format is a fear that if we allow our bibliographic data to be "segregated" from data in the rest of the world, we will be marginalized. Miller warns, for example, that "business interests recognize that users prefer to search a single resource and are working around the clock to prepare enticing information portals complete with their 'brands' of information," implying that if libraries cannot produce similar portals we will lose the competition with the business world for patrons' information dollars.[37] A caveat is in order, though. Many of the resources that would have to be merged into this "single resource" are not under the kind of authority control that allows libraries to help users find the authors, works, and subjects they seek. If our normalized data is not searched and displayed separately from non-normalized data, all of the expensive work we do to link and demonstrate relationships (which seems to be admired by most of these writers) is lost in a sea of mud. Or, as Gorman puts it: "I did a search on 'Michael Gorman' on Google. It yielded 'about 7710' results. Three in the first 10 (supposedly the most relevant) related to me. The other references were to a philosopher of that name in Washington, DC; a historian at Stanford; an Irish folk musician; and a consulting engineer in Denver, Colorado. The remaining 7700 entries are in no discernable order and some do not even relate to anyone called Michael Gorman."[38] If Gorman had done his search in a typical library catalog, he would have found his works listed separately from those of the philosopher, the historian, and the musician, each set of works under its own author heading.

The rest of the world is champing at the bit for a chance to mark up their data to support more complex display and indexing.[39] We should consider ourselves fortunate that thanks to the foresight of people like Henriette Avram, catalogers have been creating a semantic Web for almost forty years, a Web that day in and day out allows users to explore the riches in our libraries, archives, and museums.[40] Let us be careful not to destroy what we have in a rush to emulate the rest of the world, which may be on the threshold of recognizing its own need to develop solutions similar to the ones we in the library world already employ.

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Appendix

Example of an Expression-based Record for a Film Preserved at the UCLA Film and Television Archive with Manifestations Described as Holdings Appended to the Expression Record

One hour with you / Paramount Publix Corp. ; an Ernst Lubitsch production ; produced and directed by Ernst Lubitsch ; assisted by George Cukor ; screenplay by Samson Raphaelson. — United States : Paramount Publix Corp., 1932. —
Romantic comedy with songs; feature.
Based on the play Nur ein Traum, Lustspiel im 3 Akten (Only a dream) by Lothar Schmidt, which opened in Munich in 1909. Remake of The marriage circle.
CAST: Maurice Chevalier (Dr. Andre Bertier); Jeanette MacDonald (Colette Bertier); Genevieve Tobin (Mitzi Olivier); Charlie Ruggles (Adolph); Roland Young (Professor Olivier); Josephine Dunn (Mlle. Martel); Richard Carle (Detective Henri Pornier); Barbara Leonard (Mitzi's maid).
CREDITS: Photography, Victor Milner; camera operators, William Mellor and William Rand; assistant cameramen, Guy Roe and Lucien Ballard; gowns, Travis Banton; interpolated music, Richard A. Whiting; sound, M. M. Paggi.
Playing time on release was 75 or 80 min., according to: AFI catalog, 1931–1940.
Copyright notice on videodisc sleeve: c1932, Paramount Publix Corporation, renewed 1959 by EMKA, Ltd.

HOLDINGS:

1. Inventory number: VA11168 M
1 videocassette of 1 (VHS) (80 min.) : sd., b&w and col. ; 1/2 in.
Los Angeles, California : UCLA Film and Television Archive, March 1994. Reproduced from 3/4 in. videocassettes (M56801). Reproduction for preservation purposes permitted by Universal.
Tinted sequences transferred as color on videotape.

2. Inventory number: M56801
2 videocassettes of 2 (80 min.) : sd., b&w and col. ; 3/4 in.
Los Angeles, California : UCLA Film and Television Archive, March 1994. Reproduced at Video Craftsmen from 35 mm. prsv safety print (M32578). Reproduction for preservation purposes permitted by Universal.
Tinted sequences transferred as color on videotape.

3. Inventory number: M32578
5 reels of 5 (80 min.) (ca. 9000 ft.) : opt sd., b&w with b&w (tinted) sequences ; 35 mm. safety print.
Los Angeles, California : UCLA Film and Television Archive, 1986. Reproduced from 35 mm. safety prsv dupe pic neg (XFE2240 -2248 M) and dupe track neg (XFE2250 -2258 M). Reproduction for preservation purposes permitted by Universal.

4. Inventory number: XFE2240 -2248 M
9 reels of 9 (80 min.) (ca. 9000 ft.) ; 35 mm. safety prsv dupe pic neg.
Los Angeles, California : UCLA Film and Television Archive, March 1994. Reproduced from 35 mm. nitrate print (M2993). Reproduction for preservation purposes permitted by Universal.

5. Inventory number: XFE2250 -2258 M
9 reels of 9 (80 min.) (ca. 9000 ft.) : opt sd. ; 35 mm. safety prsv dupe track neg.
Los Angeles, California : UCLA Film and Television Archive, March 1994. Reproduced from 35 mm. nitrate print (M2993). Reproduction for preservation purposes permitted by Universal.

6. Inventory number: M2993
5 reels of 5 (80 min.) (ca. 9000 ft.) : opt sd., b&w with b&w (tinted) sequences ; 35 mm. nitrate print.
CONDITION: Fragile; shrunken.

The Hybrid Conservator

Challenges in a Research Library Environment

Whitney Baker

As new preservation programs emerge, many research libraries can afford to hire only one conservation professional, a "hybrid conservator," whose position description includes oversight of batched, mass production treatments (usually for circulating collections) and execution of single item treatments (usually for special collections). In order to determine some of the most frequent and persistent challenges facing this relatively new strain of conservation professional, an informal survey was developed and distributed to members of the American Library Association's preservation administrators' online discussion group (PADG). The results of this survey, albeit limited, indicate several distinct challenges facing those in hybrid conservator positions, centering on the variety of administrative duties that take time away from high-end treatment activities preferred by many conservators. This paper discusses the most pressing concerns of the respondents and proposes solutions to some of the most common challenges facing the hybrid conservator.

As the field of library and archives conservation continues to develop nearly forty years after its commonly agreed upon date of inception as a profession,[1] many institutions with long established preservation departments employ large workforces to meet the physical needs of their collections. Staff in a typical mature book and paper conservation laboratory include special collections conservators and technicians, general collections conservators and technicians, reformatting experts, and various support personnel.[2] Preservation professionals in these institutions have successfully demonstrated the benefits of preservation to library directors, and their achievements have been noted by institutions hoping to emulate the more established conservation programs.

As the importance of having a preservation program continues to gain acceptance among research library directors, institutions with holdings in the two to five million volume range are adding preservation staff and formalizing programs in hopes of someday boasting a mature, vibrant preservation program with adequate staff to meet most of the needs of the collections.

According to Merrill-Oldham, Morrow, and Roosa in their 1991 Association of Research Libraries (ARL) report *Preservation Program Models,* staffing models for a mature preservation program for an ARL library with two to three million volumes should include a preservation librarian, a chief conservator, and three to six conservation technicians. In an ARL library with three to five million volumes, the conservation staff in a mature program should include a chief conservator, one to two conservators, and four to eight technicians.[3]

While these models seem realistic for mature programs, staffing levels may be lower in an emerging program in a library with two to five million volumes. Often restricted by tight finances and limited resources, these medium-sized

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research libraries may employ one conservator to manage both general and special collections conservation in a laboratory designed for both purposes. Such positions, which combine the roles of two increasingly distinct library conservation specialties, have led to a third type of conservation professional: the "hybrid" conservator, a supervising library and archives conservation professional whose position description includes oversight of batched, mass production treatments (usually for circulating collections) and execution of single item treatments (usually for special collections). This paper will discuss the main challenges of the hybrid conservator, that is, one who has dual responsibilities, and recommend ways to create a more agreeable working environment.

The Split Personality of the Hybrid Conservator

The field of library and archives conservation has matured enough that two distinct types of library conservators have emerged: the general collections conservator and the special collections conservator. Many conservators in large institutions focus on either general or special collections; as a result, the literature reflects the development of unique methods for treatment in each of these specialties. The author found no resources that specifically address the treatment skills of the hybrid conservator. A person in this position must look to resources such as the *Journal for the American Institute for Conservation* and *Book and Paper Group Annual* for current information about special collections conservation techniques. Similarly, many published handbooks show general conservation book repair techniques.[4] In addition, the Library Collections Conservation Discussion Group, which meets at American Institute for Conservation (AIC) meetings, addresses many of the challenges of general collections conservators.

However, an extensive search of preservation literature spanning the last fifteen years uncovered nothing that specifically addresses the challenges faced by the hybrid conservator. This paper seeks to provide solutions as the hybrid conservator, merging special collections and general collections approaches, finds a way to cope with the "split personality" the position requires.

A typical job posting for such a conservator for a new or small program exemplifies the wide range of tasks facing the successful applicant. Job advertisements for hybrid positions were collected and analyzed for shared characteristics.

The author examined all advertisements appearing between January 1993 and August 2003 in two of the most common resources a conservator seeking employment would consult: the Conservation Online distribution list (http://palimpsest.stanford.edu) and the *Abbey Newsletter*.

In order to qualify as a hybrid job, positions had to include the treatment of both general and special collections library materials by the conservator in the same lab space. Twenty-one total qualifying postings appeared during this period; fourteen were unique and seven were duplicates, as some institutions advertised the same position multiple times during the survey period without significant variations in job duties. Searches in other publications, such as the *AIC Newsletter,* did not result in additional job advertisements that were not already present in the two sources consulted. The number of times sixteen different duties appeared in these fourteen postings is presented in table 1.

The analysis determined that, in addition to treating both general and special collections materials, this hybrid position is often responsible for:

- Supervising a small workforce of usually no more than two to three FTE (full-time equivalent) staff and one to two FTE students or volunteers
- Engaging in quality control
- Overseeing disaster preparedness and response procedures
- Ordering supplies
- Keeping ARL preservation statistics
- Maintaining laboratory equipment
- Coordinating environmental monitoring activities
- Serving on library and universitywide committees
- Becoming active in the profession at a regional and national level

Given these many tasks, the hybrid conservator is faced with a number of time management issues that, if not addressed properly, may lead to loss of effectiveness, burnout, and frustration.

The General Collections Conservator

General or circulating collections conservators are responsible for the care and protection of a large quantity of materials, most of which may be checked out by patrons and removed from the library premises during use. Reflecting the sophistication of a large research library system, a general collections conservation department customarily receives damaged materials from many branch and departmental libraries. From the fourteen position descriptions and additional searches on the Web sites of advertising institutions, the author determined that the institutions seeking a hybrid conservator had between three and fourteen branches, with an average of six. Unless strict guidelines are in place, most conservation laboratories could receive much more work than they are able to handle. In order to effectively meet the needs of so many libraries, collections conservators use managerial and mass production approaches,

Table 1. Duties for hybrid conservator positions advertised 1993–2003 (n=14)

Duty in job description	Number of occurrences
Treatment of general collections	14
Treatment of special collections	14
Supervise/train staff	11
Supervise/train students	11
Establish treatment specifications and quality control procedures	10
Establish treatment priorities and workflows	9
Participate in disaster preparedness/recovery	9
Participate in outreach to library staff and beyond	7
Order supplies	5
Keep statistics	5
Participate in special projects	5
Maintain equipment	3
Undertake collection surveys	2
Participate in environmental monitoring	2
Cooperate in state and regional groups	2
Manage budget	1

including batching similar repairs for more efficient treatment, precutting supplies and materials used in treatment, and overseeing workflow management to most effectively match the skills of workers with the work to be done.[5] The volume of material treated is maximized in order to more fully meet the repair needs of the collections the lab serves.

General collections conservation staff adhere to specifications delineated for each repair, usually documented in a laboratory manual. Treatment reports are not written for individual items; instead, the laboratory manual lists the steps in each treatment to document the work that is done. In general collections conservation, therefore, the item to be treated is matched to the available treatment options. The collections conservator oversees quality control operations to ensure that the work leaving the conservation lab is consistent and acceptable. General collections conservation has as its goal the production of durable repairs so that the item can be used safely, both in the library and beyond. The focus is on quick turn around time and pragmatic solutions; compromises are sometimes made, with a durable repair often favored over a "perfectly executed and nearly invisible" one.[6]

The Special Collections Conservator

The rare book or special collections conservator works primarily with closed stacks material, often of higher artifactual value than most items found in circulating or general collections. As noted by Jan Paris in the pamphlet *Choosing and Working with a Conservator,* "The aim of conservation treatment for material with artifactual value is to assure the items' longevity and continued availability for use, while altering their physical characteristics as little as possible."[7] Such a conservator must have a thorough grounding in conservation theory and chemistry and should have served an apprenticeship or internship with a focus on refining hand skills. Given the often priceless nature of the materials this conservator may treat, it is vital that the conservator recognize and articulate his or her treatment limitations.

Special collections conservation usually reverses the basic approach of general collections conservation. Instead of fitting an item to be treated into the available specifications of treatment, this type of library conservation tailors the available treatment options to the particular item, based on lab capabilities, skills of the conservator, and time available to spend on treatment. Before commencing a treatment, the special collections conservator will write a thorough report and take photographs or slides to describe the item and document its present condition. The special collections conservator is well aware of the American Institute for Conservation's *Code of Ethics and Guidelines for Practice* and conducts his or her professional activities accordingly.[8] The special collections conservator sometimes may employ batching techniques similar to those employed in general collections conservation, but usually special collections items will require more individualized attention and result in a longer treatment time and a greater cost per item than general collections items.

The Hybrid Conservator

As stated earlier, the hybrid conservator oversees and executes both general and special collections conservation treatments. The hybrid conservator must anticipate the needs of diverse collections, from the maps collection with many oversized flat paper items, to the art library that houses oversized and heavy books printed on clay coated paper, to the rare book collection of incunabula. While conservators are trained to regard each item they treat with the same respect and make no distinctions among items of differing values, the reality is that some materials must be afforded more attention. The hybrid conservator's role is to determine which items require individualized time and care and which can be repaired with a mass production approach.

While the hybrid position provides an opportunity for a conservator to sample various facets of library conservation, most candidates for a hybrid position would prefer either general or special collections conservation, according to conversations the author has had with job candidates and newly hired hybrid conservators. If it is true that the "collections conservator is first a manager; the rare book conservator is first a skilled practitioner,"[9] then preservation managers hoping to hire a hybrid conservator may assume that it is advantageous to choose someone who has been trained in more specialized, higher-end, single-item

treatment work, reasoning that this person should be able to handle "lower level" circulating collections work. This notion is often not a good assumption. General collections conservation is just as difficult a job, requiring a different set of skills and a unique propensity toward production work and supervision. Someone who prefers spending weeks or months on one item, enjoying solitude and disliking the flurry of activity common to the mass production approach, may find the pace of general collections conservation work unnerving. Being an effective manager is not necessarily a skill possessed by many conservators, nor do all conservators have an interest in supervision.

The conservator considering a hybrid position should evaluate personal strengths and weaknesses and honestly assess the results before applying for a position. Not every conservator enjoys both types of work enough to find a hybrid position satisfying. Anecdotal evidence and comments from the Association of Library Collections and Technical Services' Preservation Administration Discussion Group (PADG) survey discussed below suggest that many conservators new to the field would prefer to specialize in special collections work in an idealized single-item treatment environment but end up in hybrid positions because: (1) conservation positions that focus solely on the treatment of rare materials are not often available, (2) they reason that a hybrid position will provide the opportunity to "do it all" and gain experience in most aspects of library and archives conservation, or (3) a hybrid position affords young conservators a chance to take charge of a conservation lab early in their careers. These may or may not be acceptable or pragmatic reasons to take on the challenges of a hybrid position. As a potential job applicant, the conservator should discuss his or her concerns and expectations with potential employers to minimize misunderstandings on both sides about the position's responsibilities before problems arise.

Survey of Hybrid Conservators

As a hybrid conservator who has worked in two medium-sized conservation laboratories, the author was interested in determining if her experiences were similar to those of her colleagues. In March and April of 2003, she asked members of PADG to participate in an informal survey. Questions asked are provided in the appendix. She provided a definition of the hybrid conservator and asked participants who felt they held such a position to respond. In all, eleven responses were received; one was disregarded because the person's position as described did not fit within the definition of a hybrid conservator.

Although determining how many hybrid conservators are currently working in the United States is difficult, based on the screening of conservator position ads discussed above, at least fourteen unique positions are available. Six of the ten respondents to the PADG survey worked in institutions represented by these fourteen job positions; at least three have held more than one of the hybrid positions advertised in the ten-year period. Of the remaining eight (out of fourteen) unique posted positions, two were never filled and two are no longer hybrid positions, leaving only four positions of those advertisements that were not represented by respondents to this survey. In addition, four PADG survey respondents represented institutions that had not advertised in the period from 1993 to 2003. Two of the respondents based their responses on their past experiences as a hybrid conservator, one respondent was in a position that was not advertised nationally, and one was in a position that was not advertised as a hybrid position but has evolved into one. Based on these data, the author assumed a minimum of sixteen hybrid conservators working in the United States at the time of the informal survey. Ten of these are represented in the PADG survey.

Of the ten valid respondents, six worked in institutions with holdings in the two- to five-million volume range. One library was slightly smaller, with 1.5 million volumes, and three had larger holdings. Table 2 presents data on collection size and items treated for each library represented in the survey.

Participants were asked about time management activities, such as the percentage of their work time spent on various administrative duties versus at the bench on treatment. In addition, respondents were questioned to identify which persons, if any, in the conservation lab performed routine conservation laboratory duties, such as supervising students, performing quality control on finished work, ordering supplies, and maintaining equipment.

Results
Time Management
Scheduling Bench Time

The clearest result from the survey is that most hybrid conservators do not feel that they have enough time working on treatments "at the work bench" when other duties beckon. In fact, only one person stated that he has enough time to spend on treatment and only when, as he reported, "timeliness [in producing a finished product] isn't a factor." Time spent at the bench ranged from 3 to 25 percent. The highest percentage was the response of one conservator who felt he had enough time for treatment. The most time spent by someone who did not feel she or he had enough time at the bench was 20 percent. See table 3.

Table 4 compares actual versus desired responsibilities. Respondents were asked to list their three most frequent job duties, based on time spent performing different tasks, and

to identify the three tasks they most wished their job entailed. Treatment of materials appeared as one of the three most frequent duties for only four of the ten respondents. When asked to list the top three tasks they wished

Table 2. Institutions represented in the survey (n=10)

Institution*	Holdings (in millions of vols.)**	Volumes treated (per 1000 vols.)***
A	7.5	13.0
B	10.0	30.0
C	7.5	2.0
D	1.5	2.0
E	2.0	12.0
F	3.0	2.5
G	5.0	9.5
H	3.0	14.0
I	3.0	10.0
J	4.0	10.0

*   Some respondents wished to remain anonymous; therefore, institution names are not listed in the results, but have been assigned letters that correlate among the tables in this paper.

** Holdings reported in, *ARL Statistics 2001–2002,* comps. and eds. Martha Kyrillidou and Mark Young (Washington, D.C.: Association of Research Libraries, 2003). Values were rounded to the nearest half million volumes.

*** Volumes treated reported in "Table 3: Conservation Treatment, Binding and Preservation Reformatting" in *ARL Preservation Statistics 2000–2001,* comps. and eds. Mark Young, Martha Kyrillidou, and Julia Blixrud (Washington, D.C.: Association of Research Libraries), 26–31. These values do not include flat paper treatments, reformatting, or commercial binding and merely serve as one indication of in-house book treatment capabilities at each institution. Values were rounded to the nearest five hundred volumes.

Table 3. Percentage of time spent on treatment versus administrative duties (n=10)

Institution	Time spent on treatment x=(%)	Enough treatment time	Time spent on administration x=(%)
A	3	N	97
B	10	N	50–75
C	10	N	75
D	10	N	20–30
E	25	Y	75
F	10	N	40–90
G	20	N	80
H	20	N	70
I	20	N	70
I	20	N	50
Mean*	15		67
Median	15		70

*   Averages were calculated for ranges of percentages before final mean and median calculations were figured. Because most conservators have duties in addition to treatment and administrative, percentages will not always equal 100 percent.

their jobs encompassed, all ten respondents included treatment of materials; six listed it as the most desired activity.

In written narratives appended to the survey, two respondents commented that they were told when they were hired that their position would involve much more bench time than it actually does. These comments may indicate that preservation administrators have an unrealistic idea of how many administrative tasks will fall to the hybrid conservator. A preservation administrator (PA) who has not previously worked with a conservator might feel that the PA position can and should shoulder most of the departmental administrative tasks. However, the PA and others on hiring committees do not always take into account the often "hidden" time required for the conservator to train and supervise staff and students, prepare treatment specifications, research materials and order supplies, respond to disasters, and compile laboratory statistics. In a panel discussion about the changing duties of book and paper conservators that took place at the 1986 American Institute for Conservation Book and Paper Group meeting, Robert Espinosa stated:

> The trend in libraries to create positions of preservation librarians or administrators ideally can address the need for attacking some of these system-wide problems without totally co-opting the time of the conservator. On the other hand the conservator may feel impelled to be involved at this level of policy development because of the far reaching implications of these decisions. As technical specialists, in a field largely determined by technical parameters, we are loathe to completely relinquish control to administrators and precipitate a . . . scenario where decisions are made independently of the technical facts, with potentially disastrous results.[10]

Because a hybrid conservator has many duties, managing a schedule to most readily accommodate a wide variety of activities may be challenging. The length of time necessary to execute a treatment is hard to predict. As a hypothetical example, two hours budgeted for a stain removal treatment for a special collections item could easily balloon to twice that time. In the midst of a difficult treatment, the conservator may not be able to stop easily if other lab issues arise. As Denise Thomas, a paper conservator and member of the panel at the 1986 Book and Paper Group Meeting noted, "such a pace is not sympathetic to sitting down at odd moments and doing careful, restrained, thoughtful conservation treatments."[11] If the hybrid conservator's schedule does not allow for such flexibility, treatments that are challenging, unusual, or time consuming might not be started in the first place.

The respondents provided some solutions for the management challenges of finding time at the bench. Most

Table 4. Three most frequent duties versus three most desired duties (n=10)

Duty	Actual	Desired[*]
Treatment of materials	4	10
Supervising/training staff and students	10	6
Undertaking administrative duties	9	5
Lab management	5	3
Preparing for exhibits	2	2
Other	0	2

[*] One respondent listed only one desired responsibility, so this column does not reflect a 100 percent response rate.

hybrid conservators would benefit from setting and adhering to a more rigid work schedule. A few respondents indicated that scheduling blocks of time for treatment is the *only* successful mechanism for engaging in higher-end treatments. Ideally, the conservator might work some hours alone in the lab or at least a few hours without student assistants. Dedicating certain days or times for different types of work will encourage the conservator to make treatment a priority.

In addition, the hybrid conservator might only answer e-mail and the telephone at scheduled times during the day. In a culture of immediate response and gratification, this technique may be initially unpopular. However, making an effort to check messages immediately in the morning, at lunch, and at the end of the day should not significantly affect most inquiries. Of course, emergencies may arise that require immediate attention.

Some survey respondents appreciated having firm treatment deadlines in order to justify time spent in treatment. Although this strategy is most often used for conservation treatment for items prior to exhibition, it also could be applied to routine lab treatment as well. This approach may be stressful for some people; success is largely dependent on the conservator's work habits and motivation.

Two hybrid conservators responding to the survey reported that they include treatment goals as part of their yearly performance evaluation plan, thereby elevating treatment time above other laboratory duties. As one respondent noted, this approach provides an opportunity for her to discuss expectations and mutual goals with her supervisor. The conservator discovered that "finding the time [to treat items at the bench] and letting other things slide was actually a measure of success" under this model.

Breaking the mentality that the hybrid conservator must be available to meet everyone's needs at every moment is difficult, but is key to the well being of the hybrid conservator. Because, as one respondent stated, "getting up the mental energy to push people and problems away and just work" is the most difficult aspect of time

management, it will be necessary to educate staff inside and outside the department that the work of a conservator is not always that similar to other library departments where unexpected interruptions, though not enjoyed, will not be detrimental to the task at hand. Since a "Please Call Again" sign on the door might frustrate other library staff, the conservator might host an open house or make a presentation for library staff to explain more about the work of a conservator and the occasional need to close the laboratory door during a difficult treatment.

Meeting Needs of Constituents

As discussed earlier, most hybrid conservation laboratories serve various branch libraries as well as the departments within special collections. With one conservator supervising all this activity, strategies are required to effectively meet the needs of many constituent libraries.

Some institutions have established quota systems in which each branch library or collection is awarded a number of hours or points of treatment time per specified time period.[12] Using such a system spreads treatment time throughout the library system, affording every library a chance to improve the condition of at least part of its collections. This system places some of the burden on the various branch and departmental library staff to learn about damaged items in order to determine which materials require most immediate treatment. As a result, this approach may cut down on unnecessary or low priority work. It also allows the conservation staff to gain a good sense of regular workload, so that the laboratory is not inundated with an unusually high volume of work or surprise projects at peak times of the year, such as at the end of each semester or when an important exhibit will be mounted. However, it may result in a great amount of work for the conservation staff, as someone must estimate available treatment hours per year, determine how many hours each library should be awarded, and track how many points each library has spent at any given moment.

Just as a general collections conservator is beholden to the various branch and departmental libraries on campus, the special collections conservator works with representatives of the various collections within special collections, such as rare books, university or institutional archives, and manuscripts. No matter the collection, there will be a far greater need for conservation treatment than a hybrid conservator, who is only partially dedicated to special collections work, could ever hope to meet. Staff from the divisions within special collections should devise treatment priority lists to help the hybrid conservator find a way to balance the needs of competing priorities. A quota system also might function in this environment, although the time the conservator can spend on any one collection probably

will be quite small. In order to attempt to serve the needs of all constituents and be responsive to others in the library system, the hybrid conservator should complete at least one treatment, survey, or project for each department within special collections each year.

For both general and special conservation arenas, the conservator might schedule a standing meeting time for staff in different departments of special collections or various general collections libraries or branches so problems can be discussed at a routine time, rather than having unexpected questions result in ill-timed interruptions at other times. In this manner, the hybrid conservator is able to discuss problems with library staff on his or her own schedule.

Personnel Supervision

Staffing poses one of the greatest challenges for the hybrid conservator, as so much of the success of the small hybrid program depends on the personnel working in it. Information about staffing levels is presented in table 5. Nine out of ten institutions responding to the survey employed permanent staff working under the conservators, averaging 2.44 FTE per institution, and all but one had student workers, averaging 2.00 FTE per institution.

Most labs overseen by the hybrid conservators who answered the survey did not have a large workforce. As demonstrated by the data in table 4, ten responding conservators listed supervision, training, or both as primary responsibilities, whereas only six considered this as one of the desired top three duties. Responses given in the survey suggest that the combination of small workforces and high expectations of lab output leads to frustration.

Work in the hybrid conservation laboratory requires extensive technical training and is highly dependent on people to get the work done. Since many months may pass before a replacement will be trained after a staff member leaves, losing a highly trained worker in a small laboratory can result in serious consequences for lab efficiency, output, and morale. A few respondents to the survey indicated that their greatest professional worry is that highly trained staff will leave, forcing them to start anew the labor-intensive process of hiring and training.

In the small hybrid lab, the conservator is responsible for initial training of all staff. The conservator must first establish a treatment manual, in which the lab repairs are spelled out in detail, along with supplies needed and estimated time required for each treatment. The conservator also will establish a statistics form so workers may keep track of work done. Having the chance to train others and impart knowledge, often one of the most gratifying parts of the job, requires large amounts of time for preparation and teaching.

Table 5. Staffing levels in hybrid labs (n=10)

Institution	Staff (FTE)	Student staff (FTE)
A	8.75	1.50
B	1.25–2.00*	2.25
C	3.00	0.75
D	2.00	0.40
E	2.00	2.00
F	2.00	0.00
G	3.00	4.00
H	1.00	3.00
I	0.00	0.50
J	1.00	3.00
Mean	2.44	2.00
Median	2.00	2.10

* The average of this range was used to calculate the mean and median below.

Technicians and Assistants

In all but one of the responding libraries, conservation technicians aided the hybrid conservator. Typical duties of these assistants, as based on the survey responses, included treating circulating collections, performing quality control for finished work from the general collections, compiling periodic lab statistics, training students in general collections work, treating special collections materials, ordering supplies, and maintaining equipment. Table 6 reports data on work assigned to conservators, assistants, and student staff.

A few respondents indicated that they appreciate the continuity provided by permanent staff and would gladly trade in student assistant hours for permanent staff if the option were available. Ideally, a conservator will have at least one assistant who shoulders some of the administrative tasks that keep the conservator from high-end treatment. One respondent stated that she felt that a good technician could run the general collections program, freeing her to deal with special collections. Ideally, she wished her lab had a senior technician to supervise general collections work and handle special problems; other staff could then execute the work under the senior technician's direction. However, some of the tasks that require the least amount of training, such as pamphlet binding and "tip ins," are better completed by student workers or volunteers, so some level of student staffing is beneficial.

Because of the repetitive and often tedious nature of the work, as well as the implications for workflow if turnover is high, promoting high staff morale is crucial. Continuing education opportunities should be made available to help keep assistants interested in the work. Libraries often focus on training programs for the student workforce; while opportunities for staff are not always valued as highly, they are just as essential to the health of the lab.[13]

Table 6. Assignment of duties (n=10)

Duty	Number of libraries in which duty is performed by		
	Conservator	Assistants	Student employees
Treat general collections	6	8	9
Train in general collections treatment	9	4	0
Supervise general collections treatment	10	2	0
Perform quality control of general collections work	9	5	0
Treat special collections	9	4	1
Train in special collections treatment	6	1	0
Supervise special collections treatment	6	1	0
Perform quality control of special collections work	9	0	0
Compile periodic statistics	8	5	2
Compile yearly ARL statistics	6	3	2
Order supplies	10	4	1
Maintain equipment	10	3	0

Student Employees and Volunteers

According to the survey data featured in table 6, nine out of ten institutions employed student workers to treat general collections materials. One institution also utilized 0.5 FTE students to treat special collections materials. Most libraries rely heavily on a student workforce because of the low cost and ready availability of the labor. Although exceptions exist, some conservation laboratories are staffed with student assistants who may not be highly motivated by the work or, if they are, do not always have much time to dedicate to the job. Because a hybrid conservation laboratory is usually small and highly reliant on student labor, selecting and retaining reliable and competent students is of special concern.

Due to the variable nature of a student workforce, training is a constant priority and will be quite draining for the hybrid conservator without a technician or senior student to take on this responsibility. One manner of retaining students is to provide ever more difficult tasks to encourage interest in the work.[14] Motivating students by promotion and incentives, such as learning a more artistic or historic binding structure once a semester, may help keep highly trained students in the lab and not searching for higher paid alternatives off campus.

Once the students are hired, scheduling their work time is another challenge. Many conservators permit students to work whenever they can during the normal workday, as the conservation laboratories are not often open in the evenings and on weekends when students might prefer to work. However, this manner of "open scheduling" usually means that the hybrid conservator is not left with any large blocks of time necessary for single item treatment without interruption. One survey respondent noted that she changed her attitude toward student workers—instead of making herself available whenever the students could come and work, she hired fewer of them and scheduled their work times around hers.

Volunteers are a related, but separate, issue. "Free" labor has a cost. Volunteers will require significant supervision and attention from lab staff. Volunteers and unpaid interns may be a welcome addition to a conservation laboratory, especially for a special project that falls outside the normal work routine, yet the learning curve for work in the conservation lab is fairly steep and volunteers often do not work sufficient hours to learn the skills necessary to be an asset to the lab. Many volunteers have a vested interest in working in the lab and ascertaining a volunteer's motives may be difficult. If volunteers hope to work on personal collections or set up their own business repairing books, there may be a conflict of interest. Many volunteers will not be happy in the lab when they realize that their work is usually at the low end and involves repetitive and often tedious tasks. The supervisor should clearly define the skills that the volunteer will learn to avoid confusion and unmet expectations.[15] A few respondents noted that they have refused volunteer labor because the infrastructure was not in place to support the work of outsiders.

Additional Recommendations
Lab Design and Office Space

Some of the respondents to the survey took the opportunity to include personal comments. A frequent additional area of concern was the design of the laboratory and office space for the conservator because of its effects on workflow. A hybrid conservation lab is constructed as an all-purpose space for both general and special collections work. Authors of a report about the design of a hybrid laboratory at Iowa State University noted that "a treatment facility designed solely for one type of collection or the other will be very different from one designed to treat the needs of both general and special collections with a broad range of physical problems."[16] The hybrid conservator may work on a stressful single item treatment at the same time and in the same space in which students sew or staple pamphlets into binders and tip errata into books. Mass production work in general collections conservation may result in a frenzy of activity in the lab whereas single-item treatment may require focused concentration in silence. Making changes and improvements to laboratory space may improve the

hybrid conservator's ability to successfully work in that environment.

At least half of the ten respondents to the survey were the first hybrid conservators at their institutions and thus played a large role in setting up the lab, ordering supplies and equipment, and organizing workflow paths. Although these are time-consuming first steps that will undoubtedly take much time away from treatment, a well planned lab will yield benefits in the future. Soliciting the opinions of others is useful in determining what setup will work best in an ideal hybrid conservation facility.

Theoretically, the hybrid laboratory will have separate areas for circulating and special collections work. This division is necessary for the conservator to concentrate on high-end treatments apart from the production setting of general collections work. One survey respondent noted that dedicating a space to special collections work was useful in managing her time. Before she organized her lab space, so much energy was required to gather the necessary supplies and equipment that it was easy to allow other work to take precedence. For her, "having . . . space ready and waiting for me to get to work whenever I was able allowed me to stick to my plans better."

All conservation work requires ample space. Most hybrid lab staff will share large equipment, such as book presses, job backers, and the board shear. An ideal room for mass production work might include stations with precut supplies to minimize work time per item and feature shared benches for student workers. Special collections work may require specialized equipment, such as a microscope, washing sinks fed with purified water, a suction table, and photo documentation equipment. Ideally, this equipment should be located near the conservator's work bench. The hybrid conservator should evaluate how different workflow needs can be accommodated in a shared space so that all activities and related equipment locations are optimized.[17]

In a hybrid laboratory, security takes on special significance. Keeping track of work with many employees at different levels of training and trustworthiness coming in and out of the space may be difficult. The hybrid laboratory must have either a safe or locking drawers and cabinets in order to keep special collections materials secure. To heighten security, only certain employees should be permitted a key to the laboratory. Some conservation laboratories are equipped with security systems for added protection.

The location of the hybrid conservator's office in relation to the workbench merits consideration. The hybrid conservator needs not only a workbench for treatment, but also a desk with a computer, phone, and other typical office equipment. If the computer and phone are located next to the workbench, the conservator should exercise restraint to avoid answering the phone and e-mail when projects are under way. If the desk is outside of the lab, the conservator may run back and forth from desk to bench, but it may be easier to focus on the task at hand.

Other Responsibilities outside the Lab

As a library staff member, the hybrid conservator participates in other library activities that, while important, take time away from primary responsibilities in the lab. According to the job positions examined for this paper, at least half of the hybrid conservators serve on library and institutional committees, participate in regional and national professional organizations, engage in education and outreach, answer preservation questions from the general public, or perform some or all of these duties. Although not all of these responsibilities were listed in all job descriptions, almost all hybrid conservators have external responsibilities to other library departments, the public at large, and regional and national conservation and library organizations. Many survey respondents felt particularly frustrated with these other responsibilities, as they can be overwhelming.

The added component of holding a faculty appointment can further complicate the time management challenges of the hybrid conservator. Although many benefits come with faculty status, not the least of which is greater credibility in the institution and larger community, the rigors of a tenure-track position are significant. These may include requirements for regional and national service, publication, and research. While these activities may promote professional development and lead to satisfaction, they also may require large amounts of time away from primary job responsibilities. The conservator must find a means of balancing responsibilities in the lab and those in the larger conservation and library communities.

Conclusion

In order to retain and develop an effective hybrid conservator, the conservator, preservation administrator, and library administrator must cooperate. The library administrator may require additional information about the benefits and limitations of hiring only one conservator to manage both circulating and special collections conservation. Administrators should educate themselves about how conservation fits into a research library preservation program. Sometimes the library administration hopes that the hybrid conservator will be able to solve many problems and reduce backlogs that have plagued the institution for years, but hiring one professional may not create sufficient infrastructure to effect rapid and sweeping change.

Preservation administrators (PAs) should understand the very real desire of most conservators to dedicate significant work time to treatment activities. After years of school

and apprenticeships to gain those skills, this lack of bench time is usually the greatest frustration facing the hybrid conservator. PAs should encourage professional development opportunities that will build on the hybrid conservator's existing skills and lead to professional satisfaction.

In addition, the hybrid conservator may be hired with unrealistic expectations, on both the part of the supervisor and the conservator. The PA and conservator should work together to develop a pragmatic list of priorities for the conservation program. The hybrid conservator should be encouraged to undertake a time management survey to determine how time is allocated if it seems that top goals are not being accomplished. Both the PA and conservator should be realistic about what one conservator can accomplish when facing the needs of a research institution, and the PA should understand that with the skeletal staff of most hybrid conservation laboratories, large or unusual projects might require extra staff or volunteers to accomplish. For the normal routine, the hybrid conservator will require at least one assistant to manage student employees and supervise the daily work of the general collections program.

Despite the very real challenges of working as a hybrid conservator, there are many benefits to serving in such a position. For one, it allows a conservator to be in charge of a department, often at a fairly early stage in his or her career. The position also affords the opportunity to keep abreast of wide-ranging aspects of the field, from learning about scanning replacement pages for damaged circulating volumes to discovering new techniques for reattaching loose boards to leather-bound volumes in a special collections environment. The hybrid conservator also may feel that focusing on both general and special collections conservation tasks makes a difference for the largest possible percentage of a research library collection. Having the opportunity to pass on knowledge to others by supervising and training is often one of the most satisfying aspects of the job. Finally, one survey respondent noted that a conservator in a unique and often new position in the library may have a higher degree of internal visibility than conservation colleagues at larger institutions. The conservator may be regarded as "special" and treated accordingly, enjoying a more direct line to library administration than a conservator with comparable years of service at a larger institution.

Part of the challenge of creating a true strain of hybrid conservators is the lack of well defined models on which to build. This type of conservator is not adequately discussed in most conservation training programs, in which general and special collections conservation are not usually mentioned in the same sentence, let alone explored in the same class. As more research libraries realize a need for conservation professionals to oversee the physical care of their collections, the trend toward hybrid conservation staff likely will continue to increase. As a result, more published examples of successfully operating hybrid facilities are needed as this type of conservation program becomes more common. Using this research, the library administrator, the preservation administrator, and the conservator can work together to create an environment that promotes retention and encourages the hybrid conservator's professional satisfaction for the long term.

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Appendix
Hybrid Conservator Survey

A "hybrid conservator" is defined as a conservation professional whose job description includes supervision or treatment of both batched, mass production treatments (usually for circulating collections) and single-item treatment (usually for special collections materials).

1. Managing Time

What are the top three responsibilities/duties of your position, as based on time spent at each activity?

What are the top three responsibilities you wish your job entailed?

What percentage of your time (approximately) is spent on administrative duties?

What percentage of your time (approximately) is spent at the bench?

Do you feel you have enough time to complete single-item treatments?

What is the most difficult aspect of organizing your time?

2. Supervising Others

Do you supervise permanent staff?   Y   N

If so, how many permanent staff members (or equivalent) do you have in your lab?

Do you have other workers (students, volunteers) in the lab?   Y   N

If so, how many (or equivalent) do you have in the lab?

Who does the following activities in your lab:
  Monitoring and ordering supplies?

	Conservator	Staff Assistant	Someone else	Not done

  Maintaining laboratory equipment?

	Conservator	Staff Assistant	Someone else	Not done

Keeping track of monthly (or periodic) treatment statistics?			
Conservator	Staff Assistant	Someone else	Not done
Compiling yearly ARL statistics?			
Conservator	Staff Assistant	Someone else	Not done
Treating circulating collections material?			
Conservator	Staff Assistant	Someone else	Not done
Training lab workers in circulating collections treatment?			
Conservator	Staff Assistant	Someone else	Not done
Supervising lab workers in circulating collections treatment?			
Conservator	Staff Assistant	Someone else	Not done
Treating special collections material?			
Conservator	Staff Assistant	Someone else	Not done
Training lab workers in special collections treatment?			
Conservator	Staff Assistant	Someone else	Not done
Supervising lab workers in special collections treatment?			
Conservator	Staff Assistant	Someone else	Not done
Maintaining quality control for finished circulating collections work?			
Conservator	Staff Assistant	Someone else	Not done
Maintaining quality control for finished special collections work?			
Conservator	Staff Assistant	Someone else	Not done

3. Training

Did you attend a graduate program in conservation?

Y   N

If so, which one?

Please list additional professional training (apprenticeship, internship, etc.):_____
_____
_____

My training prior to becoming a conservation professional taught me what I needed to know to be an effective hybrid library and archives conservator.

Strongly Agree   Agree   Neutral   Disagree   Strongly Disagree

Thank you for participating in this survey. If you have any additional comments, please list them below.
_____
_____
_____

Zines and the Library

Richard A. Stoddart and Teresa Kiser

Zines, loosely defined as self-published magazines, provide a cultural insight to the time in which they are published, making them a genre that libraries may want to consider collecting. Due to their ephemeral nature, however, they create collecting, cataloging, and preserving challenges to libraries. Few libraries across the country have met these challenges and maintain zine collections. Although no two libraries met the challenges in the same way, their unique approaches to zine collections may inspire other librarians to investigate the appropriateness and feasibility of zine collections.

An obvious facet of culture is contained in a society's language. Language is an agent that unifies, strengthens, and acculturates the members of a culture. Written language is an integral part of this process. A library is, at its most basic, a collection of culture in written form. Libraries accumulate the written language and serve as an access point to understanding culture through the written word. At the very least, a library's collection of the written word provides a historical "document" from which a cultural understanding can be derived.

Today, the library's underlying mission of cultural preservation is infinitely more complex than in the past. The computer age has made writing easier and the written word more accessible than ever. This has led to an explosion of information available both in traditional (print) and nontraditional (electronic) modes, making collection development within the library a complex and time-consuming task. Each new addition to a library adds a tile to the mosaic of cultural artifacts the library offers. No library can contain every piece of information ever produced; therefore, no library can provide a complete picture of any culture at any point in time. Print zines are one of the most direct links to the viewpoints and artistic endeavors, and therefore the understandings, of individual members of a society. As such, zines are a potent cultural tool and should be considered a worthy addition to libraries.

What Is a Zine?

The origin of zines is murky and varies depending on who is asked or, more importantly, what an individual personally considers a zine. Benjamin Franklin can be considered a zine maker according to R. Seth Friedman, a former publisher of the definitive zine review publication *Factsheet Five*. According to Friedman, "[Benjamin Franklin] published his own thoughts using his own printing press. It wasn't the magazine business. He did it all on his own."[1]

Historians generally trace the origin of zines to the science fiction fan club culture of the 1930s and 1940s. The term "zine" is a derivative of "fanzines," which were the fan magazines published by fan clubs of that era. *Comet*, a science fiction/fantasy fanzine, is often cited as the first publication of this type.[2]

Zines are tricky to define. The modern zine bears little resemblance to its cousin, the fanzine. There are many kinds of zines in many sizes. Today's zine is a product of the current technological environment. A zine may be a few sheets of paper reproduced at Kinko's in a quantity from ten to a hundred, collated by

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hand, and distributed by leaving them in bars to be discovered. A good example of this low-tech approach is the personal zine, *Spaghetti Dinner and Dancing*.[3] (Zine publishers and, when available, addresses and Web sites are cited in the references section at the end of this paper.)

A zine also may be a seventy-five page newsprint booklet produced in a quantity of two thousand and printed by a small press at the zinester's (a zine's editor) expense. Easy and cheap access to photocopiers, word processors, and desktop publishing allows zinesters to create, print, and mail one hundred copies of a zine for as little as $75.[4] This type of zine is generally distributed through the mail (at the zinester's expense) to friends, independent record companies, and like-minded individuals. Of course, zinesters value in-kind trades for their publications. Like-minded zine recipients are expected to send copies of their own zines, new recordings of their bands, or any other item they produce. *Shat Upon,* published by Andy Smetanka, is an example of this sort of zine.[5] It has gone a step further with the barter system and given advertising space to local merchants in exchange for their wares. Such wares have included pitchers of beer from local bars, loaves of bread from the local bakery, and records from the local record store.

There are types of zines that are more mainstream. A prime example is *Maximum RocknRoll* (*MRR*).[6] This punk music zine can be considered a regular magazine by some standards. It is printed monthly, available through major retailers such as Books-a-Million and Borders, contains more than one hundred pages, and accepts paid advertising. However, *MRR* defines itself as a zine. Historically, *MRR* is the model to which most music zines aspire. Its "rant columns," band interviews, and music reviews (in that order) have become the standard format of music zines throughout the world.

Zines runs the gamut from very small to very large. There are numerous other differences between zines. Zinesters can charge a few dollars to cover expenses or charge nothing at all. Topics are diverse, including music, poetry, stories, politics, and travelogues. The physical size can vary from wallet sized to newspaper length to anywhere between. Almost any print material independently created and distributed can be classified as a zine. While some zines are published as a type of "fan magazine," others are published as an outlet for scathing criticisms. Zines are the unfiltered voice of the common person. Print zines are not bound to editors or publishers.

Some zines readily disregard copyright laws.[7] Zinesters sometimes cut and paste relevant articles from other publications and include them in their own to reflect a particular point of view or mission. Sometimes the goal of getting their information to other like-minded individuals leads them to infringe on copyright laws. Additionally, since the goal of zine authors is to disseminate their thoughts and ideas to the widest audience as cost effectively as possible, the duplication of their work by others is not discouraged as long as it is not reproduced for commercial purposes.[8]

Zines are eccentric little publications that are expansive in their format and content. It is extremely difficult to put a finite definition on a zine. A better way to grasp what defines the zine is to consider the attitudes and purposes behind its creation. A zine is usually created as a means of sharing an unusual perspective and providing information that would be difficult to obtain from mainstream media, and is produced in limited quantities using low-tech means. A zine is not published for monetary gain.[9]

One of the most important tenants regarding modern zines is a do-it-yourself (DIY) attitude. DIY is one of the hallmark qualities of zines. The DIY attitude is often associated with the punk rock subculture: if a punk band wants to put out a record, to tour, or to play a show, the plan of action is (to borrow a phrase from Nike) "just do it." Adherents to the DIY philosophy put their money and sweat into a project, whether it is a band or a zine, to produce and participate in something they love.

This attitude is heavily ingrained in the zine subculture. If zinesters want to write about something, they write about it. Erik Bluhm, the producer of the California-centric zine *Great God Pan,* produced a zine that had a large press run, hard cover, and a generous distribution.[10] *Great God Pan* was therefore not cheap to produce, and Bluhm certainly did not make money off the project. However, his desire to publish and be read outweighed any financial restrictions.

Zines are a written product of the human need for self-expression. Beyond that, zines are hard to define. Their ephemeral nature makes it difficult to pinpoint a clear definition, yet it is possible to grasp the concept even though the specifics can sometimes be vague.

The Value of Zines

Why are zines important? Why should a library care about them? Three aspects of zines speak to their importance. First, they provide an alternative point of view. Some of these points of view are quite passionate. If a person is willing to spend the time, money, and effort to produce and distribute a zine, then they must have something they think is worth saying, no matter how obscure. For example, *Dishwasher,* by Dishwasher Pete, is an ode to the restaurant dishwasher.[11] Pete's goal is to wash dishes professionally in all fifty states and documents that quest from the point of view of a dishwasher. Who would have thought someone would take the time to write about something as unique as this?

Secondly, zines are important because they embrace individual expression. Zines usually are not filtered

Figure 1. *Cometbus* is an example of the artisitc qualities of zine cover art.

through an editor, much less an editorial board. When a zine is made available to the world, it can be thought of as a direct link to an individual's opinion, personality, or interpretation of the world. In addition, zines can be artistic. Many zines contain short stories, poetry, and art. The next Charles Bukowski, Allen Ginsberg, or Jean-Michel Basquiat may now be publishing in zines. The layout of zines can be dynamic, often taking on collage forms. These layouts can be hectic and sometimes beautiful in a creative sense. The covers of the zine *Cometbus,* for example, are quite artistic, all the more striking since they are created in most cases by manipulating a photocopy machine for effect (see figure 1).[12] Figure 2 presents a sampling of other zine covers.

Zines provide insight into today's modern popular culture—a third reason for libraries to collect zines. They offer a direct and unfiltered view of an individual's interpretation of and participation in the culture that surrounds him or her. The zine presents a first-person attempt to decipher and decode the world. Laila Miletic-Vejzovic, the rare books and special collections librarian at Washington State University sums it up by stating, "Zines are an important part of popular culture because they reflect the attitudes and values of the masses."[13]

Kathryn DeGraff of the DePaul University Libraries in Chicago believes historians will lose out on an important resource if zines are not collected. She has said, "Unfortunately, the telephone and e-mail are replacing letters as the principal form of communication, so a lot of history is disappearing. If we don't preserve zines, historians and other researchers are going to have to write about our era from secondary sources."[14]

Whether to preserve an alternative point of view, celebrate individual expression, or provide a written document of our accelerated culture, zines can be a worthwhile and important addition to many libraries' collections.

Not many mainstream libraries are collecting zines. Many alternative venues are currently filling this void. In many cases, they are simply a back room in an independent bookstore or magazine shop. One prominent independent zine library is the Independent Publishing Resource Center (IPRC) located in Portland, Oregon.[15] This non-profit facil-

ity has an online-cataloged library of 3,500 titles, plus publishing facilities and workshops for zinesters. The IPRC, funded through grants and donations, is a great resource for zine publishers, scholars, and researchers and serves as an example to other like-minded institutions.

Libraries and Zines: Hurdles and Hoops

Due to the ephemeral nature of zines, libraries face a real challenge if they choose to include them in their collection; few have risen to that challenge. The authors conducted an informal e-mail survey of twenty libraries that house zine collections. Responses from fourteen respondents offer some insight into the obstacles libraries face in collecting zines. The variety of answers received in response to questions about collecting, cataloging, and preserving issues were most interesting.

Collecting

If a library is to have a zine collection, the first hurdle is to obtain the zines. With the ephemeral nature of zines, where do libraries start? Some university zine collections began as a large donation from a zine collector. Approximately one thousand zines were donated to the Minneapolis Community and Technical College Library by Chris Dodge, a librarian at *Utne* magazine and former editor of the Minnesota Library Association's *Social Responsibility Round Table Newsletter,* which reviews zines.[16] In 1991, the New York State Library accepted the zine collection of Mike Gunderloy, the founder of the zine review publication *Factsheet Five*. His collection totaled approximately ten thousand zines.[17] The Sallie Bingham Center for Women's History and Culture at Duke University received its core zine collection from artist and zinester Sarah Dyer in 2001.[18] Darby Romeo, who was associated with the now defunct zine, *Ben Is Dead,* donated her collection to the University of California–Los Angeles Arts Library.[19]

Zines are most often acquired through donations of collections, subscribing to titles through independent distributors, or by simply writing to the creator of a zine and requesting a copy. Another more obvious collection strategy is for a library to pick up copies found at distribution points such as independent bookstores, record shops, or a local "alternative culture" hangout. Many zines are free and zinesters are, in most cases, more than happy to provide back issues.[20] An extensive alphabetical listing of zine publications with zinester contact information for requesting zine issues or information can be found on the Web site for Sleazefest.[21]

The Ray and Pat Browne Library for Popular Culture Studies at Bowling Green State University (Bowling Green,

Ohio), the Zine Archives and Publishing Project at the Richard Hugo House (Seattle, Washington), the Special Collections and Archives Department of DePaul University Library (Chicago), and the Special Collections Division of Michigan State University (East Lansing) are a sampling of the libraries that depend on donations as their main source of zines.[22] Donations come through solicitation in review zines such as *Zine World: A Reader's Guide to the Underground Press* and *Broken Pencil,* and by word of mouth.[23]

Many libraries' zine collections specialize in one or more forms of zine literature, such as women's studies or protest literature, therefore limiting the donations they accept. The Labadie Collection at the University of Michigan, for example, specializes in protest literature, but accepts any zine with "entertainment value."[24] The Sallie Bingham Center for Women's History and Culture housed at Duke University only accepts "donations of zines by women and girls," while the University of Buffalo will only accept zines that are at least fifty percent poetry.[25]

The Mansfield Library at the University of Montana in Missoula is an active collector of all types of zines. According to Christopher Mullin, the special collections librarian, the library currently has about seventeen-and-a-half running feet of shelf space, representing more than five hundred titles of zines.[26] The zine collection is based strictly on donations, no money is designated for the purchase of zines, and still the collection remains active. Mullin estimates the library receives several hundred zine issues a year, keeping only one copy of each zine issue in the collection. To keep the collection active, the library periodically puts out a call on the newsgroup alt.zines for more donations, which has resulted in the library being added to several Web lists of zine repositories, such as "The Zine & E-zine Resource Guide" and "Infoshops & Zine Libraries."[27]

Very few libraries subscribe to zines in addition to accepting donations. The Salt Lake City Public Library and the University of Buffalo are two exceptions.[28]

Cataloging

After obtaining zines, the next challenge for most libraries is cataloging. Should zines be categorized as alternative press, underground press, or small press publications; little magazines; "vanity press" materials; or something else altogether? Are zines considered serials? Their often erratic publication patterns (they are often unnumbered and may appear months apart) make handling them as a traditional serial problematic. Should they be included in the main library catalog or cataloged separately as part of an archive or a special collection? These are all questions that a library will have to consider regarding its zine collection.

Figure 2. Zines come in various sizes, each with its own unique cover art.

Zines present unique challenges due to qualities inherent to the genre itself. Titles often change on the whim of their creators; some zines die without warning. For the most part, zines are rarely published in a consistent manner. Since they are self-published, their publishing schedules are uniquely bound to the financial stability of their creators. They generally contain no dates or identifying marks such as ISSNs (International Standard Serial Numbers). Zinesters do not make it easy for the librarian.

Cataloging practices vary from collection to collection. The Ray and Pat Browne Library for Popular Culture Studies at Bowling Green State University does not catalog zines.[29] Minneapolis Community and Technical College Library maintains an in-house databases using commercial software.[30] The University of Buffalo treats zines "the same as any other periodical."[31]

The Mansfield Library at the University of Montana, Missoula, is one library that does not catalog zines.[32] Instead, folders are set up and titled for each zine publication, and zine issues are placed in the appropriate folder. The folders are arranged alphabetically by title and placed in pamphlet boxes on the shelf. When a new issue of a previously held zine arrives at the library, it is simply added to the appropriate folder with no additional processing. There is no attempt to organize the zine collection beyond the folder level. A folder may contain one issue of a zine or fifty issues. If a patron wants to know what is in a folder, he or she has to examine it physically. Title lists of the collection are made available at the library's reference desk and in the Archives/Special Collections reading room. The zines may be viewed within the Special Collections reading room only.

The Minneapolis Community and Technical College (MCTC) Library catalogs zines using Microsoft Access and

provide access points by title, keyword, author, and subject.[33] According to Thomas Eland, librarian/instructor at MCTC, plans are underway to design a Web-based catalog interface to simplify the cataloging process. MCTC Library is not the only library that has created an in-house database using Microsoft Access. The Zine Archives and Publishing Project at the Richard Hugo House also uses Microsoft Access as does the Salt Lake City Public Library, although the latter does not make its database available to the public at this time.[34]

At the New York State Library, approximately four thousand zines are cataloged.[35] However, this does not represent the entire collection of ten to twenty thousand titles. Billie Aul was, at the time of the Mike Gunderloy zine archive donation, the reference librarian in the Manuscripts and Special Collections Section of the New York State Library. Her plan for cataloging at that time was to provide a brief record entry (title, holdings, subjects from a forty-entry thesaurus, and sometimes a short description) to enable title and subject keyword access for each zine title.[36] With some ten thousand titles to be processed, Aul estimated the project would take from fifteen to twenty years. Unfortunately, due to system problems and her eventual transfer to another department, this project resulted only in the approximately four thousand records that currently exist in the catalog; there is little hope that the project will be resurrected. In retrospect, Aul believes she probably should have simply used the finding-aid approach of maintaining an alphabetical listing of the titles.[37]

Other libraries catalog zines as they would archives, at the collection level rather than at the title or item level. One example of this approach is found in the Rare Book, Manuscript, and Special Collections Library at Duke University. Amy Leigh Hagardorn, archivist at the library, states that they have developed an in-house database that provides access by title, subject, and author to aid researchers.[38]

The authors' informal survey of various libraries and zine repositories suggests that no standard approach exists for cataloging zines. (See the appendix for survey questions.) Each library has developed its own system to meet its local needs and available resources.

Access and Patrons

Regardless of how zines are cataloged in the collection, the main objective is to make them available to patrons. Most zine collections are for in-library use only, maintained in closed stacks or the reference area. The few exceptions found were the Independent Publishing Resource Center, which allows patrons to check out ten zines at a time, and the Salt Lake City Public Library, which maintains small circulating collections at the main library and its five branches.[39]

Salt Lake City Public Library believes its zine collection has brought in "a whole new group of patrons that haven't been to the library before."[40] Collections in many of the university libraries that responded to the survey are used mostly by researchers and scholars. Thomas Eland uses the zines as examples in a Minneapolis Community and Technical College class he teaches titled "Alternative Knowledge: How Radical Ideas Are Communicated in Society."[41] According to Amy Leigh Hagradorn, archivist at the Sallie Bingham Center for Women's History and Culture at Duke University, "researchers from all over the country and abroad" use the library's zine collection, and users "range from students in first year writing courses at Duke, to faculty in a variety of disciplines."[42] Paul Mercer, senior librarian at the New York State Library, identifies collection users as "zinesters and would-be zinesters looking for inspiration, curiosity seekers, and serious scholars of popular culture, literary, political or art history."[43] On the other end of the spectrum, Travis Fristoe, a librarian at Alachua County Library District and volunteer zine librarian at the Civic Media Center, a zine repository in Gainesville, Florida, finds that most of his patrons are local foot traffic, although some patrons who visit the collection do have an interest in alternative media.[44] Asked how zines are used by these patrons, Fristoe's tongue-in-cheek reply was, "Ideally, they're read, memorized, and then the reader is fired up to lead a better life and fight for a better world."[45] However, he admits that "typically someone will stare at the cover for a few seconds, thumb the pages, and put it back on the shelf."[46]

Shelving the Collection

How do libraries shelve or organize these zines for access? Again, responses to this question varied. Some alphabetize by title only while others organize their collections alphabetically by title within a category (such as poetry, war, politics, music). Since zines are usually small and hard to shelve individually, some libraries use archival folders within archival boxes, while others simply use magazine boxes. Others prefer using a filing cabinet system, with a hanging folder for each zine title.

Preservation

Asked about plans for long-term preservation, librarians and collection managers cited their use of archival folders and boxes in climate controlled areas. Some have long-term plans for digitizing their collections. Others have no plans for preservation, stating that while they treat their collection with care and respectful handling, when and if the collection begins to deteriorate, they will repair as much as possible and otherwise discard as needed.

Zine Information on the Web

Even though zines are print resources for underground writing, information about zines can be gathered from the Internet. Simply searching for "zines" or "zine reviews" in Google or other online search engines will result in a listing of Web sites containing reviews, content, and other information about zines. For example, the Zine Guide Web site contains reviews and information on zines.[47] Zine World: A Reader's Guide to the Underground Press, another Web site, provides a good overview of zine culture, sample reviews, and suggestions on how to obtain zines.[48] The Web site Zine Book is a source of information on "readings from the fringe."[49] Another good online resource for alternative publications is the Web site The Street Librarian, maintained by Chris Dodge.[50] Some zines have a Web site that gives information about the zine and how to obtain it. *Roctober* and *Maximum RocknRoll,* for example, maintain their own Web sites.[51] It is important not to confuse print zines with e-zines. E-zines are electronic magazines that differ from print zines in their content, manner of publication, and purpose. Many Internet sources address zine culture; one must simply conduct appropriate Internet searches to locate them.

Most publications and Web sites that review zines provide addresses for purchasing zines directly from the publisher. Many alternative online music stores, such as Insound.com, contain "zinestands" where zines can be purchased online. More mainstream zines, such as *Punk Planet* or *Giant Robot*, are available from traditional online outlets such as Amazon.com or Booksamillion.com.[52]

Conclusion

The world of information resources is not static. The flow of information is constantly changing in both content and form. Libraries must be flexible enough to respond to this ever changing influx. The library's inherent mandate is to provide access to information in all its forms. And while libraries may be patting themselves on the back for successfully integrating electronic media into their collections, their acquisition of print materials is in most cases not all encompassing. Print zines are all too commonly an oversight.

Many scholars and historians understand that print zines are important tools for researching the connection between an individual and the culture of which he or she is a part. The value of zines should not be discredited because of the format's often primitive print style and unedited content. Since libraries are archives of written culture, they should acknowledge the significance of zines as cultural documents. A library's purpose is not to act as arbiter of culture, deciding what it is or is not. A library is an access point

to the information in a culture. As such, a library's holdings should encompass a wide range of materials to provide as accurate a picture of a cultural time period as possible. The print zine is well within such a range of materials.

Zines are proliferating, not fading away. In 1995, an estimated twenty to fifty thousand zines were published worldwide.[53] Estimating the number of zines being published today is impossible; they start and stop publication constantly, and the widespread use of computers fosters their proliferation. Most libraries at some point will receive a piece of zine literature. At that time, a library must weigh whether the zine is a valuable addition to its collection. Is it appropriate to the library's mission and within the library's collecting scope?

Information is a perishable resource. It can be forgotten, lost, deleted, or destroyed. Cultural identity becomes less defined with each piece of information that is lost. Libraries should consider this when deciding whether to collect zines.

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Appendix
Zine E-mail Survey Questions

I am in the process of completing an article about zines. In my research I found that (insert name of institution here) maintains a collection of zines. Could you please take a few minutes and answer the following questions in relation to your zine collection.

1. How did the zine collection begin? For example, donations, soliciting zinesters, etc.

2. How do you catalogue zines?

3. How do you maintain them on the shelves?

4. Can they be checked out?

5. How do you plan to preserve them over time?

6. Who are the users of the zines? How are they used?

7. Do you share your zines with other libraries?

Thank you for taking the time to answer these questions. Feel free to share any additional information regarding your collection you feel will be of interest to other librarians.

Chronological Terms and Period Subdivisions in LCSH, RAMEAU, and RSWK

Development of an Integrative Model for Time Retrieval across Various Online Catalogs

Jutta Frommeyer

After a fundamental examination of the phenomenon of time, this paper presents the history, authority, and structure of period subdivisions and chronological terms in the three subject heading languages LCSH, RAMEAU, and RSWK. Their usefulness in online searching is demonstrated using the online catalogs of the Library of Congress, the Bibliothèque nationale de France, and the Deutsche Bibliothek and is compared to the search options in selected digital encyclopedias (Encyclopaedia Britannica, Encarta, Brockhaus-Enzyklopädie). *The author develops a model for common time retrieval across all three online catalogs, outlines the conditions for that model (time period code, chronological code, and chronology authority file), and proposes a search interface.*

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In the era of globalization and internationalization, researchers are often required to access library materials from all over the world and beyond their native cultural understanding. Technically, this is possible through the Internet, which facilitates simultaneous searching in any number of online catalogs. However, varying languages and different cataloging rules make it hard for the user to conduct effective searches.

This paper focuses on subject searching. The term "subject" includes all topical aspects as well as all material about an author or about a specific work or publication. Chronological terms—that is, epoch headings, historiographic terms, terms with chronological restrictions (such as names of persons with dates of birth and death), and time codifications (years, dates)—are analyzed from both the cataloging and the retrieval standpoints. Furthermore, looking beyond the library field, chronological access to digital encyclopedias is explored. Finally, a new time retrieval model for linked multinational online public access catalogs (OPACs) is proposed.

The Problem

Librarians and documentalists have always considered the time aspect in subject cataloging an important element of subject analysis. Langridge attributes different values to the concept of "time" depending on the discipline.[1] While this category plays a comparatively minor role in science, technology, and social studies, it is more important and in fact constitutes the central category in history.

The ability to limit subject access chronologically, whether by subject headings or by classification, is a reasonable premise. Cochrane states, "In the online catalog, how can we limit a subject search on the basis of date or chronological period?"[2] The search using chronological terms in online catalogs is a challenge, one that has been documented in studies. Two of the studies are described here.

A study by Frost has examined a sample of records extracted from the University of Michigan Library's shelflist to determine the degree of similarity between subject heading terms and title terms.[3] All of the 2,268 sample records included the Library of Congress classification number, enabling a comparison of the similarities between various disciplines. Frost found that an exact match (between entire subject heading and title terms) occurred in only 4 percent of the history materials, compared to 23 percent in the sciences and technology.[4]

Another study, by Bates, Wilde, and Siegfried, analyzed the search terminology used by humanities scholars in DIALOG database retrieval.[5] In a two-year period (1989 to 1990), 165 natural language retrievals were conducted using 1,068 search terms from various categories. The occurrence of chronological terms totaled 16 percent in all natural language search statements that contained more than one type of term. Chronological terms are of three types: "date" or "date range," "period," and "time modifier."[6] These results supported findings in the authors' more detailed research project with the National Science Foundation in 1988 that showed that chronological terms appeared in 5 percent of search statements in the social sciences and not at all in the natural sciences.[7] Considering these numbers, the authors concluded "that searching in the humanities may be inherently more complex than in the sciences."[8]

The Phenomenon of Time

The *New Encyclopaedia Britannica* defines time as "a measured or measurable period, a continuum that lacks spatial dimensions. . . . It cannot be given any simple, illuminating definition. . . . Time is held to be non-ending, non-beginning, linear, and continuous."[9]

According to Brandt, time calculations and calendars originate not only from the observation of astronomical events that can be seen in the movement of celestial bodies. They also are based on regularly recurring changes in light, climate, and other environmental conditions on the earth that are linked to those astronomical events.[10] The author further states "that from the beginning, a calendar could not and is not only to be understood as a purely mathematically astronomical problem, but that each calendar system is an extremely complex entity composed of astronomical, environmental, ritual and practical elements and needs, and therefore: the *expression of a culture*."[11]

This relationship of time's perception and measurement to environmental and cultural conditions is obvious in subject cataloging, too. On the one hand, calendars vary among different religions and cultures. In the predominantly Christian Western Europe and the United States, for example, the counting of years begins with the birth of Jesus Christ, whereas in many Middle Eastern countries, the beginning date is the Mohammed's flight from Mecca to Medina. However, these different time schemes can be converted from one into the other. Compared to this, chronological terms are even more closely attached to their culture of origin because of their linguistic manifestation. This becomes evident in the term "contemporary history." Among German-speakers, "Zeitgeschichte" is generally defined as the historical period directly preceding the present.[12] In France, "histoire contemporaine" begins with the French Revolution in 1789, and in Great Britain, "contemporary history" begins with the parliamentary reform of 1932.[13]

Similar complications are raised by epoch or period terminology. Epochs are time periods set up to divide the overall course of history into sensible, self-contained units. Case offers the following explanation: "Periods, then, are not merely convenient collections of years. They are thematic categories of time that require substantiation by the historian."[14] Furthermore, periodization occurs not only in political history, but also in other disciplines as well. "Periodization is pedagogically useful in managing unwieldy masses of factual data. It is interesting to note that periodization also is used by other disciplines. Often, periodization serves to demarcate recognizable contours of given phenomena. Art history and musicology utilize periodization to examine stylistic changes in time and space. . . . Specific fields in history (i.e., economic history . . .) and technology utilize periodization to grasp specific 'revolutions' in fields of human activity. Periodization can be extremely instructive when applied to highly demarcated fields (i.e., histories of education, biology, or chemistry)."[15]

Cataloging

The principle of chronological order is important in every systematic catalog. For Roloff, it goes beyond its formal

function as it simultaneously creates a topical connection; for example, it can combine works of literature into a literary style.[16] Roloff distinguishes two classification principles relating to time:

1. the chronologically topical order of entries according to the time period of the document contents (in subject cataloging),
2. the chronologically bibliographic order of entries according to their year of publication (in descriptive cataloging).[17]

Both principles will be described in detail in the following section.

Descriptive Cataloging of the Time Aspect

The most important element in descriptive cataloging is the publication year. Furthermore, the year of a publication's first edition, reprint, or copyright or, for an exhibition catalog, the date of the exhibition also form part of descriptive cataloging. The publication year does not always indicate the original date of the content. This is especially true in the case of a reprint, licensed edition, impression, or translation, which requires reference to the original year of publication.

The publication date also has to appear in subject cataloging, as it reflects the final content editing date. Richter gives the following example: "The publication date provides a chronological subheading. Thus you would have the index entries 'Droit civil, 1920,' 'Droit civil, 1984.' . . . For works that present a topic in a historical perspective, it is always possible to indicate two dates that limit the subject's development, even if these dates are not made explicit by the author."[18] The date is a vital and relevant element in collections with exclusively scientific documents whose content is not framed within any historical context, even if dates are rarely expressed in the subject data.

The publication year is important for works of literature and art that are representative of a certain literary or artistic style, regardless of the date in which the story is set, which may be completely different. "Novels, for example, are an important source for social history in particular . . . "[19]

Subject Cataloging of the Time Aspect

In the catalogs of large libraries, the possibility of limiting a topic using time elements must be taken into consideration. According to Hahn, "The time aspect is always necessary for historical objects—in the broadest sense—as well as for historical descriptions. In the subject catalog, the cataloging of time relevant details includes time periods (years) of events or processes, of political or legislative measures,

time spans under review or reporting dates, investigation periods or simply the information status of facts."[20]

In order to take a deeper look into the various cataloging rules in use, three subject heading languages (SHLs) are considered. In this paper, they and the abbreviations used for them hereafter refer to the subject cataloging system in its entirety of code, authority file(s), and other resources. They are:

1. Library of Congress Subject Headings (LCSH)
2. Répertoire d'Autorité Matière Encyclopédique et Alphabétique Unifié (RAMEAU)
3. Regeln für den Schlagwortkatalog (RSWK) and all examples of RSWK[21]

These SHLs were selected because of the degree of their distribution; all three subject languages above are in use beyond their countries of origin (United States, France, Germany). A survey conducted in the mid-nineties under the auspices of the International Federation of Library Associations and Institutions (IFLA) shows the international importance of these SHLs. LCSH is used in twenty-four national libraries. RAMEAU is increasingly in use in the francophone countries of Northern Africa and the Middle East, such as Tunisia, Algeria, and Lebanon. RSWK spread out from Germany to Austria, Switzerland, and the German-speaking regions of Italy.[22]

Another criteria is the difference in languages used. This allows cultural divergences and traditions to be tracked in the indexing of time aspect across various language areas—the anglophone, francophone, and the German-speaking regions.

The oldest of the three SHLs is LCSH. When the Library of Congress (LC) began to set up a dictionary catalog in 1898, it went back to Cutter's set of rules and regulations (first published in 1876 as *Rules for a Printed Dictionary Catalogue*).[23] However, LC did not declare the rules obligatory and catalogers distanced themselves more and more from Cutter's code. Responding to the spreading inconsistency in subject cataloging, a list of subject headings was created at LC primarily for internal use. This list was first published in 1914 and its use spread quickly; it received its current name (LCSH) in 1975.[24] LC resisted repeated demands for creating a formal subject cataloging code. Instead, it offered various tools for assigning and creating subject headings. The LC *Subject Cataloging Manual: Subject Headings* (SCM), published in 1984, has been an important resource, although even today it does not constitute a formal code composed down to the last detail like Anglo-American Cataloguing Rules.[25] It is solely a collection of LC subject cataloging practices.

The French list of subject headings RAMEAU is based on LCSH. At the end of the 1970s, the Bibliothèque

nationale de France decided to establish its own subject authority file. The Bibliothèque national de France based it on the original LCSH and the *Répertoire de vedettes-matière* (RVM) from Université Laval in Québec, Canada, a French version of the LCSH that had already proved its practicability in the Bibliothèque publique d'information in Paris.[26] The Bibliothèque nationale de France neither translated the LCSH literally, nor did it just adapt the RVM. It instead put together a controlled vocabulary that fit its own conditions. In 1982, it published the *Liste de vedettes-matières de la Bibliothèque nationale*.[27] At the insistence of the ministry in charge of academic libraries in France, a national subject authority file for academic libraries, called RAMEAU, was created. It combines three authority files: RVM, the subject heading lists of the Bibliothèque nationale de France, and the Bibliothèque publique d'information. Today, RAMEAU is also used in French public libraries. The accompanying *Guide d'indexation* with its rules for creating and implementing subject headings is based on a translation of the SCM.[28]

The history of the French subject authority file shows that the basic principles in RAMEAU and LCSH, such as the very strong pre-coordination, are identical. Many subject headings are composed of one or more terms and a main heading with one or more subdivisions as fixed connections listed in the authority file. Additionally, free-floating subdivisions ("subdivisions affranchies") for all topics and special subdivisions ("subdivisions spécifiques") for specific topics exist both in the SCM and in the *Guide d'indexation*. However, the cataloging practices for subdivisions have diverged. The thirty-five lists of free-floating subdivisions in the SCM were reduced in the 1999 edition of *Guide d'indexation*; today even practices concerning period subdivisions ("subdivisions chronologiques") vary.

Strictly speaking, free-floating subdivisions for the time aspect that could be assigned to main headings of all topics do not exist in LCSH. The most applicable rule H 620.3.d provides the following period subdivisions:

> History—16th century
> History—17th century
> History—18th century
> History—19th century
> History—20th century.[29]

In contrast to LSCH, RAMEAU offers only one list, *Subdivisions d'emploi général (chronologiques),* providing approximately forty subdivisions. Apart from this, both SHLs contain specific period subdivisions that may be assigned only within a specific topic and consist of standardized time spans, subdivided according to relevant logic. Moreover, in both systems time periods can be expressed verbally in the term itself, for example, as an adjective qualifier.

In 1972, Lois Mai Chan specified six forms of period subdivisions in the LCSH that are used with main subject headings. These are:

1. inverted "noun, adjective" headings;
2. main subject headings with a subdivision in the form of a noun or phrase (without any dates), clearly denoting a chronological period or historical event;
3. main headings with a subdivision containing the name of a historical period or event followed by dates;
4. main headings with the name of the century as a subdivision;
5. main headings with a period subdivision created with the preposition "to" followed by a date; and
6. main headings (often with aspect subdivision) with dates only as period subdivision.[30]

The RSWK is a cooperative project of several German-speaking public and academic libraries. After a project to create a universal classification system for all libraries had failed at the end of the 1970s, plans arose for a joint subject indexing system. In contrast to efforts in the United States, emphasis was put on the development of a code, which resulted in the 1986 publication of the *Regeln für den Schlagwortkatalog*.[31] A slightly revised second edition followed in 1991, and a third edition containing major changes was released in 1998.[32] Collaterally, from the very beginning of the practical implementation, the Schlagwortnormdater (SWD) was created as an authority file. The editorial headquarters is situated in the Deutsche Bibliothek. Unlike LCSH and RAMEAU, which contain only subject headings, RSWK also includes personal name headings.

RSWK is a syntactic indexing system. Strings of controlled terms are set up according to the rules. However, hardly any pre-coordinations exist. The time aspect in RSWK is reflected mainly in so-called "Zeitschlagwörter" (chronological headings). These not only include the terms "Geschichte" and "Prognose," but also some compounds with "-geschichte," such as "Geistesgeschichte." All chronological and also some form headings can be extended by adding year numbers. Some headings for time periods (such as historical movements and eras) are not considered "Zeitschlagwörter," but topical headings. Some epoch headings have to be converted into the string form of "Geschichte + time span (in years)."

The time aspect is always expressed separately as an independent facet. It is freely assigned by the cataloger without regard to other headings in the string, so that it (sometimes together with another chronological heading) gives the correct time period of the document in year numbers. No fixed period subdivisions exist for specific subject areas as they do in LCSH and RAMEAU.

In all three SHLs examined, the time aspect occurs on three levels:

1. as the controlled term (subject and personal name heading): the term itself is a chronological heading or part of another heading expressing the chronological aspect (for example, birth and death dates within a personal name heading or epochs/styles as adjective elements)
2. in a string of controlled terms (in RSWK) or in the subject heading that exists as a separate element (period subdivision or time span in years or a chronological term or both)
3. in the authority file as a term implying a chronological concept, which is expressed in an equivalent string, in a broader/narrower term, or in a time period code

All three subject authority files are structured as a thesaurus that includes relationships and explanations, cross-references, designation, class numbers, and scope notes. The term "history" is used differently in all three SHLs:

- "History" in LCSH is used for the introduction of year numbers in some cases, but not at all in connection with historiographic terms.
- "Histoire" in RAMEAU is never used for the introduction of year numbers.
- "Geschichte" in RSWK is used for a complete history of a topic (historical point of view) and as introduction of time spans in years.

Retrieval
Searching in OPACs

Because of their use of the examined SHLs, the following online catalogs were investigated for their retrieval functions: the Library of Congress catalog for LCSH, the Bibliothèque nationale de France catalog for RAMEAU, and the Deutsche Bibliothek catalog for RSWK.

One of the basic prerequisites for conducting a successful search is that the time periods and dates associated with a document have been taken into consideration in subject cataloging. However, there is no standardized rule in these three subject heading systems guiding when or even if such elements are indexed at all. Existing guidelines often originate from the card catalog era. This is true for LCSH, too: "But in the online environment, any kind of direct search on dates in subject headings will be thwarted if period subdivisions are added only to subdivide large files. All those other cases where the period is applicable but has not been so indexed will be lost to the searcher."[33] The historian Bates also criticized this practice:

Even the 'Library of Congress Subject Headings,' which predates the development of modern thesaurus principles and which makes detailed provision for geographical, period, and form subdivisions, uses some period subdivisions only to subdivide extra-large files. . . . With such unpredictable application—that is, unpredictable for the searcher—it is impossible to make reliable use of these non-other-common subdivisions in online searching. Yet, clearly, for the humanities scholar, meaningful online searches can generally be carried out only through use of both non-other-common and other common terms, with the emphasis on the former.[34]

Here, Bates uses "common terms" for the following types of subjects: works or publications as subject, individuals, geographical name, date or period, discipline; "other common terms" include all other types of subject that are not common.

Today, digital technology and high storage capacity have made these kinds of restrictions obsolete. More time details could be taken into consideration during subject cataloging while, at the same time, the number of matches can be controlled by appropriate retrieval software techniques.

Distinguishing between *stated* time aspects expressed in words (subject headings and controlled terms) and *encoded,* indexed time details is very important for retrieval in provided subject data. All three SHLs deal differently with this issue, for example, with personal dates (see figure 1).

While LCSH and RAMEAU prefer stated time period descriptions, RSWK uses exact dates, years, and periods.

Epoch terms, such as "Middle Ages," are particularly difficult and also handled differently (see figure 2).

Currently, retrieval using years is based on character comparison. A match occurs only when the time span entered corresponds exactly to the string in the index (single date or year range). Furthermore, this kind of retrieval always provides more matches than needed because the number may occur in the subject entry but with a completely different meaning.

This subject access using the encoded time form has various advantages and disadvantages for the strongly pre-coordinated systems (LCSH and RAMEAU) as well as the post-coordinated systems (RSWK). Just the time period that the user enters as a search term will be found (for example, "1884–1920"). Smaller intervals within that period, on the other hand, like "1890–1910," or overlapping intervals, like "1900–1940," will not turn up. In LCSH and RAMEAU, the time span in standardized period subdivisions includes all smaller periods. The user has to know, though, that there is no automatic cross-reference to the correct period subdivision used for a time span that deviates from or is smaller than that of the document contents. This issue is demonstrated in two examples (see figure 3).

LCSH:
JFK, reckless youth
>Kennedy, John F. (John Fitzgerald), 1917–1963—Childhood and youth
>Presidents—United States—Biography
(example provided by Chan[35])

RAMEAU:
Vie de Picasso. - Vol. 1: 1881–1906 [The life of Picasso . . . 1881–1906]
>Picasso, Pablo (1881–1973) ** Enfance et jeunesse
(example from the Bibliothèque nationale de France Internet-accessible catalog)

RSWK:
Peter Handke : Jugend eines Schriftstellers / Peter Haslinger. - 1992 [Peter Handke: Youth of an Author]
>Handke, Peter ; Biographie 1942–1967
[Peter Handke is an Austrian author, born in 1942]
(example from the Deutsche Bibliothek Internet-accessible catalog)

Figure 1. Comparison of SHL treatment of personal dates

LCSH:
The Prayers of Saint Francis / compiled by W. Bader
>Catholic Church—Prayer-books and devotions—English prayers, medieval
(example from LC's Internet-accessible catalog)

Companion to Medieval and Renaissance Music / ed. by Tess Knighton and David Fallows
>Music—500–1400—History and criticism
>Music—15th century—History and criticism
>Music—16th century—History and criticism
(example provided by Chan[36])

RAMEAU:
La peinture du Moyen âge en Europe, 800–1200 [The painting in the Middle Ages]
>Peinture médiévale
(example taken from *Guide d'indexation* RAMEAU[37])

Fictions of Advice: The Literature and Politics of Counsel in Late Medieval England
>Secretum secretorum
>Littérature didactique anglaise ** Moyen âge ** Histoire et critique
>Écrivains anglais ** Moyen âge ** Pensée politique et sociale
>Éduction des princes
>Rois et souverains ** Dans la littérature
>Politique et littérature ** Grande-Bretagne ** Moyen âge
(example from the Bibliothèque nationale de France Internet-accessible catalog)

RSWK:
Theologie im Mittelalter [Theology in the Middle Ages]
>Deutschland ; Theologie ; Geschichte 750–1500
>Deutschland ; Frömmigkeit ; Geschichte 750–1500
(example from the Deutsche Bibliothek Internet-accessible catalog)

Lateinische Lyrik des Mittelalters / komm. von Paul Klopsch [Latin poetry in the middle ages]
>Latein ; Lyrik ; Geschichte 300–1300 ; Anthologie
>Spätantike ; Lyrik ; Latein ; Anthologie
>Mittelalter ; Lyrik ; Latein ; Anthologie
(example from the Deutsche Bibliothek Internet-accessible catalog)

Figure 2. Comparison of SHL treatment of epoch terms

In the RSWK, the title cannot be found with the descriptor "Weltkrieg <1939–1945>." LCSH is not able to recognize a search for the Sartre *War Diaries* book that contains only the time span "1939–1940."

When searching with verbal descriptions of time, the existence of different forms of subject headings (simple or phrase headings) must be considered. Chronological terms, for example, may appear in adjective form (in LCSH and RAMEAU) or as a single controlled term (in RSWK) like "Middle Ages/medieval." Moreover, narrower terms (such as battles within a war) are not automatically included in the query results. Their relationship to the main term may be shown in the authority files, but the scope and usage notes are intended more for the cataloger than for the catalog user. In any case, the search must be repeated with the new terms found in the subject authority file.

In addition to year number or chronological term entries, all three OPACs at LC, Bibliothèque national de France, and the Deutsche Bibliothek offer indirect access through the subject heading index. Knowledge of permutation rules is necessary. Many terms in a string are not allowed to be permutated or are pre-coordinated connections and encoded time details mostly appear at the end of the string (before the form subdivision). The time codifications are in chronologically ascending order when the preceding character string is the same. A chronological term existing as a separate term in a string or as an adjective part of a heading is not included in this chronological order (with some exceptions) and remains in alphabetical order.

To date, enabling searches for time details in stated or encoded form has not yet been accomplished to satisfaction, and this

LSCH:
War Diaries: November 1939–March 1940
>Sartre, Jean Paul, 1905– —Diaries
>Authors, French—20th century—Diaries
>World War, 1939–1945—Personal narratives, French
>World War, 1939–1945—France
(example from LC's *Subject Cataloging Manual*[38])

RSWK:
Als Freiwilliger zur Luftwaffe : ein junger Westfale überlebt den Zweiten
       Weltkrieg [Volunteering in the airforce : a young Westphalian
       survives the Second World War]
>Deutschland ; Soldat ; Geschichte 1941–1945 ; Erlebnisbericht
(example from the Deutsche Bibliothek Internet-accessible catalog)

Figure 3. Comparison of SHL treatment of smaller time periods

issue has not been paid adequate attention by librarians in the move from card catalogs to OPACs.

Searching in Digital Encyclopedias

The modern catalog user is accustomed to numerous possibilities for time searches offered in various databases. This will be demonstrated with the help of digital encyclopedias.

In addition to other reference resources, encyclopedias have to be consulted when creating subject headings in all three SHLs.[39] *Encyclopaedia Britannica, Encarta,* and *Brockhaus—Die Enzyklopädie* have been chosen for the analysis because of the high quality of their content and their distribution area.[40]

The graphic search interface in digital encyclopedias is immediately appealing, in comparison to the menu-based access in OPACs. Under various names—"timelines" (*Encyclopaedia Britannica*), "historama" (*Encarta*), or "Zeitleiste" (*Brockhaus*), they offer separate screen displays for accessing the database chronologically. The principle of a chronological overview of events in encyclopedias was first introduced in 1990 in *Compton's Multimedia Encyclopedia* on CD-ROM, which offered a "U.S. history timeline" from 1942 onwards in a graphically designed schedule.[41]

Apart from the graphical display of pictures and text elements in a time arrow or timeline, the encyclopedias in some cases offer a chronologically arranged article overview ("text view" in *Encyclopaedia Britannica*). The intervals vary among the chronological sequence, depending on the period or era covered. The user can jump directly to a certain year or move continuously back and forth within the timeline. Furthermore, the timeline function provides the user with the possibility of searching for only personal names, using time periods that include personal dates (*Encarta* and *Brockhaus*) through which a (rough) limitation by topic can

be set. The connection of a person to an art or literary genre is available only through hyperlinks in the text of the documents. The magnifying zoom function in *Encarta*, which allows the user to reduce or enlarge the time intervals, is particularly user friendly and supports a clear screen display.

All of these views of chronological data are limited to specific article selections within the encyclopedia. Dates set in the future are listed only in *Brockhaus*.

Allen summarizes the advantages of a timeline for information systems:

> *Inform:* The timeline can, of course, provide basic information about the relative order and dates of events.
>
> *Show Context:* Events can be compared across timelines.
>
> *Encapsulate:* Events may be included as part of larger events.
>
> *Link:* Links can show that events share attributes or a hypothesized causal relationship.[42]

The Retrieval Model

In contrast to card and book catalogs, online catalogs enable direct access to time period and date information in the subject field. The European card catalogs' classical division into alphabetical and systematic catalogs no longer exists for OPACs, as all details are combined on one screen. The linear search employed in the card catalog has been eliminated by changes in user behavior with the online catalog (for exmple, through the use of Boolean operations). Nevertheless, the issue of searching for the time aspect is not completely resolved.

The attractive retrieval of time information found in digital encyclopedias also should be implemented in OPACs. However, two sources in bibliographic databases must be distinguished:

1. the subject (and personal name) heading authority file that includes the time span expressed in controlled terms, and
2. the bibliographic record that contains the subject field with the document's contents.

Schulz created a new and, so far, exclusively theoretical approach in retrieval of time information for RSWK by adding the date or date range to each chronological term in the subject field of the bibliographic record.[43] Criticism followed immediately: "This contradicts decades of documentary indexing experience, though. Imagine taking every work by and about Bach, Handel, Mendelssohn, Schütz,

etc. and adding the dates of living and possibly 'Baroque / Music . . . 1600–1790' and the geographic details Weimar, Leipzig, Saxony, Germany. . . . If these details are stored once in an authority file, every repeated insertion in the individual works is redundant. However, indexing should contain information about the document and not produce redundancy."[44]

Another proposal of RSWK has not been put into practice, although it avoids redundancy. A chronological term in the string would be replaced with the encoded form only during retrieval if no precise time span (according to the document's content) were given in the bibliographic data. The code would automatically be caught in the authority file.

Both retrieval models would result in an enormous number of hits if all smaller intervals were automatically included. Their concepts are based only on RSWK cataloging practice and do not take different rules for assigning encoded or verbal forms in other SHLs into consideration. Because RSWK prefers year numbers, the search with the encoded form and the search with the stated form are not coequal to each other.

Presuppositions

The first step for developing a new time retrieval model in an international environment like the Internet is to ensure that both the stated and the encoded form of time expressions are treated equally. For the encoded form, the year numbers or dates always must be indexed in accordance with the Gregorian calendar to establish an international standard. Furthermore, because heterogenous regulations for chronological terms and period subdivisions in the SHLs must be included in the model, the ability to cross search in different bibliographic databases is vital.

The new time retrieval model requires three elements: a "time period code," a "chronological code," and a "chronology authority file (ChAF)." The third element, ChAF—especially for information systems in history—is the heart of the model.

Time Period Code

In order to store time codifications in the subject field of a bibliographic record as numbers and not as characters, they should be stored in a separate numeric field that this author calls the "time period code." Consequently, searches for a time span with larger, smaller, and equal operators would be possible whereas currently only a character comparison is possible. For example, *The Cubist Print* by Burr Wallen and Donna Stein (published in 1981 and dealing only with the period 1907–1914 of Cubism) would be given a time period code of 1907–1914.

RSWK has already envisioned such a field, called "Zeitcode," but it has not yet been put into practice in the

Deutsche Bibliothek online catalog: "The time period code is used for all subject areas, not only for political history and for timely extensive statements. . . . If the document contains several time spans, a time period code will be assigned for each of the time periods."[45.]

When re-indexing the existing records, section 418.2 of RSWK 3 recommends deriving the time period code (whenever possible) automatically from the subject field that exactly notes the time period of the document content in compliance with RSWK rules. For RAMEAU and LCSH, a time period code cannot be realized so precisely due to period subdivisions. However, an attempt can be made to extract the precise time span from titles and subtitles. Otherwise, year numbers of the period subdivisions can be transcribed into the time period code field. To enable a precise retrieval of time information in the future, a cutoff date for the beginning in standardization in cataloging should be set.

Chronological Code

The chronological code provides a time span valid for the chronological term in the authority record and must have the same structure as the time period code. Both codes should give an accurate account of an event's date to the day (such as a birthday or historic event) even when very few documents would be assigned a time period code with such an exact date (like diaries). Imprecise terms like "Middle Ages/medieval" have to be standardized, but may include various time periods depending on the cultural area, distinguished by a qualifier. Thus, a comparability of encoded and stated time forms would be guaranteed and a conversion of chronological terms would be possible. For example (from LCSH; BT = broader term, RT = related term, NT = narrower term):

> Cubism   (*May Subd Geog*)
>   BT   Aesthetics
>   ...
>   RT   Post-impressionism (Art)
>   NT   Decoration and ornament—Cubism
>   ...
> Chronological code: 1907–1920

The chronological code can be changed at any time, for example, when new insights require a change in the period's time range or an adaptation of birth and death dates. If the same chronological term in older literature is used for a different time span, it will be indicated with a qualifier in parantheses.

RSWK already has proposed a chronological code, unfortunately also called "Zeitcode" in the SWD without distinction to the time period code. So far, it has only been applied rudimentarily. It will be used for the following chronological terms:

- personal name headings
- historical geographic and ethnographic terms that no longer exist
- topical subject headings covering a limited time span
- historical events
- epoch headings
- corporate name headings, insofar as they no longer exist
- older languages
- works (uniform titles)[46]

Chronology Authority File

The name "chronology authority file" (ChAF) is composed of the words "authority file" and "chronology." Authority file was selected to be analogous with "name authority file." The word chronology means "any method used to order time and to place events in the sequence in which they occurred."[47]

The authority data record of a ChAF consists of three parts: chronological terms (including personal names), the appropriate chronological code, and an indicator for the authority file where the term is stored, such as the personal name heading from the LC name authority file in LCSH. The sequence of the authority data records corresponds to that of a timeline in the digital encyclopedias discussed above. It starts with the largest time span and advances to narrower intervals down to an event on a certain day. The type of heading also should be stated (p=personal name heading, u=uniform title, t=topical subject heading, g=geographic subject heading, and so on). Figure 4 offers a brief example demonstrating the internal structure of the ChAF.

All chronological terms are entered along with their chronological code—including phrase subject headings with "ancient" or "medieval," creating an interdisciplinary synopsis of the temporal relationship of these terms. Because this format would result in a huge number of authority records, it would create a challenge not so much for storage space, but for user display design. Therefore a subject area indicator for each chronological term should be employed for more efficient retrieval. This could be the (shortened) class number of an international universal classification. Unfortunately, not all subject authority files work with the same classification. Future development probably will move toward the Dewey Decimal Classification scheme, already in use in RAMEAU and soon to be applied by the Deutsche Bibliothek.

Existing subject authority files lack comprehensiveness with regard to time retrieval because the incorporate only hierarchical, equivalent, and associative relationships, as well as occasionally references to more recent and former terms. This also applies to the MACS (multilingual access to subjects) project.[48] MACS tries to establish a connection between all three subject authority files: LCSH, RAMEAU and SWD. It does not intend to create a complete multilingual thesaurus, however. Each authority file remains independent within the authority file structure and remains the responsibility of the respective national library. It enables the user to browse in a meta-thesaurus and to continue a query with foreign-language equivalents. Furthermore, the user may go straight to the bibliographic search function in all affiliated OPACs, taking the cultural dependency expressed in the relationship of the terms into consideration.

In contrast to MACS, the ChAF shows temporal relationships between all chronological terms from all disciplines—artistic styles, historical movements, musical style, and so on. Artists (and other individuals) whose works do not belong to an art style also could be shown in the ChAF if they lived or live in the specified time period. If later research shows that an artists's work was part of a different art style, the appropriate class number and the hierarchic relationship would be changed. The temporal relationship, however, would stay the same. By including foreign-language terms in the ChAF, the user could recognize chronological terms outside his or her own cultural or language area more easily if in chronological sequence and also become aware of a possible additional equivalent time span in another language.

Search with the New Retrieval Model

This section describes a specially designed search screen for cross-searching different bibliographic databases. It is based on the current menu-driven interface and existing subject data of the OPACs studied.

Search Field "Time Period"

For searching directly in bibliographic records, a separate search field called "time period" would be useful. In addition, it also could be used to open the ChAF index at any term or date position using a ChAF button similar to the Headings List button in the LC online catalog.

For the ChAF display, zoom functions and limits should be included. Limitations can be set by subject area or by personal name with the help of class number or indicator for the heading type. Various writers have made requests to display personal name headings in chronological order by birth date. For example, Hagler has noted, "Arranging personal names alphabetically by surname is convenient for locating material by or about individuals. However, if the relationship of persons to historical events is of greater interest to users of the listing, it may be better to arrange them in the equally simple numeric sequence of each person's birth date, whether in forward or reverse

1789-01-01/1799-12-31	(LCSH, g)	France—History—Revolution, 1789–1799
	(RAMEAU, g)	France ** Histoire ** 1789–1799 (révolution)
	(SWD, t)	Französische Revolution
1789-01-01/1789-12-31	(LCSH, u)	Goethe, Johann Wolfgang von, 1749–1831. Torquato Tasso
	(SWD, u)	Goethe, Johann Wolfgang von / Torquato Tasso
1789-06-27/1860-08-2	(LCSH, p)	Silcher, Friedrich, 1789–1860
	(SWD, p)	Silcher, Friedrich
1789-07-14	(LCSH, g)	France—History—Storming of the Bastille, 1789
	(RAMEAU, g)	France ** Histoire ** 14 juillet 1789
1789-08-21/1857-05-23	(LCSH, p)	Cauchy, Augustin Louis, Baron, 1789–1857
	(RAMEAU, p)	Cauchy, Augustin-Louis 1789–1857
	(SWD, p)	Cauchy, Augustin Louis
1789-08-26	(LCSH, u)	France. Déclaration des droits de l'homme et du citoyen
	(RAMEAU, u)	Déclaration des droits de l'homme et du citoyen (1789)
	(SWD, u)	Déclaration des droits de l'homme et du citoyen

Figure 4. Internal structure of the ChAF

chronological order."[49] The view of personal names without chronological terms is important when using the biographical method in science, such as for time life research in sociology. The field "time period" should offer several options in the pull-down menu to search for a special time span with or without limitation using further search fields (see table 1).

Predetermined menu options will facilitate searching by users from various backgrounds. Poo and Khoo explain that "users of online catalogs are very heterogeneous, varying widely in background, age, subject interests, computer and library literacy, and many other aspects. So the online catalog has to be designed to cater a wide range of users."[50]

It may be a surprise to find the subfield "publication year(s)" listed here, but for most catalog users the difference between the descriptive and the subject indexed time is not clear. Two other subfields—"history in year numbers, date" and "future, forecast in year numbers"—are used to set limits with the help of the encoded time, while all other subfields work with the stated form.

The "year number or date" search provides direct access to the time period code in bibliographic databases. When there are zero, too few, or too many hits, shorter, longer, or overlapping time spans will be shown on an intermediate screen or even automatically included (in fixed intervals). This corresponds to the zoom function in the *Encarta* encyclopedia and can be accomplished by numeric comparison of time period codes. In addition, options to include chronological terms from the ChAF that lie within the searched interval should always be offered, as it is not apparent to a user unfamiliar with the SHLs whether the coded or the verbal form of time was used.

The subfield "future, forecast in year numbers" is intended for queries on fictitious time periods (prognoses or prophecies). It is filtered out through an indicator in the time period code. The indicator is necessary to separate real history from fiction. In some cases, documents (including fiction and poetry) involve fictitious time details set in the future. However, as time goes by, these "future" details move into the past, thus creating the impression of a real historical event.

Orwell's *1984* is a good example. The year of creation and publication of the work corresponds with the chronological code and is represented in the ChAF. Moreover, the time period code contains the year "1984" followed by the indicator for its fictitiousness. In the subject heading index screen, the fictitious year 1984 would be accompanied by text such as "fictitious date" generated automatically by the indicator.

The subfield "complete history" is envisioned as a query possibility on its own, although this aspect is not taken into consideration in the cataloging practice in current SHLs. "Complete history" actually means the historical point of view of a topic. Thus, the catalog user is able to look for the complete course of history of a topic without having to know the chronological code for this term. However, the degree of currency (not always identical with the year of publication) has to be indicated correctly in the short title list.

In bibliographic databases, a search term entered in the subfield "epoch, style, event" can be directly searched in the subject field. Nevertheless, the time span should always be pointed out to the user in encoded form using the chronological code because—depending on the SHLs—the time aspect may be expressed only in the encoded form. In addition, the ChAF offers the possibility to look for temporal relationships with other chronological terms, even foreign-language ones, and to use any of those terms to continue and refine the search. Apart from this, further relationships could be shown when the MACS project is completed.

The subfield "person" is used both for verbal identification of a time period (lifetime) as well as for the combination of the personal name heading with another subfield of "time period." Limiting a biographical section is difficult as the encoded and the verbal form may occur in subject headings. A reciprocal, general reference such as "Continue search with year numbers" and vice versa "Search with 'Childhood and youth' and 'Enfance et

jeunesse'" may be helpful. A person's social environment, currently indexed verbally with "Friends and associates," would be accommodated more comprehensively in the ChAF.

Figure 5 shows a sequence of search steps for time retrieval applying the model introduced that uses the ChAF. Figure 6 illustrates this model.

The query looks at the time period codes. If there is no exact match, the zoom option (which varies the time span) or the look-up option (ChAF for chronological terms) is offered to the user. Among other terms, "Medicine, medieval" and "History of medicine, medieval" would be found in the ChAF to continue the search. Alternatively, a search also can start with a chronological term. In this case, a link to the ChAF (to find other chronological terms in the same period) or a limiting option (year numbers) would be offered.

Display of Search Results

The design of search results displays is not only important for time retrieval. Since 1997, an International Federation of Library Associations and Institutions Task Force has been dealing with this at a high level, drawing up the *Guidelines for OPAC Displays,* based on work by Yee and Layne.[51]

Addressing and testing the following questions is important.

What should be displayed? Parts of the subject authority file or the ChAF, the list of subject headings, the short title list, or the entire list of bibliographic records could be shown. The kind of user-friendly intermediate displays that are shown depends on the query. It is possible to load a particular display automatically, based on the number of hits a record has received, as is done in the expert system *E-Referencer,* for example.[52] The *E-Referencer* system helps users retrieve relevant records in OPACs using LCSH. Here, the number of hits is evaluated to determine the next display: zero record retrieved, twenty or fewer records retrieved, more than twenty records retrieved.[53] However, the selection possibilities the user sees should not be overly restricted, and interactive dialogs in the form of a time retrieval diagram should be supported (see figure 5).

In which form should the data be displayed? This question refers to the display of the authority files, the index, and the results lists. The essential zoom function and the limitation of results by subject area or by personal names have already been addressed in connection with the ChAF. Furthermore, the subject index display should be redesigned and adapted to the length of the subject data. For the LCSH, Massicotte suggests substituting the subdivisions with a general text message.[54] McGarry and Svenonius recommend adding a "blanket compression" that would "delete from the initial display of entries for a subject

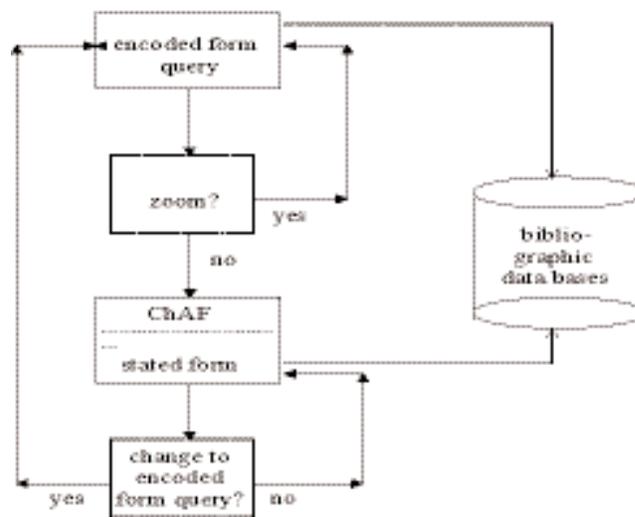**Table 1.** Main search field "time period" with subfields

Figure 5. Search steps for time retrieval with a ChAF

LCSH:
Medicine from the Black Death to the French disease
>Medicine, medieval—Europe—History
>Medicine—Europe—History—15th century
>Diseases and history—Europe
>Black Death—History
>Syphilis—Europe—History
>Syphilis—Epidemiology—Europe
>History of medicine, medieval
>History of medicine, early modern—Europe

RSWK:
Bader, Medicus und Weise Frau : Wege und Erfolge der mittelalterlichen Heilkunst [Barber, surgeon and wise woman : ways and successes of medieval medicine]
>Medizin ; Geschichte 500–1500

Note: The query seeks to locate literature about the history of medicine between 1450 and 1500, using the topical search term "Medicine," the field "time period," and the subfield "history in year numbers, date," of 1450–1500.

Figure 6. Example of a ChAF

heading not only those with geographic (first) subdivisions but also those with repeating elements in subdivisions, phrases, inversions, or parenthetical qualifiers immediately following the heading."[55]

In which order should the data be displayed? The default display of subject headings, short title lists, and complete bibliographic records is usually alphabetical order, without giving the searcher any choice. It is particularly important for simple subject headings that cover a certain time period to first give the complete history of a topic and then show the encoded and stated time forms chronologically. The problem of heading and topical subdivision combined with a period subdivision and the position of the fictitious year numbers must be considered as well. For the subject heading index display, thought should be given to whether the time aspect should be displayed in the first place when it was called up in the query.

Conclusion

The development and networking of OPACs on the Internet bring into question subject cataloging rules developed during the card catalog era. Such rules fail to take advantage of technological possibilities and to meet user demands for independent and easy searching. This paper has considered chronological terms (epoch headings, historiographic terms, names, and so on) and time codifications (years, dates). Chronological searching is especially important and difficult for users from the arts and humanities, as studies have demonstrated.[56]

This paper has examined the OPACs of the LC, Bibliothèque nationale de France, and Die Deutsche Bibliothek along with various subject heading languages (SHLs) and their rules concerning dates and time periods. Sample searches have shown that retrieval options for time details are not yet adequate. The various options for including time aspects in catalog records are not clear to the user. However, as the number of entries in online catalogs continues to grow in the future, users will be even more challenged to find a complete set of resources for a certain time period. That is why—in order to reveal to users the treasures now hidden in catalogs—an improved method for date retrieval is necessary. Modern date retrieval, using the latest technological developments, should facilitate searching across various systems and language areas as well.

The time retrieval model introduced here was shown to require three components: a time period code, a chronological code, and a chronology authority file (ChAF).

1. The time period code is a numerical field in the bibliographic record that gives the exact time period covered by the content of a book. Encoded time elements in the sub-

ject heading are identified as numerals, not characters. Consequently, searches for a time span with larger, smaller, and equal operators would become possible, whereas currently only a character comparison can take place.

2. The chronological code is also a numerical field that must have the same structure as the time period code. It is attached to each chronological term (including personal names) in the authority files. Indistinct terms like "Middle Ages" should be standardized to guarantee a comparability of the encoded and the verbal forms.

3. The ChAF contains all temporally limited terms along with their chronological code and their chronological relationships. Its design should be modeled on the timeline/historama/Zeitleiste of the digital encyclopedias.

A search screen modeled on menu-based OPAC interfaces has been outlined. Finally, a time retrieval using a ChAF, the use of the search field "time period" and its subfields, as well as the search sequence, have been illustrated and explained.

The theoretical nature of the model presented here must to be emphasized. Various issues have not yet been solved. Above all, the implementation of a chronology authority file may only be appropriate in disciplines like history, literature, art, and music.

However, in this author's opinion, the development of a new time retrieval approach should be undertaken despite personal and financial obstacles. The implementation of a chronology authority file would help avoid redundancies in subject cataloging. Cross-references in subject heading languages would disappear (an example from LCSH: "France—History—Revolution, 1792–1793—USE France—History—Revolution, 1789–1799"). Moreover, duplicates (such as "Medicine, medieval" and "History of medicine, medieval") would not be necessary. Last but not least, well prepared catalogs result in increased and more intensive use of the collection and can stimulate international and interdisciplinary research, as well as foster new scientific studies.

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Learning from the Past

Over the years since Library Resources and Technical Services *began publication in 1957, many fine papers have appeared in the journal. From time to time, we will republish an important paper that contributed in a significant way to the theory of the field or that identified and addressed a unique problem. These papers will be published with a new introduction that revisits the themes of the original paper. "The Acquisitions Librarian as Change Agent in the Transition to the Electronic Library," by Ross Atkinson, first appeared in 1992 (36, no. 1 [January 1992]: 7–20). This essay received the "Best of* LRTS *Award" for papers published in 1992. In it, Atkinson investigated the role of the acquisitions librarian in handling new technology and proposed new functions and relationships for acquisitions within the library. We have asked Atkinson to reconsider the ideas he explored in his original paper. His new introduction proceeds the award-winning essay.—Editor*

Reflection on "The Acquisitions Librarian as Change Agent in the Transition to the Electronic Library"

Ross Atkinson

The premise of this paper on the "acquisitions librarian as change agent," originally presented in 1991, was that acquisitions, of all the major library functions, was arguably the least prepared for the transition to a primarily digital information environment. At the same time, however—so the argument went—acquisitions was uniquely positioned, because of its specialized business skills and experience, to lead the way in what we would later call reappropriation, that is, the academy's resumption of the responsibility for the publication or distribution of some or all of the scholarly information it produces. (Today, in the era of SPARC [Scholarly Publishing and Academic Resources Coalition], High Wire Press, Project Muse, Project Euclid, E-Scholarship—just to name a few—the view that information services has a responsibility for the entire process of information exchange from the writer to the reader is self-evident; twelve years ago, however, it was still a

relatively vague abstraction.) The paper suggested, therefore, that acquisitions should make preparations to abandon its traditional operation and to assume a new role in the library and the academy as publication facilitator.

I feel that someone else wrote this paper—because I was someone else in 1991—and I infer now that the person who wrote it was making three implicit assumptions:

- Most scholarly publications would shift online relatively soon ("the floodgates will open")—certainly well before the end of the 1990s.
- In such a primarily online environment, the traditional function of acquisitions would become increasingly superfluous. Only an accountant would really be needed, to pay the bills.
- The whole process of scholarly communication, especially those areas that were dominated by

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commercial science publishers, was defective—and would likely collapse, sooner or later, of its own weight. It was important that the library be prepared, therefore, with alternative methods that scholars would be able to use to exchange information effectively.

All three of these assumptions have obviously turned out to be entirely mistaken. While the writer of the paper acknowledged the conservative nature of the academy, he totally overestimated the speed with which the academic community would move to electronic publishing. I am sure he would have been shocked in 1991 to learn that over 80 percent of Cornell's materials budget in 2003 was still being spent on traditional materials. He would probably have been somewhat less surprised, although certainly disappointed, to learn that the real leadership in the transition to electronic scholarly publishing has been provided (admittedly with some notable exceptions) by commercial journal publishers—and that they have brilliantly contrived new methods (licensing, bundling) to increase their revenues in the online environment beyond even what they had managed to achieve in the era of print publishing.

One (admittedly obvious) expectation in the paper that certainly has turned out to be true is that books would move much more slowly online than journals. Unlike commercial journal publishers, scholarly monographic publishers, especially university presses, have for the most part developed no cohesive business plan for moving online—in fact, one has the impression that some of them may have been assuming that no such shift to electronic monographic publishing was ever going to happen. When third-party vendors, moreover, have sought to make scholarly monographs accessible online, the restrictions imposed by the publishers, because of their apprehension about the effect on paper sales, have often been so stringent as to guarantee that monographs would not be routinely used in electronic form. The unwillingness of monographic publishers to devise a plan for online publishing (and the reluctance of scholars in the humanities and the narrative social sciences to demand such a plan) is now leading to a genuine crisis in academic monographic publishing that will have long term effects on the ability of scholars to exchange information as a formal, extended narrative.

The second implied assumption made in the paper, that acquisitions as a function would become increasingly unnecessary as scholarly information moves online, also has turned out to be wildly misconceived. In fact, the exact opposite has happened. Acquisitions adapted rapidly and adroitly to online publication, with the result that it has become in many ways even more central to library operations than it was in the traditional environment. This is the case in part because publishers and vendors now play a more active and persistent role in the online era: in many cases, digital information, unlike its print counterpart, is no longer transferred from the publisher to the library, but rather resides on the publisher's server, to which the library must maintain access. Acquisitions, as the operation responsible for the business and human connections between the library and the vendor, has therefore become more indispensable than ever.

How, then, could the person who wrote this paper in 1991 have been so myopic as to assume (assuming he was assuming it) that acquisitions would become increasingly superfluous in a primarily online environment? The answer probably lies in the third faulty assumption. Acquisitions plays such a central role in libraries today, in part precisely because the traditional business paradigm of scholarly publishing remains largely intact. In 1991, on the other hand, it seemed (I believe, in retrospect) much more apparent that the end of scholarly publishing as we knew it was rapidly approaching—and that it was only a matter of time before the academy would recognize this and rise up to reappropriate its rightful responsibility for disseminating the fruits of its own labors. Clearly no such revolutionary reappropriation has come to pass.

Have, then, any of the main claims and predictions made by the writer of this paper twelve years ago turned out to have any manifestation in reality? Not really—or perhaps more to the point: not yet, because scholarly publishing is in fact continuing to evolve, and that evolution seems to be accelerating. New publishing alternatives and paradigms are even now being proposed, and much depends upon the extent to which any of these are successful—perhaps most notably what we have recently come to call open-access publishing. Although the economics of open access remain to be tested and proven, the concept has at least two enormous advantages over the traditional model. First, it would make scholarly information freely available to all who need it (or at least to all who have Internet access). Second, and nearly as important, it would make the price of publishing such information highly visible to individual scholars and their funding agencies.

If the shift to open access publishing is in the best interest of scholarship and higher education—and there is no doubt to my mind that it would be—then the academic library community must move quickly to answer two closely interrelated questions: (a) How can the library increase the potential or likelihood for such a shift? and (b) What adjustments will need to be made to library services in an open access environment? The point is, of course, that the answers to

both questions may well center in large part on the library's acquisitions function.

The single most important prerequisite for a successful open access publishing program will likely be the availability and acceptance of a systematic and coordinated process for the distributed funding of open-access publication. Creating and participating in such a system will prove to be a substantial challenge, in part because the funding to support such publication would derive from many different and independent sources—for example, foundation funding, government grants, the individual author, and various institutional sources, including probably the library materials budget. There can be no question, in any event, that if such an acceptable and reliable model could be developed and vetted soon, it would greatly increase the chances that open-access publishing would become a new norm for scholarly communication.

The ultimate challenge and opportunity, therefore, for the acquisitions librarian as change agent and facilitator of reappropriation—heralded admittedly somewhat prematurely in this article written in 1991—may well lie in the conceptualization and implementation of a distributed business plan for open-access publishing. No other operation in the academy is arguably as well equipped and inclined to create and coordinate such a plan as the library's acquisitions function. Perhaps the time has now come, therefore, for the acquisitions community finally to decide whether it is willing to invest the effort and to take the risk in providing such leadership.

Learning from the Past
The Acquisitions Librarian as Change Agent in the Transition to the Electronic Library

Ross Atkinson

All information services, regardless of the format used to convey the information, can be divided into the two fundamental categories of delivery and mediation. Delivery is the less visible but no less critical service responsible for shifting the physical information package among different locations. Delivery will become an increasingly significant—but no less invisible—function after the arrival of routine electronic publishing. Acquisitions administrators—who, along with circulation, interlibrary loan, and preservation officers, have primary responsibility for delivery in the paper-based academic library of today—need to begin planning now to expand their knowledge and responsibilities to respond to the new requirements for information delivery in the rapidly approaching age of networked information. If they can achieve such objectives, acquisitions staff will play a key role in improving the future contributions of the library to the academy.

> If there is any period one would desire to be born in, is it not the age of Revolution; when the old and the new stand side by side and admit of being compared; when the energies of all men are searched by fear and by hope; and when the historic glories of the old can be compensated by the rich possibilities of the new era? This time, like all times, is a very good one, if we but know what to do with it.
>
> —Emerson, *The American Scholar*

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Anyone seeking a quick, concentrated glimpse into the current state of the academic library, its self-esteem and its self-depreciation, its hubris and its paranoia, need look no further than the library's acquisitions operation.[1] The place and image of the library in the institution is mirrored in the position and perception of the acquisitions operation in the academic library. In both cases, as Joe Hewitt has implied,[2] we find complex responsibilities seldom understood by those in authority and perceived by most clientele (if indeed they are noticed at all as being primarily clerical and flagrantly bureaucratic). We find, above all, in both the acquisitions operation and the library as a whole, a vague apprehension of a creeping superfluity, a sense of pending obsolesence engendered primarily by advances in information technology so rapid in their development and so complex in their potential as to be barely intelligible to many line librarians.

Discussions of this situation are often complicated by a tendency to confuse functions with administrative units. The function of acquisitions is for the time being not at all in jeopardy, but the acquisitions department might be, and we have indeed seen transformations in such departments in several institutions; in some cases we have even seen parts of the traditional acquisitions responsibility shifted into other functional areas, such as collection development. In the same way, the information services function

in the academy now performed by the library can never be eliminated if the institution is to pursue its educational and research mission, but there are prospects that at some institutions the library as an administrative unit will merge with or be relegated to other information service units on campus, such as academic computing.

Regardless of whether such administrative reorganizations enhance or impair the performance of library functions, the fact that such restructuring is even considered presents a clear signal that acquisitions may have failed to convince the library—and that the library may have failed to convince the institution—of its ability to effectively meet the needs of its clientele as we gradually but inexorably enter the new era of online information. The question that immediately presents itself, therefore, is whether adjustments might be introduced into the acquisitions function that would not only lead to an improvement in its role in the library but at the same time improve the effectiveness of the library's contribution to the institution. The purpose of this paper is to present some general ideas and tentative suggestions that, I hope, will serve as a basis for further discussion on this issue.

Future Prospects

We have in recent years witnessed a small but growing number of standard information sources published in electronic form. This shift from paper to electronic publishing has so far had its primary impact in public services, especially reference and collection development. This is because many such electronic sources either are directly accessible to users or public services staff over networks or are shipped to libraries as computer files in such forms as CD-ROMs or tapes, so that they can be managed by acquisitions operations in somewhat the same way that

traditional paper sources are treated. No one will doubt, however, that the point is rapidly approaching at which an increasing amount of full-text information will be made routinely available to libraries and their users by transmission over networks, and it is that inevitable innovation—its approach already heralded for decades—which upon finally arriving will have the most profound effect on all aspects of library operations, including especially the acquisitions function.[3]

The question acquisitions administrators need to consider is whether they plan to continue simply to maintain their current focus, retain their present methods, and restrict their responsibilities to those paper (or paper-like) publications that will no doubt continue to be published for some time (this is fully possible, since one could presumably bypass acquisitions in ordering access over networks to online sources) or whether the acquisitions function should be prepared to undergo some radical, fundamental alteration, so that it would gradually begin to play, with respect to networked information, a role analogous to what it now plays in the provision of information transferred via paper. There is still time for acquisitions to begin to plan for such a transformation. The development of electronic publishing has for several reasons not evolved nearly as quickly as was once predicted.[4] But electronic publishing is nevertheless making noticeable progress, and it is likely to move forward very rapidly and very suddenly once it gains momentum and critical mass of user acceptance. While opportunities remain, therefore, to adjust to, and to take advantage of, these rapidly evolving developments in the techniques of information exchange, we are probably approaching the eleventh hour.

We now have available to us a variety of well-conceived predictions about the future of the library as

publications become increasingly available online.[5] These discussions are very useful in preparing ourselves for the changes we must shortly confront; however, it is important to bear two further points in mind. First, more precise projections of the conditions of libraries in the coming decades can be little more than exercises in pure speculation, which are, for the most part, not helpful in planning, especially given the restricted time we have available to spend on such work. Second, well-managed planning, if successful, is not simply an effort to prepare for future events; it should also be an attempt to shape them: by considering and readying ourselves for the future, we can and probably will change it. It is essential, therefore, that any planning we do leaves us with broad flexibility to absorb and to take advantage of unforeseen future developments while at the same time provides us with some kind of clear framework within which, or target toward which, we can orient ourselves in the course of the transition. One way to begin this process is to agree upon a general description or model of the whole operation—in this case information services—that is applicable to both the present and the probable future condition. Such an abstract model can be used as a context within which to make adjustments to the concrete conditions or activities now in place, in order to move the operation through the transition toward the preferred future. Creating such a description applicable to both the present and the probable future is in a sense simply a way of looking at the present and future simultaneously as we begin to make our adjustments: if one changes or upgrades activities or concepts, and these continue to fit into the model, then one is probably moving in the right direction. Let us therefore attempt this—but first we need to insert two presuppositions.

Two Presuppositions

The Potential Primacy of Notification Sources

Graphic information is communicated in many formats for a wide variety of purposes. Many categories of information sources—belles lettres, for example—will almost certainly continue to be published in paper form well into the future, and the relationship between those materials and the library's acquisition function will presumably remain unaltered for some time. We have recently become aware, on the other hand, that certain types of information sources are particularly amenable to electronic publication—for example, bibliographic files and numeric data. The next major advance will presumably be the routine publication online of narrative full text. Of the various sources for which the academic library is responsible, it will most probably be the large category of library materials that I have elsewhere called *notification sources,*[6] which will be published increasingly in full-text electronic form in the near future and which will be likely to have the most significant impact on library operations. Notification sources are those materials written by scholars to describe the results of their research and thought for the information and assessment of other scholars working in the same or related fields. Most scholarly journal articles and monographs fit into this category, and there have recently been repeated calls from scholars, librarians, and network administrators to publish more information of this kind in electronic form.[7] It is in notification sources that the greatest opportunities for online scholarly communication should be available.[8] The delay in routinely publishing most notification sources online surely derives less from any limitations of technology than from cultural habits and the economics of publishing. Once these two (admittedly substan-

tial) impediments are bypassed or moved aside, as they must eventually be, the floodgates will open, and we will experience a deluge of online scholarly publications, which some institutional agency—one hopes it will be the library—will need to ensure are available to scholars. Most of these publications, at least in the beginning, will probably be electronic journals, many of them no doubt in the sciences.[9] But the other scholarly disciplines will not be far behind, because all subjects will benefit so demonstrably from remote access at personal workstations to the latest published information.

For reasons of convention, aesthetics, and ease of access, we may expect that monographic publications will continue to be published in paper form for a somewhat longer period than their journal counterparts, but we must anticipate that the scholarly monograph as well will succumb to online publication in the relatively near future.[10] It may be that the scholarly monograph will be replaced by some form of online monograph, or that lengthier materials will be published in digital form with the expectation that they will be printed by or for the library user on site and on demand, or even that the monograph as a method of scholarly communication will be replaced by shorter essays more conducive to publication as electronic journal articles. In any event, the driving force behind the replacement of the paper monograph by some online form of publication will undoubtedly be primarily economic. The publication of lengthier studies on highly specialized subjects, especially in those disciplines without industrial or commercial applications, is already becoming so expensive as to be prohibitive. I suspect in fact that there has seldom been enough of a true demand for such specialized monographic notification sources to justify their publication economically. We have perhaps succeeded so far in

circumventing this problem primarily though the agency of the academic library, which creates a kind of artificial demand for specialized scholarly publications. Under the current system of collection development, the library imputes a use-value to materials for which no actual use-value has been demonstrated. The library purchases the publication on the basis of that potential use-value (or on the assumption that the publication by virtue of its availability on the shelf will acquire use-value). As a result, enough of a reliable demand of this kind presumably exists to permit publishers to bring out short runs of highly specialized monographic publications. The pressures on library budgets in recent years (caused in part by rapidly inflated journal prices), however, have now become so paralytic in their effect that some libraries can no longer afford to acquire materials based on potential—as opposed to demonstrated or expressed—use-value. Since a reduction in publication costs appears unlikely, it may well be that only through some form of restructuring of the scholarly publication process will it remain possible economically to communicate such specialized information for very much longer in lengthier publication formats.

In light of these considerations, therefore, let us restrict our inquiry, at least initially, to services promoting the exchange and use of notification sources published electronically.

The Inclusion of Input

The purpose of notification sources is, obviously, scholarly communication. Communication entails the transmission and the reception of information—input and output. Modern libraries have restricted their responsibilities mainly for reception—or more precisely, to the facilitation of reception—of information, leaving responsibilities for transmission for the most part to other

agencies, mainly publishers. This has always been a potentially problematic approach to the promotion of scholarly communication, because transmission and reception are so fundamentally interdependent. If the library intends to continue to play a key role in scholarly communication in the online age, therefore, it must be prepared to assume some responsibility itself for ensuring that the entire scholarly communication system operates effectively—and that must necessarily include input.

The need and the potential for the academic library to play a much greater role in publishing as we move further in to the online era is by now a relatively common idea.[11] Little has been done so far, however, to chart the processes by which such responsibilities might be assumed. At this point, we need only stress two implications of such an expansion of the library's traditional activities. First, if such new responsibilities are to be accepted by the library, a key role in that undertaking will need to be played by those library staff with the most advanced understanding of the processes and economics of publication—and those staff will for the most part be located in our acquisitions (and also collection development) departments.

The second implication is mainly economic. If the library does assume greater responsibility for assisting and promoting the entire process of scholarly communication, much of which is achieved primarily through notification sources, then the present methods of funding that communication must soon be recognized as ineffective. We must bear in mind that scholarly communication is an admittedly slow but nevertheless progressive dialogue. Scholars read publications primarily to write more of them—to continue the conversation. (Much more "interactive" publication will no doubt become possible online.) Both sides benefit from the dialogue: not only the reader, but also the author

and his or her institution. (The institution's primary "product" or "commodity," which is sold to prospective students and to funding agencies is, after all, the reputation of its faculty—and that reputation is established mainly through publications.) Most of the readers and writers of notification sources are, moreover, the clientele of academic libraries. Under such circumstances, we must conclude that our current funding methods for notification sources are largely counterproductive. We will be wasting our money—and in a very real sense we are already doing so—buying information (packaged as notification sources) from each other. Instead, we should be using that funding to send such information to each other. Libraries must maneuver themselves into a position from which they will be accepted as credible and legitimate conduits for the transmission of notification sources.[12] Needless to say, such a shift in the method of scholarly communication raises many questions, but there is no doubt that academic libraries are fully capable of putting such a system into effect and that such an arrangement managed by the library would promote the interests of scholarly communication substantially. It would also, if properly managed, bring about a much more egalitarian distribution of scholarly information.

Having posited our two presuppositions, we may now turn to our primary task of presenting a general description of information services.

The Dialectic of Information Services

Information services are those facilities designed to improve the ability of (in the sense of reducing the time required by) the individual client to identify, organize, transmit, receive, exploit, and develop and maintain standards for communications, usually in the form of sets of graphic signs, for

predefined purposes. In the academic library, those purposes are for the most part education and research.

The basis of our description will be a division of information services into two fundamental functional categories. The first of these two functions, which we will call *delivery,* is charged with the transportation or conduction of the material information package or carrier; the other function, which we will call *mediation,* is designed to assist the sender and the receiver of the package in the transmission, receipt, and the application of the so-called information content of the package.[13] Together these functions form a kind of dialectic of information services, so that one cannot in reality be disconnected from the other. At the more elementary level, it is obvious that mediation, in order to achieve its function, must play a role in the delivery process—it must, for example, take economic issues into account in document assessment and consider location as part of the process of identification. By the same token, delivery can seldom be effectively achieved without some understanding of or reference to the content, and the needs of the communicants—i.e., the senders and receivers of the information—must be understood by those responsible for delivery if, for example, effective priorities for delivery are to be established.

On a more fundamental level, the dialectic reduces perhaps most clearly to the realization that all communication could and might be understood as a form or process of delivery. The package and the content are both primarily means of delivery. The medium is selected by the communicants through a kind of mutual agreement that such a medium provides the best prospects for delivery, and that decision will be driven or conditioned by the relative delivery potential of different media. Even the capacity to manipulate the data received, which

most electronic media now provide the user—that, too, can and must be understood in a sense as a delivery function, for the data needed by the receiver are in effect made deliverable and are delivered by means of that manipulation. The user in effect through manipulation creates and delivers the data for his or her own use. Mediation itself can in fact be understood—and must sometimes be viewed—as that segment of information services responsible for ensuring and enhancing delivery.

We could, of course, expand on these connections indefinitely. The only important point is that, in the heat of our efforts to divide information services into these two types of activities, we not lose sight of the fact that such categorical distinctions as delivery and mediation are always artificial abstractions. We can no more separate delivery from mediation than we can divide transmission from reception: each is understandable and practicable only as an extension of the other. At the operational level, however, it does appear very likely that some staff in the electronic library will specialize in delivery and others in mediation.

Both delivery and mediation are, of course, services in themselves, designed to serve the needs of the communicants. Both delivery and mediation are also concerned with the material containers of information— albeit in very different ways. This is, again, as true in the electronic environment as it is in the paper environment. It is admittedly sometimes tempting to view information exchange in electronic form as something done "without having to rely on tangible physical objects as the medium of communication."[14] This is, of course, incorrect. All communication is achieved through some kind of material media. In the case of online communication, those media are difficult to observe and they can be moved about very quickly, but they remain nevertheless material objects, and

their transmission and reception remain material manipulations.

We must be careful to distinguish, therefore, between: (a) the carrier or what we are calling the information package (e.g., a book or a database); (b) the content of the package, which most often consists of linguistic or pictorial symbols (e.g., the print on the page or on the screen), which is, of course, also material; and (c) the information symbolized by the content, which is encrypted (encoded, turned into symbols) for purposes of communication by the writer and decrypted by the reader. Bearing in mind that these three entities are, of course, also inseparably interdependent, we might say that, in the grossest possible terms, the responsibility for managing the carrier or package belongs in large part to the delivery operation; the content forms in many ways the central focus of mediation; while the information itself must always be the primary concern and responsibility of the communicants.

We can best begin to distinguish delivery services from mediation services by differentiating their respective relationships to the information package and to the user. Delivery is primarily a logistical operation aimed at the transportation of the package or the carrier from one location to another. The material nature of the package, its physical composition, is of critical importance to the delivery operation, because it has the most fundamental effect on the package's portability. It is in general much easier (or, at least, much faster) to move information packages from one location to another in electronic form than in paper form. Regardless of the package's physical composition, however, delivery requires a thorough knowledge of the technology of transmission as well as an experienced understanding of many of the peripheral factors—administrative, economic, legal—upon which the successful movement of the information package depends.

Mediation, on the other hand, is primarily a linguistic or hermeneutic operation, designed to optimize or amplify the exchange of information among the communicants; this service reduces in most instances to assisting the writers and readers in making different kinds of selection decisions: what and how to transmit, what to receive and what to filter out, how to search, what uses to make of the information once it is obtained. While delivery is concerned more with the transportation of the information package (which may admittedly sometimes involve some transcription of the content), mediation must concentrate more on assisting in the translation of meaning into material symbols, and of the material symbols into applicable meaning. This requires knowledge of the needs and interests of the communicants, as well as the methods of identifying and interpreting information packages. Delivery services work primarily with matter "out there" in the material world (including, increasingly, segments of electronic databases); their activities, operations, and success are for the most part objective, public, and measurable. Mediation services, on the other hand, while also working admittedly with material content, are nevertheless designed to facilitate private, subjective activities—writing, reading, evaluating, interpreting, applying—which are neither observable nor precisely measurable.

In spite of their relatively observable activities, however, delivery services are normally separate from, and seldom observed by, the communicating clientele. That aspect of information services that is de facto public, in other words, and that could be objectively evaluated is paradoxically seldom even perceived, let alone evaluated by the public. Mediation, on the other hand, is subject to constant scrutiny and aggressive public assessment. Even though delivery operations in the traditional paper

environment are already barely visible to most library users, such services in the online environment have the potential to become even more obscure. How often have we heard it said that in the online environment, it makes no difference where the information is located: the user can gain access to it over the network regardless of its location? This is indeed true, provided that those invisible technicians and information service specialists responsible for delivery have done and continue to do their work. The extensive technical and administrative effort invested to provide such immediate access to large volumes of information in different locations remains relatively unnoticed by most users—unless, of course, the system malfunctions.

This also means among other things that delivery services always function as a kind of direct representative of the user. Delivery services act for the communicants in their absence and carry out their presumed bidding, in effect making decisions for them. One of the major liabilities of delivery services, therefore, to which we have already made reference, is that delivery staff can for this reason alone easily become detached from the clientele in whose interest they are charged to operate. Mediation services, on the other hand, can seldom if ever act entirely for the communicants but rather must work frequently in their presence as (often very much less than equal) partners. Precisely because mediation services depend for their success on a close coordination with the user, they are highly visible and are subject to all of the benefits and liabilities of that exposure. It is mediation services, moreover, that always have functioned as the library's link to the user and will no doubt continue to do so.

We must also distinguish between our two basic services at the economic level. Mediation services, with various degrees of input from the communicants, try often to assess the value of information from the perspective of utility or use-value. The willingness to pay the cost of the transmission and receipt of the document depends upon how much (i.e., how fast) that access is needed by the receiver. Delivery services, on the other hand, tend to view the value of the document more in terms of its exchange-value or market value—i.e., in financial terms. The value of the document or package is assessed or inferred mainly by comparing it as a material object to other packages of like quality, origin, and design. Thus, while mediation services are more inclined to view scholarship as a form of specialized communication and documents as products of research to be communicated, delivery services tend perhaps to view the document more as a commodity and scholarly information exchange more as a specialized form of commerce. This tendency is perhaps one further manifestation of the fact that delivery services are accustomed to objectivity and relatively exact measurement, while mediation services understand their operation as promoting primarily subjective and relatively private action.

We should note, finally, that the citation of an information package—its bibliographic surrogate—may refer to different concepts in delivery than in mediation. While the citation for mediation purposes is used mainly to characterize or identify the content as it relates to the content of other documents, the citation for purposes of delivery is used mainly as a means to determine where the document is or could be physically located and perhaps where it should be sent—in other words, a kind of address. What the document is about—in the sense of what its content refers to—is for the most part irrelevant to delivery services, except to the extent that it can serve as an indication of its origin and destination.

In order to examine these concepts further, let us resort to a diagram that summarizes the distinctions we have been discussing but that also retains at the same time the terms we use now in the primarily paper environment (see figure 1).

The broken vertical line between input and output today separates also the library's responsibilities on the output side from those of the publisher, who is now primarily responsible for input. As noted earlier, at least as far as notification sources are concerned, which are both written and read primarily by the clientele of academic libraries, there is no reason, especially in the online environment, not to expand the library's role in information services to include input—to fuse more effectively the inputting and outputting operations. Even in the primarily paper environment, as already noted, we pay dearly for this unnecessary and highly contradictory division of responsibilities. Our goal, therefore, must be not simply to add input responsibilities to those we already have for output, but also in so doing to bring about a closer coordination or consolidation between the two.

This is admittedly perhaps most demonstrably practicable in the diverse realm of mediation. Certainly the library has the potential, and should assume much more responsibility for, assisting and organizing the editing or input-filtering function. Much more is being published today than needs to be for purposes of scholarship, because, among other things, there is an inadequate system of quality control.[15] Working with scholars to establish standards and procedures for editing notification sources should be a fundamental library service, which should aim to bring about a much more effective and dependable quality control over scholarly communication. But we must also strive to combine what are now conceived primarily as outputting
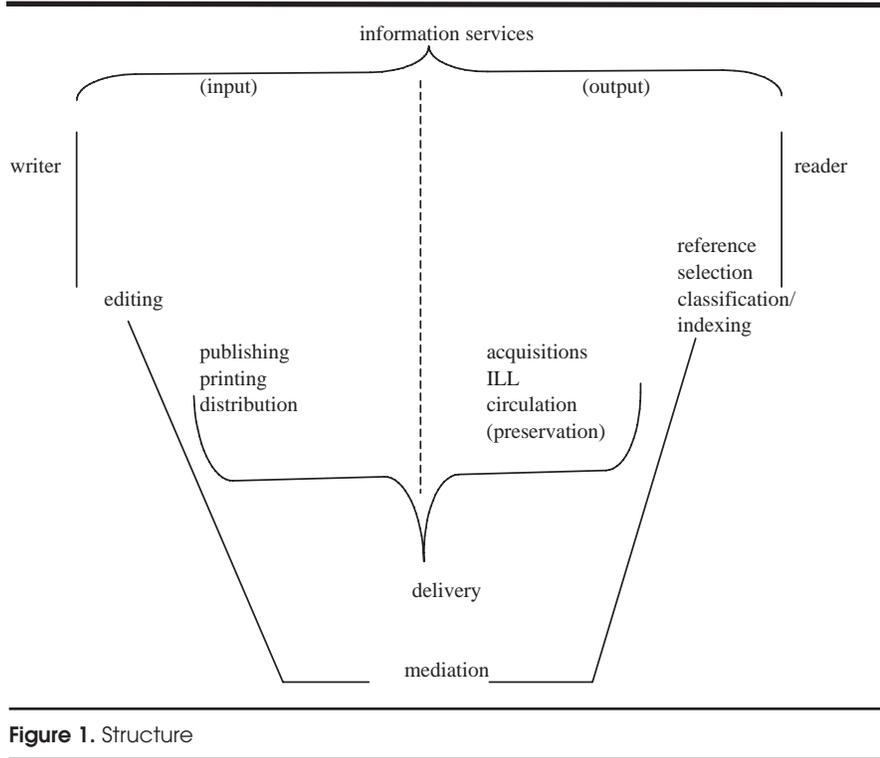
Figure 1. Structure

responsibilities with inputting activities. This is especially needed in selection and in cataloging and indexing. An integral aspect of the selection responsibilities for notification sources should be the influencing and assisting of what gets published; part of selection activity, in other words, as mediation service, should be to work closely with scholars to select those writings that should be made public through standard channels and to determine the levels of access that should be provided for different publications. The classification and indexing of notification sources should also properly be done by the library—again, as mediation service, that is, in partnership with the author at the inputting stage. When the library transmits (i.e., publishes) a notification source, the cataloging or indexing should be part of, or one further form of, that publication. As mentioned earlier, collection development funding budgeted for notification sources should be used at least partially for

inputting, i.e., for transmitting those sources to other libraries for the use of scholars elsewhere.

Such an amalgamation between input and output should also occur in the area of delivery services. Those staff responsible for receiving transmissions—or for ensuring that such transmissions are available to local scholars—should be the same staff responsible for the transmission of the work of local scholars to other institutions—or at least for ensuring that other institutions can effectively request and receive such transmissions on demand. In this way, we can guarantee critically important uniform standards and procedures in the online exchange of notification sources, much as we have succeeded to a limited extent in achieving such standardization today in interlibrary loan.

We must bear in mind, finally, that delivery not only is concerned with the movement of information into and out of the institution for research purposes, but is also responsible for the trans-

portation of information within the institution for instructional purposes. Information, for example, "scattered throughout the library can be brought together or interconnected to form a useful collection for teaching and learning purposes. These facilities can be supported by not only the library but also the computer center and offices of instructional development on campus."[16]

Beyond Notification

Although we have restricted our discussion to notification sources, we must also pay at least some passing attention to the fact that other sources will also become increasingly available online in full text, although not as quickly, I suspect, as current notification sources. One very large body of potential online information, which may well become prevalent shortly after the initial emergence of notification sources, consists of materials previously published in paper form but later digitized. The purpose of such digitization may be preservation, storage, or simply improvement of access. Whatever the purpose, we must expect large numbers of digitized documents eventually to replace their paper originals at most of our institutions. These digitized items will be transportable over networks to readers throughout the country and the world. The direct intervention of libraries in this transfer of information might possibly be less necessary, although the screening or selection skills of mediation will very probably remain essential services. In any event, such transfer will be impossible without not only technical innovations but also complex economic and political negotiations. Creating and maintaining an infrastructure that can promote and link such innovation and negotiation must be the responsibility of delivery services. Once again we find the special skills of delivery staff

in clear demand: technical and administrative knowledge and skills, not to mention an understanding of the economic base on which the whole structure must be erected. In addition, the legal work to be done on such digitized reprints, and which should also be accepted as part of the responsibility of delivery services, will be considerable, because most of the materials to be transferred to online form will be protected by copyright. Some agency within the academy familiar with the economics of information and publication will need to negotiate with publishers on the provision of access in this form.

There is also no reason not to assume that all scholarly publications—not only notification sources—might eventually be published online, in the sense that they would be sent to institutions over a network, and then either printed and put on the shelf or maintained and read in digital form and, if necessary, printed on demand. We are now, I believe, technically able to accomplish this. Once again, however, it will not be the technology that deters this innovation, but rather the fact that a critical portion of the current input side of delivery services—i.e., publishing—remains primarily in the hands of commercial publishers whose goals are not communication but rather revenue and who therefore must control and restrict the distribution of their publications. Online publication, with its potential for immediate proliferation, would jeopardize that restriction. This is one more reason that it is essential for the academic library to assume increasing responsibility as soon as possible for the input side of delivery services, for only in that way will scholarly communication realize the full benefits of online publication.

Conclusions

While libraries have recognized for some time that substantial changes in what we have been calling mediation will issue from advances in electronic publishing,[17] libraries have reflected much less on the changes that are bound to occur in delivery—changes that will be at least as significant as those we anticipate in mediation and, given the increased independence of the user from direct mediation in the online age, possibly even more significant. Delivery, redefined or specified in some manner as we have tried to do above, will remain a highly critical function, therefore, in the electronic library.

It is clear that, if we adopt perspectives similar to those presented above, a variety of relatively disparate operations in the current environment—acquisitions, interlibrary loan, publishing, network design, telecommunications—are in fact all oriented toward very similar objectives and are perhaps most productively understood as variations of a single service concept. There is, moreover, at least some potential, as we move increasingly into the era of online information exchange, for these now separate functions and responsibilities to be synthesized into a unified system of scholarly information delivery.

There can be no doubt that the current delivery operations in the library have the leverage and the potential, the position and the connections, to play a much expanded coordinating role in future information services. The ability of the library to manage and adapt to rapid changes in information technology will depend, moreover, precisely upon such a conscious "interaction with the environment."[18] This does not mean, I hasten to add, that our current library delivery services will necessarily assume such a role. Certainly such opportunities will not materialize *ex nihilo*—nor is it likely that such responsibilities will simply devolve to any operation anywhere in the information services system without some action being taken by that operation to attract those responsibilities. It will be, as always, those segments of the system that best discern how to take advantage of the present to create their own future that are most likely to play an enhanced role in that future (albeit not always in the way they had originally planned). Whether acquisitions staff in academic libraries today will have the motivation and the foresight to create for themselves a more influential and critical position in the kind of information services structure we have been describing is a question to which I have no answer. What I do know is that the necessary (if not alone sufficient) condition for the assumption of a major leadership role by acquisitions will be at the very least a breadth of knowledge and perspective not today traditionally associated with the acquisitions function. Gaining that knowledge, forming that breadth of perspective, would no doubt be the most effective first step by acquisitions administration toward that preferred future. What kind of knowledge are we talking about?

To begin with, the knowledge acquisitions already possesses in the economics of publishing will need to be broadened. Above all, the same level of expertise acquisitions is reputed to possess in the area of traditional publishing must be extended to electronic publishing. The library, and indeed the institution, should be able to look to acquisitions as the authority on advances in electronic publishing for purposes of scholarly communication. This knowledge must encompass not simply the techniques but also the economics of scholarly publication, precisely because, again, the major impediments to the evolution of electronic publishing are not electronic. They are economic. If the library is truly to serve the interests of scholarly communication, it must appropriate increased economic responsibility for scholarly publishing. The economics of scholarly communication cannot be left solely in the hands of either the

information technicians or the commercial publishers, although both of those groups—one in the interest of expediency, the other for purposes of profit—have been and will continue to be quite prepared to assume that control. Rather, it is the library that is in the best position to assume responsibility, as it has always sought to do, for ensuring that scholarly information is available to all who need it for educational and research purposes.

Second, and closely related to the need for acquisitions to broaden its knowledge of the techniques and economics of publishing, is the need for acquisitions to work to gain a more in-depth understanding of information technology and telecommunications. This is necessary in order both to promote electronic publishing and to begin to guide and influence technical innovations in the information industry more effectively. A durable and open link has yet to be forged between the library and information engineering; if this is not put in place relatively soon, two distinct and competing cultures are certain to emerge. This is not to deny, of course, that the development of information technology should be left in the hands of the technicians. It certainly should be, but those technicians should and will need much more precise guidance in the potential applications of that technology,[19] and it is through the library's delivery services—those staff most knowledgeable in the material aspects of information management—that such guidance should be supplied.

Finally, were acquisitions to assume such an expanded role in the electronic library, it would need to begin now to strengthen its understanding of mediation services, as these will evolve in the online era. This is necessary not only to gather the information needed to advise information engineers on future technical development requirements, but also more fundamentally to ensure

that all delivery operations are meeting the needs of scholarly information exchange. Mediation services will, as already noted, very probably remain the primary link between delivery services and the clientele—the communicants. The potential for delivery services to become isolated, to act as independent representatives of the communicants with only a vague or indirect understanding of their needs, can be avoided only by delivery services establishing and maintaining routine and functional connections with mediation services.

This is admittedly an almost absurdly ambitious agenda for acquisitions—but we face unprecedented changes and opportunities, and these call for radical action. If such goals as those just described could be achieved in the near future by the acquisitions operation, delivery services would be able to assume the kind of pivotal coordinating or linking function necessary ultimately to attain the level of efficiency and productivity that users of information services in an online environment will demand and deserve. This linking function is schematized in figure 2.

The ideal function of delivery within such a structure is not only to manage the logistics of the transmission and reception of graphic information for the institution, but also in doing so to represent the needs of scholarly communication to the technical arm of information services and to convey the technical capacities and options, including their administrative and economic advantages and perquisites, through the agency of mediation services, to the scholarly user community. Delivery services would function in such a capacity as a kind of regulatory mechanism within the national system of scholarly information exchange, which would define what material forms of exchange are technically available and economically feasible. This service, if well managed, would have the most beneficial effects
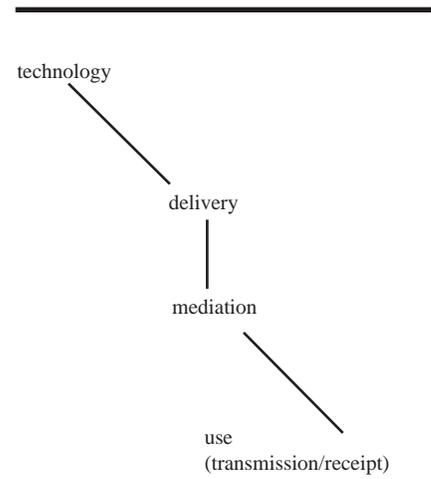

Figure 2. Coordination

for the communication of scholarly information in the online era, for the service contribution of the library to the institution, and, needless to say, for the position of delivery services within the library.

Despite the forward-looking philosophies adopted by a small number of acquisitions departments, few operations in the academic library today appear as ill prepared as acquisitions for the advent of online information exchange. Certainly no operation will be more profoundly affected by that development than acquisitions. No operation has so much to lose by deferring such preparation or so much to gain by beginning now to plan and to implement whatever functional changes are needed to accommodate and to exploit these opportunities. If acquisitions does not assume these responsibilities, they will certainly be absorbed by other agencies in the information services community, probably ultimately to the detriment of scholarly communication.

References and Notes

1. I will be using the term acquisitions to refer to those library functions responsible for the ordering and receipt of library materials in all formats, including serials.

2. Joe A. Hewitt, "On the Nature of Acquisitions," *Library Resources & Technical Services* 33 (1989): 107.

3. See *Managing a New Library Resource: Results of the RLG Machine-Readable Data File Project in Six Member Libraries* (Mountain View, Calif.: Research Libraries Group, 1989). For a recent, very adaptable effort to integrate electronic publications into the current academic library, see Paul Metz and others, *Report of the Task Force on the Electronic Journal* (Blacksburg, Va.: University Libraries, Virginia Polytechnic Institute and State University, 1991).

4. Participants in a 1980 Delphi study, for example, predicted that by "1990 25% of existing reference books will be available only in electronic form." Reported in F. W. Lancaster, *Libraries and Librarians in an Age of Electronics* (Arlington, Va.: Information Resources Pr., 1982), 61.

5. The classic work remains F.W. Lancaster, *Libraries and Librarians in an Age of Electronics*. For a more recent discussion by Lancaster, see his "Electronic Publishing" in *Library Trends* 37 (1989): 316–25. For a recent critique of Lancaster's position, see Svend Larsen, "The Idea of an Electronic Library: A Critical Essay," *Libri* 38 (1988): 159–77. For a summary of different perspectives in the published literature, see Meredith Butler, "Electronic Publishing and Its Impact on Libraries: A Literature Review," *Library Resources & Technical Services* 28 (1984): 41–58. For a selected bibliography on electronic publishing, see Barbara M. Robinson, "Managing Change and Sending Signals in the Marketplace," *Library Acquisitions: Practice & Theory* 13 (1989): 223–25. The best recent overview is certainly David W. Lewis, "Inventing the Electronic Library," *College & Research Libraries* 49 (1988): 291–304.

6. Ross Atkinson, "Old Forms, New Forms: The Challenge of Collection Development," *College & Research Libraries* 50 (1989): 514–15.

7. For a very recent example of such a call to publish more online, see N. David Mermin, "Publishing in Computopia," *Physics Today*, 44 (May 1991): 9–11.

8. See Brian J. Perry, "The Impact of Electronic Publishing on Library Collection and Services," *IFLA Journal* 14 (1988): 129.

9. See Lewis, "Inventing the Electronic Library," 296: "Disciplines where the results of research can be separated from the reporting of results will find the transition easier than disciplines where a large part of the scholarly task is the expression of understanding. A biochemist receives a Nobel Prize for work done in the lab, but a historian will receive a Bancroft, not for work in an archive, but only for a book." See also Eric Wainwright, "The University, Its Library, and the Information Age," *Australian Academic & Research Libraries* 16 (1985): 75.

10. Michael Gorman would disagree. See his view on the future of the monograph in his "The Academic Library in the Year 2001: Dream or Nightmare or Something in Between?" *Journal of Academic Librarianship* 17 (1991): 7.

11. See, for example, Edwin Brownrigg, Clifford Lynch, and Mary Engle, "Technical Services in the Age of Electronic Publishing," *Library Resources & Technical Services* 28 (1984): 67. More recently, see Peter S. Graham, "Electronic Information and Research Library Technical Services," *College & Research Libraries* 51 (1990): 249. The Coalition for Networked Information has established the Working Group on Non-Commercial Publishing, which is considering among other things how institutions can be assisted in undertaking more electronic publishing.

12. See Patricia Ohl Rice, "From Acquisitions to Access," *Library Acquisitions: Practice & Theory* 14 (1990): 18–19. See also Eldred Smith's idea of a centralized "electronic collection" for the use of all research libraries in his "Resolving the Acquisitions Dilemma: Into the Electronic Information Environment," *College & Research Libraries* 52 (1991): 236.

13. See Clyde Hendrick's "The University Library in the Twenty-first Century" (*College & Research Libraries* 47 [1986]: 128) in which he divides the user's task in the coming online age into two parts: (a) mastery of the physical means of getting at the information, and (b) mastery of the conceptual systems for the organization of the library's store of knowledge. See also Gorman, "The Academic Library in the Year 2001," 6: "The purpose of libraries is, and always has been, twofold: (1) to acquire, store, disseminate, and allow access to carriers of knowledge and information in all forms, and (2) to provide services based on those carriers of knowledge and information. The fact that there are now new carriers and new technologies ('twas ever thus) has not changed that enduring purpose one whit."

14. Gordon B. Neavill, "Electronic Publishing, Libraries, and the Survival of Information, " *Library Resources & Technical Services* 28 (1984): 76.

15. See Carolyn J. Mooney, "Efforts to Cut Amount of 'Trivial' Scholarship Win New Backing from Many Academics," in the *Chronicle of Higher Education*, May 22, 1991 (p.A1, A13), and her "In 2 Years, a Million Refereed Articles, 300,000 Books, Chapters, Monographs" (on p. A14 in the same issue).

16. Deanna L. Roberts, "Needs-Led Service Not Acquisitions-Led Service in the Research Library," *Collection Building* 11, no. 1 (1991): 24–25.

17. See, for example, Forest Woody Horton, Jr.'s idea of "The Emerging Information Counselor," *Bulletin of the American Society for Information Science* 8, no. 5: 16–19 (June 1982).

18. "Interaction with the environment" is one of the seven major issues relating to the successful adaptation to change identified by G. Edward Evans in his "Research Libraries in 2010," in *Research Libraries, the Past 25 Years, the Next 25 Years: Papers for a Festschrift Honoring Le Moyne W. Anderson* ed. Taylor E. Hubbard (Boulder, Colo.: Colorado Associated Univ. Pr., 1986), 77–94.

19. See Martin Faigel, "The Library as Marketplace in a Collection

Management Environment," *Library Acquisitions: Practice & Theory* 12:194 (1988). Academic libraries have so far often been less than successful in influencing decision-making on technology at the institutional level. See, for example, Kenneth E. Flower, "Academic Libraries on the Periphery: How Telecommunications Policy Is Determined in Universities," *Journal of Library Administration* 8, no. 2: 93–114 (summer 1987).

Book Reviews

Edward Swanson, Editor

The Strategic Stewardship of Cultural Resources: To Preserve and Protect: Papers from the Library of Congress Symposium. Ed. By Andrea T. Merrill. Binghamton, N.Y.: Haworth Information Pr., 2003. xx, 237p. $59.95 cloth (ISBN 0-7890-2090-4); $39.95 paper (ISBN 0-7890-2091-2). Published simultaneously as *Journal of Library Administration* 38, nos. 1/2 and 3/4.

A number of symposia were organized by the Library of Congress during 2000 in order to celebrate the library's centennial, and the symposium whose papers are collected in this volume was one of a trio (the others covered National Libraries of the World and Bibliographic Control in the New Millennium) that Winston Tabb in his introduction calls "the culmination of our birthday party." These particular papers were originally published by the Library of Congress itself in 2002 but with only limited distribution, and it is valuable to have them commercially available.

The emphasis of the symposium was very much on practical preservation management. The introduction identifies the additional underlying theme of exploring possibilities for coordination and cooperation, but only James F. Williams's paper, "National Research Libraries and Protection of Resources," really addresses this in any detail. The eight thematic sections lay particular emphasis on security: "Developing Strategies for a Security Programme," "Coping with Theft, Vandalism, Deterioration and Bad Press;" on securing funding: "Building

the Budget;" and on evaluation: "Measuring Effectiveness of Preservation and Security Programs." There is the expected section on the problems of electronic sources, while the remainder cover more general management aspects: "Today's Stewardship Challenge" and "Preservation Strategies in Context," ending with the forward-looking "Innovations in Security and Preservation." Within these sections there are twenty-two papers, some fewer than five pages in length, few more than ten pages in length. All the contributors are from the United States, many of them senior and familiar names in the preservation world. Most of them write, often with refreshing frankness, about specific experiences in their own institutions. As one would expect, six of the contributors are from the Library of Congress itself.

With any work such as this, the question raised in the reviewer's mind is how many of the contributions that no doubt served to stimulate discussion during the symposium among the 200 or so participants still remain of interest to the wider information world three years later. The answer is a surprisingly large number. The conference paper format brings its irritations: often no sooner has the reader got interested in the theme than the allotted length runs out. However, many of the authors in the current volume are seasoned professionals long accustomed to this form of communication and thus able to work a great deal of both information and analysis into their allotted space. When space begins to run out, they often fall back on the useful device of raising a series of questions for the

reader to ponder. Indeed several papers, for example those by Lawrie Sowd on security at the Huntington Library and by Steven Herman on collection security at the Library of Congress, contain useful checklists of action points that can be returned to with profit. An additional drawback of conference papers—the absence of post-editing so that contributions overlap or repeat one another—can be seen as an opportunity to read and appreciate differing views on the same issue.

To this reviewer it was the emphasis on security that was particularly interesting. Jean Ashton gives a fascinating account of the consequences of extensive thefts made by one individual from Columbia University, and Nancy Cline in her "Stewardship: The Janus Factor" picks up on the same case as she discusses the problems facing libraries that want to encourage use while discouraging abuse. Lynne Chaffinch on "The FBI's Art Theft Program" may sound very specific, but there is much for librarians in other countries to draw upon. Other papers that catch the eye elsewhere in the volume are the usual thought-provoking piece from Clifford Lynch, "The Coming Crisis in Preserving Our Digital Cultural Heritage;" a clear and fair examination by Werner Gundesheimer of the views advanced by Nicholson Baker in his *New Yorker* article (to be expanded in 2001 into *Double Fold*); a brisk look at fund-raising by Nancy Gwinn; and an excellent piece by Jan Merrill-Oldham, "Taking Care: An Informed Approach to Library Preservation,"

which packs an enormous amount of good advice into its twelve pages.

In sum it is a work that can be read through in its entirety at one sitting and will prove stimulating if uneven. Most readers will also find some three or four papers that they will wish to come back to, and the whole compilation, while not an essential contribution to the preservation literature, will nevertheless stand usefully as a representation of United States attitudes towards preservation at the turn of the millennium.—*John McIlwaine (j.mcilwaine@ucl.ac.uk), University College London, England*

Cataloging Sheet Maps: The Basics. By Paige G. Andrew. New York: Haworth Information Pr., 2003. xv, 240p. $39.95 cloth (ISBN 0-7890-1482-3); $29.95 paper (ISBN 0-7890-1483-1).

Caaloging Sheet Music: Guidelines for Use with AACR2 and the MARC Format. Comp. and ed. by Lois Schultz and Sarah Shaw. Lanham, Md.: Scarecrow Pr. and Music Library Association, 2003. x, 206p. $45 paper (ISBN 0-8108-4750-7).

When the second edition of the *Anglo-American Cataloguing Rules (AAR2)* was published in 1978, the compilers intended that the rules should stand by themselves as the instructions for creating the cataloging copy and, therefore, the examples in the text purposely were kept to a minimum. The intention was that they were to be used merely for illustrative purposes. One of the mantras chanted by the early trainers in AACR2 was, "Don't catalog by example." When a question arose, the cataloger was to go to the rule itself to resolve the situation and only secondarily take into account what was shown in the example.

Almost immediately a cry rose up for more examples to further illustrate the rules, as well as to give the cataloger something to search to find a

similar situation to the one involving the item being cataloged. In some ways a cottage industry grew up to provide these examples, and I was involved in this through the manuals published by the Minnesota AACR2 Trainers. Some organizations (e.g., the Society of American Archivists) and individuals also created cataloging manuals based on particular forms of materials. These two publications, *Cataloging Sheet Maps* and *Cataloging Sheet Music,* represent two of the latest manuals dealing with cataloging special materials using AACR2.

Paige Andrew, author of *Cataloging Sheet Maps,* is well qualified to prepare such a volume. He is the map cataloger at the Pennsylvania State University Libraries at University Park and has given map cataloging workshops for many organizations. Most recently he was chair of the Cartographic Materials Core Record Task Group that created the standard for core-level bibliographic records for the Program for Cooperative Cataloging.

The volume begins with a discussion of what a map is and why we should bother to catalog sheet maps. As the author states, the "obvious short answer . . . is because the library has taken the time, effort, and expense to collect this type of information" (6). But he also expands on that answer with such reasons as knowing what a particular collection contains, collection development, and the use of these paper items as the basis for future electronic versions.

Next follows an introduction to map cataloging, including the concept of what exactly is meant by a map and how it relates to such things as insets and multiple maps on a single sheet. Included are bibliographies of essential tools for the map cataloger, as well as some additional ones that are helpful for the cataloger to have access to. Main entry for maps is discussed, together with the idea of "emanation" as it relates to corporate bodies being

chosen as main entry and some possible expressions that may indicate types of responsibility for a map.

There is a discussion of the idea of "prominence" in AACR2 (61–63), where the author quotes from rule 0.8 that when "prominently" is used it "means that a statement to which it applies must be a formal statement found in one of the prescribed sources of information," and then continues, "What is still somewhat mysterious, and at the crux of Rule 0.8, is the 'formal statement' mentioned in that passage" (61). Perhaps people try to make too much out of "formal statement." What it means merely is that the statement has to appear in isolation, not in the midst of other text. Thus "Paige G. Andrew" on the title page of this volume is a formal statement, but a statement in the preface of a volume that says something such as "This volume was written by Grace B. Whitridge, a member of the board of deacons" is not a formal statement.

The largest section of the work deals with the various areas of the description, giving examples of how to record types of information in it. There are helpful discussions on determining scale, measuring maps, and other aspects of physical description, among other topics. Information about the MARC format is included in the discussions about each of the areas.

Finally there are chapters dealing with the Library of Congress Classification G schedule and the construction of call numbers based on it, subject access to maps, types of added entries to be made, some special considerations for historical maps, and special formats and conditions. The volume ends with a series of exercises for MARC tagging for maps, together with a bibliography.

Cataloging Sheet Music was prepared under the guidance of the Working Group on Sheet Music Cataloging Guidelines of the Music

Library Association Bibliographic Control Committee. The editors are, respectively, the head of the monographic cataloging section at the Perkins Library, Duke University, and the catalog librarian (music) at Brown University. It appears in the Music Library Association Technical Reports series.

The impetus for this particular volume was a discussion at the 1992 annual meeting of the Music Library Association to deal with this "genre of printed music with many difficulties of definitions and categorization" that "was typically either relegated to storerooms to await cataloging at some future but indeterminate date or subjected to a host of locally devised arranging and indexing schemes," unlike "scores of art music [that] were consistently the beneficiary of carefully developed cataloging rules" (ix). A working group was established that spent a number of the following years studying sheet music from the point of view of cataloging and developing guidelines for dealing with this type of material.

After a discussion of what might be meant by "sheet music," the compilers indicate that in terms of these guidelines they are dealing only with those publications that meet the definition in the sense of their physical format. This means, in general, "musical notation printed on sheets of paper that remain unattached and unbound at time of sale" (1), normally consisting of between four and ten pages. Some suggestion was made that the definition should be limited to what is known as "popular" music (i.e., music in the popular idiom), but the working group felt that would exclude some materials that properly could be considered sheet music on the basis of their physical form.

The first section deals with the description of sheet music, following the areas of AACR2 (and the International Standard Bibliographic Description [ISBD], the basis for AACR2). Appropriate general rules from chapter 1 of AACR2 are given, together with the corresponding specialized rules from chapter 5, the chapter for cataloging printed music. As appropriate, guidelines developed by the working group are incorporated to direct how the rules are to be applied specifically to sheet music.

Following this section are shorter sections dealing with access points and authority control, levels of detail in description, and the Core Bibliographic Record for Printed and Manuscript Music. Much of this information is in the form of suggestions, particularly the section dealing with access points, that the cataloger might want to consider depending upon the exact nature of the sheet music being cataloged.

Fully two-thirds of the volume is taken up with a series of examples, showing copies of the relevant pages of the item being cataloged, the description at levels one, two, and three, and the MARC coding and tagging for those descriptions. The second- and third-level descriptions also include appropriate subject headings and form and genre terms. It is helpful to be able to look at the example itself to see how what appears there is captured in the description. Users are cautioned, however, against merely looking through the descriptions to find what looks like something similar to what they are doing and merely copying that without taking the time to understand why and how the information in the description of the example was developed.

I must admit to being disappointed in one area. As a nonmusician, I have had great difficulty with the concept of the "musical presentation area" ever since it was developed in the interim between the 1978 and 1988 editions of AACR2. Every time I think I have it figured out, one of my musician friends says that I've got it wrong. I eagerly turned to that section of the book, hoping to have a clear and concise explanation, but, alas, that was not to be. In fact, even after some concentrated thought about this section, I find I am more confused than I was to begin with.

I've edited a fair number of cataloging manuals over the years, and I know how quickly users leap on errors or misapplications of the rules in them, either with a "Gotcha!" attitude or, conversely, accepting even the error as an article of faith to be followed religiously when cataloging. This makes it doubly important that the text be gone over carefully. Perhaps this is why my eye naturally stumbles over such things as "I'v" transcribed as "I'v [sic]" instead of "I'v[e]", as instructed in rule 1.0F1 (*Sheet Music,* 156–57) or adjacent supplied elements in the same area being enclosed in separate sets of brackets as "London : |b [s.n.], |c [192-?]" instead of in a single set, i.e., "London : |b [s.n., |c 192-?]" as instructed in rule 1.0C1 (*Sheet Maps,* 112). (While it doesn't affect the use of the manual, perhaps most jarring of all is the glaring typographical error on the title page of *Cataloging Sheet Music* that indicates the work was "complied" instead of "compiled".) These are minor considerations, however, and the two volumes generally are free from these errors.

I have three quibbles; none is unique to these two volumes, however. First is the use of a graphic other than the defined character "‡" to represent the subfield delimiter. Granted, when the MARC format was being developed in the 1960s, much of the work was done using a standard typewriter and it was necessary to make this substitution, the dollar sign graphic being chosen as being closest in appearance to it. But, given the printing capabilities available today, there is no reason that the correct character can't be used in works that are aimed at practicing catalogers. (And that means that we shouldn't have to accept these

substitutions by vendors on online displays, either.)

Second is the use of "AACR2R," a nonsensical term. The volume published in 1978 was called the second edition of the *Anglo-American Cataloguing Rules*, referred to as "AACR2." Each subsequent revision (1988, 1998, 2002, and the various amendments) continued to call itself the second edition of the *Anglo-American Cataloguing Rules*, and thus each is appropriately called "AACR2," which is the term used for the concept in general as well. Third is the indication that "OCLC" supposedly stands for "Online Computer Library Center." As much as people might want this to be true, it isn't. The name of the organization is "OCLC Online Computer Library Center, Inc."; "OCLC" is simply a shortened form of that full name, and it hasn't been an acronym for anything specific since the days of the "Ohio College Library Center."

Quibbles aside, both of these volumes make welcome additions to the cataloging reference shelf. Of course, the novice in cataloging music in general, or one who is cataloging recorded music as well as printed music, will want to have a work such as *Describing Music Material*[1] or *Music Cataloging*,[2] both by Richard P. Smiraglia, available as a basic source. On the other hand, someone cataloging all types of cartographic materials or an extensive collection of them will want to have access to the major work in this area, *Cartographic Materials*,[3] prepared by the Anglo-American Cataloguing Committee for Cartographic Materials. But the two volumes reviewed here are valuable both for the novice in a particular format as well as for the experienced practitioner facing an out-of-the-ordinary problem on an item being cataloged.—*Edward Swanson (swans152 @tc.umn.edu), MINITEX Library Information Network, Minneapolis, Minn.*

References

1. Richard P. Smiraglia, *Describing Music Materials: A Manual for Descriptive Cataloging of Printed and Recorded Music, Music Videos, and Archival Music Collections.* 3d ed. Lake Crystal, Minn.: Soldier Creek Press, 1997.
2. Richard P. Smiraglia, *Music Cataloging: The Bibliographic Control of Printed and Recorded Music in Libraries.* Englewood, Colo.: Libraries Unlimited, 1989.
3. Anglo-American Cataloguing Committee for Cartographic Materials, *Cartographic Materials: A Manual of Interpretation for AACR2.* 2d ed. Chicago: ALA, 2003.

Briefly Noted

Lunacy and the Arrangement of Books. By Terry Belanger. New Castle, Del.: Oak Knoll Press, 2003. 24p. $10 paper (ISBN 1-58456-099-1).

Oak Knoll Press has recently reissued this work originally published in 1982 to make it available to a new generation of readers. Terry Belanger, the author of this amusing essay, promises at the outset to reveal "a method for determining madness among book dealers, book collectors, and librarians," this being an examination of "the manner by which they arrange their books on their shelves" (1). This proposition captivated the reviewer, interested as he is in all manner of issues related to classification, and particularly with the eternal challenge of reducing an *n*-dimensional universe of document attributes to a two-dimensional array of physical objects on a shelf. Might some of our solutions reveal, not merely culture-bound or provincial perspectives, but actual insanity? (As a corollary, might insanity be curable through adopting a different classification system?)

As it turns out, your reviewer expected entirely too much. *Lunacy and the Arrangement of Books* is a compilation of humorous anecdotes centered on what are taken to be eccentric notions of which books belong together, and why. There are stories about arrangements according to color, size, and purely individual "aesthetic considerations" (6). Free-associative placement is mentioned, as in the case of the bookshop which "shelved a copy of *The Voyages of Magellan* under Yachting" (12). Elements of obsession do indeed enter into many of these anecdotes. For example, an etiquette book of 1863 forbade the shelving of books by male and female authors next to each other, "unless they happen to be married" (24). It is true, as well, that some of these obsessions have had lasting negative consequences: the Pierpont Morgan Library was denied the gift of certain important books belonging to William Morris, because the collector who made the donation got rid of every book taller than fourteen inches. But few of these eccentricities amount to madness in any sense suggesting that institutionalization is in order.

The author's meanderings through the world of people's odd relationships with books suggests a very broad notion of "arrangement." It includes internal rearrangement, as when books are torn to pieces or used so heavily that they fall apart, or even pulped. The most likely actual condition of lunacy here is that of "bibliokleptomania" (21), which involves a kind of rearrangement through theft. Other individual solutions to the problems of arrangement are worked out by indefatigable book collectors with steadily decreasing available space. Sir Thomas Phillipps was such a collector: he seemed to have steadily filled his entire house with books, so that eventually the dining room itself was unusable. At this point, the concept of arrangement gives way to more primitive question of "where to put it."

It's always a pleasure to discover personal essays such as *Lunacy and the Arrangement of Books* in the

course of one's professional reading. This little book will go on my shelf next to the other little books of anecdotes and reminiscences by librarians. It helps, of course, that publications of this sort are all more or less the same size, and their colors don't matter. Well, at least not to *me.—David Miller (dmiller@curry.edu), Curry College, Milton, Mass.*

The LCSH Century: One Hundred Years with the Library of Congress Subject Headings System. Ed. by Alva T. Stone. New York: Haworth Information Pr., 2000. 249p. $69.95 cloth (ISBN 0-7890-1168-9); $39.95 paper (ISBN 0-7890-1169-7). Published simultaneously as *Cataloging & Classification Quarterly* 29, nos. 1/2.

In 1898 the Library of Congress (LC) created its dictionary catalog, containing author, title, and subject entries in a single alphabet, replacing the author catalog and classed catalog it had used previously. The subject headings were based in part on the subject heading lists that the American Library Association had issued in 1895 and 1898, supplemented by headings needed for materials in the LC collections that were not represented in the printed lists. Four years later, with the advent of the distribution outside the Library of Congress of its printed cards, these LC subject headings began to be accepted more widely, at first throughout the United States and later in many other countries around the world in their English form or as the basis for translations into or adaptations in other languages. LC published its first list during the period 1909–1914, issued nine additional editions (some with supplements) from 1919 through 1986, and since the eleventh edition in 1988 has issued annual printed volumes. The lists also have been issued in microfiche form since 1976, as compact disks either separately or as a part of the *Cataloger's Desktop* since 1988, and in machine-readable form since 1986. (The appendix, "Chronology of Official LCSH-Related Publications," in the introductory article omits the listing for the tenth edition in 1986.)

This volume was prepared to celebrate the centenary of the first adoption of LCSH and also its adoption outside of LC. As such it is not a guide to the use of LCSH, but rather it covers the story behind it, the principles upon which it is based, and how they have changed over the years. The backgrounds of the structure of the LCSH language and its semantics are examined, as is how LCSH fits into the set of eleven principles for subject heading languages developed by the International Federation of Library Associations and Institutions' Section on Classification and Indexing, and how the basic structure of LCSH relates to and affects its use outside the boundaries of the United States.

A third section examines how LCSH works in the current online environment, particularly changes that have been made and still need to be made to it in order for it to work well in such an environment. This includes such things as how its precoordinate structure affects filing and display, as well as the ability to authenticate headings using machine methods and what this means for authority control.

The next two sections address specific questions, such as teaching LCSH, its use for musical works, its use in periodical indexing, how cooperative programs like the Subject Authority Cooperative Project (SACO) can be used to improve its coverage, its use to provide access to forms and genres of materials, and how it fits into the international library scene, both by itself in English or translation as well as its use in complement with another subject-heading scheme such as the French system for indexing called RAMEAU and the German-language system SWD. The final chapter looks at what LCSH can be and should be in its second hundred years and beyond.

As mentioned earlier, one would not go to this volume for guidance on how to apply LCSH. But it can be looked upon as a good source for information about the structure of the system, how it developed, and what role it may play in the future.— *Edward Swanson (swans152@tc.umn.edu), MINITEX Library Information Network, Minneapolis, Minn.*

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