The FRBR Model as Applied to Continuing Resources
   Ed Jones

Scripts, Languages, and Authority Control
   Joan M. Aliprand

Supply and Demand for Catalogers
   Joan M. Leysen and Jeanne M. K. Boydston

Beyond Subject Headings
   Kayo Denda
Differences Between, Changes Within Guidelines on When to Create a New Record

Prepared by the ALCTS Cataloging and Classification Section’s Task Force on an Appendix of Major and Minor Changes

Provides guidance to the cataloger and describes what constitutes a major difference between manifestations, requiring the creation of an original record, as well as detailing major changes within a serial manifestation. Guidance is also provided regarding minor changes that would not require a new bibliographic record, but might necessitate updating an existing record.

Available online to ALCTS Members or order in print at www.ala.org/alcts/catalog.
EDITORIAL

Association for Library Collections & Technical Services
Annual Report 2004-2005
Carol Pitts Diedrichs

ARTICLES

The FRBR Model As Applied to Continuing Resources
Ed Jones

Scripts, Languages, and Authority Control
Joan M. Aliprand

Supply and Demand for Catalogers
Present and Future,
Joan M. Leysen and Jeanne M. K. Boydston

Beyond Subject Headings
A Structured Information Retrieval Toll
for Interdisciplinary Fields
Kayo Denda

NOTES ON OPERATIONS

Online Book Selling at the Smathers Library Bookstore
Steve B. Carrico

BOOK REVIEWS

INDEX FOR VOLUME 49

INDEX TO ADVERTISERS
In July 2004, the Library Resources & Technical Services (LRTS) editorial board increased to fifteen members, plus the book review editor and the editor of ALCTS Newsletter Online. This allowed me to rely almost completely on the editorial board members to review the papers submitted to LRTS. Though the members of the editorial board are listed in every issue, I want to thank them in this issue by name for their service to the board and as reviewers. In addition, I want to thank two individuals who stepped in to review papers when the submissions exceeded the capacity of the board. They are Stephen Hearn, University of Minnesota, and Sheila S. Intner, Professor Emerita, Simmons GSLIS at Mount Holyoke College, South Hadley, Massachusetts.

Board members during 2004–2005 are listed below, along with the terms of their appointments and their representative roles:

- Kathleen R. Brown (Member—2003–2005) (going off the board)
- Lynn S. Connaway (Member—2003–2005) (going off the board)
- Tschera Harkness Connell (Member—2003–2006)
- Karla L. Hahn (Member—2003–2006)
- Sara C. Heitshu (Member—2003–2006)
- Bonnie MacEwan (Member—2003–2006)
- Jack Montgomery (Member—2003–2005) (going off the board)
- Pat G. Riva (Member—2003–2006)
- Diane Vizine-Goetz (Member—2003–2006)
- Christina Bellinger (CRG Representative—2003–2005)
- Sue Kellerman (PARS Representative—2003–2005)
- Norman S. Medeiros (CCS Representative—2003–2005)
- Carolynne Myall (SS Representative—2003–2006)
- Miriam W. Palm (ALCTS Newsletter Online Editor—2003–2005)
- Christine Squires Taylor (ALCTS Staff Liaison—2005–2008)

LRTS received forty-seven submissions in the last eighteen months. Twenty-four papers were accepted for publication. Some of these are in queue to be published in future issues, and some were accepted pending requested revision. No papers have been accepted without some revision by the authors; some papers have required more extensive revision. Board members and I work closely with authors to develop and publish papers of the highest quality. I encourage authors interested in publishing in LRTS to read the guidelines for authors on the LRTS Web site (www.ala.org/aclts/lrts) and to contact me with questions.
The most widely used cataloging documentation resources in an integrated, online system—now accessible anywhere you have a Web connection. Incomparable ease and cataloging convenience. Look up a rule in AACR2 and then quickly and easily consult the rule’s LC Rule Interpretation (LCRI).

In addition to the dozens of cataloging publications and metadata resource links you’ll also find the complete set of MARC 21 documentation.

For the complete list of Cataloger’s Desktop resources & features visit www.loc.gov/cds/desktop

“Cataloger’s Desktop has become an indispensable tool...Perhaps one of the main reasons for this is the convenience of having the cataloging rules and standards readily accessible from our own personal workstations.

Anna M. Ferris
Catalog Librarian & Assistant Professor, University of Colorado at Boulder

Free Trial Accounts & Annual Subscription Prices
Visit www.loc.gov/cds/desktop for all details.
As articulated in its strategic plan for 2001–2005, the mission of the Association for Library Collections & Technical Services (ALCTS) is to provide leadership to the library and information communities in developing principles, standards, and best practices for creating, collecting, organizing, delivering, and preserving information resources in all forms. ALCTS strives to provide this leadership through its members by fostering educational, research, and professional service opportunities. Of the many objectives included in the ALCTS strategic plan, the division focused during 2004–2005 on three: strategic planning, organization, and education.

**Strategic Planning**

With ALA very engaged in the creation of its ALA Ahead to 2010 strategic plan, ALCTS extended the time frame on its existing strategic plan through 2006. This approach will allow the division to develop its next strategic plan on the same timeline as the ALA 2010 plan. As initial steps, the division hosted a planning retreat of its leaders during the 2004 Annual Conference in Orlando. This afternoon session was facilitated by Maureen Sullivan and was informed by a survey of ALCTS leaders conducted in advance of the retreat. The survey asked three questions:

- What is ALCTS doing right that it should continue doing?
- What is ALCTS not doing well or not doing that it should be doing?
- What areas, issues, and activities should ALCTS focus on in the near future?

This survey and the planning retreat also providing the grist for our planning committee to continue development of our 2006–2011 strategic plan. Our goal is to approve the plan at the Midwinter Meeting 2006 for implementation on July 1, 2006.

in concert with ALAs advocacy plan, ALCTS has taken more active steps to represent policy issues of interest to our members. In particular, we have endorsed policy statements from partner organizations, such as the Association of Research Libraries. We anticipate increased focus on this area in the coming year.

**Organization**

At the 2004 Annual Conference in Orlando, ALCTS gave careful attention to its financial health and the need for increases in dues and subscriptions to
Library Resources & Technical Services (LRTS). It had been ten years since the last increase in ALCTS dues. Despite intensive efforts to contain costs, we had reached a point where existing services and products would begin to suffer without additional support. The ALCTS board, therefore, determined that an increase in dues was required to ensure ALCTS’s health and continued development. After more than three years of strategic and tactical planning experience, our plans and services for members were well-formed and in high demand. For example, our venture into Web-based continuing education has been highly successful, with waiting lists for each offering. In order to develop new courses, additional development funds were needed. Once new content is developed, staff support for technology and the instructors is needed. These are the sorts of high-quality member services we wish to maintain and expand. At the Orlando Conference, the ALCTS board approved increases (see table 1) to become effective September 1, 2004. Personal members of ALCTS continue to receive their LRTS subscription as part of their membership fee.

Table 1. Rate increases

<table>
<thead>
<tr>
<th>Membership dues ($)</th>
<th>From</th>
<th>To</th>
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<tbody>
<tr>
<td>Personal</td>
<td>45</td>
<td>55</td>
</tr>
<tr>
<td>Institutional</td>
<td>55</td>
<td>65</td>
</tr>
<tr>
<td>Support staff</td>
<td>new category</td>
<td>25</td>
</tr>
<tr>
<td>Student</td>
<td>15</td>
<td>15</td>
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</tbody>
</table>

<table>
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<tr>
<th>LRTS Subscription fees for nonmembers ($)</th>
<th>From</th>
<th>To</th>
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<tbody>
<tr>
<td>U.S.</td>
<td>55</td>
<td>75</td>
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<tr>
<td>Foreign</td>
<td>65</td>
<td>85</td>
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</table>

Education

Continuing education is a key service provided by ALCTS for its membership. Success in this arena has spanned the spectrum of regional institutes, preconferences, conference programs, and Web-based fundamentals courses. The delivery of continuing education must evolve and be re-imagined on a regular basis. The financial success of this program is fundamental to the health of the division.

Beginning in 2005, ALCTS adopted a new concept for preconferences. They continue to span the two days before the beginning of the ALA Conference, usually Thursday and Friday. These days are now broken into four segments: Thursday morning, Thursday afternoon, Friday morning, and Friday afternoon. Individual attendees continue to pursue a full day of content, but they can now pick and choose among the four offerings. For example, one individual might be interested in the segments running on Thursday afternoon and Friday morning. Another individual might prefer Thursday afternoon and Friday afternoon, leaving them free to attend a committee meeting on Friday morning. This new approach has proven successful and provided considerable flexibility for division members.

Building on the sustained success of the fundamentals of acquisitions Web-based course, active work by our education committee and individual division sections has resulted in plans for new content in the “Fundamentals of . . .” series of Web-based courses. Watch for the Advanced Fundamentals of Acquisitions, Fundamentals of Collection Development, and more in the coming months.

ALCTS’ Council on Regional Groups (CRG), one of six sections within ALCTS, is a unique entity. It is composed of members who are actively involved in regional groups in the area of technical services and collections. Over the past year, CRG’s role in the division has been enhanced, including the creation of a Continuing Education Committee. This committee will enhance the division’s efforts in providing regional training opportunities in concert with these affiliated groups.
The FRBR Model As Applied to Continuing Resources

Ed Jones

The promulgation of the entity-analysis model set forth in Functional Requirements for Bibliographic Records (FRBR) has led to its experimental application to a variety of collections of existing bibliographic records. Records for continuing resources (CR) have been deliberately excluded from these applications due to perceived difficulties in applying the model. These difficulties derive from a variety of sources: the imprecision of the more abstract FRBR Group 1 entities (work and expression), divergent definitions of two concepts central to bibliographic records—the work and authorship—when applied to continuing resources, and the relative merits of various mechanisms (e.g., main entries, MARC 21 linking entry fields) available for collocating records for CR. Additionally, because a particular library may own a single CR work as a sequence (overlapping or otherwise) of partially complete manifestations, the Group 1 hierarchy of the FRBR model tends to be inefficient for presenting these holdings to the user in a concise manner.

On September 5, 1997, at the International Federation of Library Associations (IFLA) conference in New Delhi, the Standing Committee of the Section on Cataloguing approved the final report of the IFLA Study Group on the Functional Requirements for Bibliographic Records. The report, commonly referred to by its acronym FRBR, was published the following year.1

A rudimentary understanding of the model that underlies FRBR is helpful in appreciating the discussion that follows. FRBR employs an entity-analysis model that describes various entities (bibliographic resources, persons and corporate bodies, and subjects), their attributes (characteristics), and their relationships with other entities. In particular, FRBR posits that bibliographic resources (Group 1 entities) exist at four levels of abstraction:

- **items** (individual copies);
- **manifestations** (the totality of items that together constitute a single publication);
- **expressions** (the totality of manifestations that are expressed in a common notation (alpha-numeric, musical, sound, image, and so on) but may have been issued by different publishers at different times); and
- **works** (the totality of expressions that are commonly held to represent the same essential intellectual or artistic content).

FRBR does not explicitly distinguish expressions from works, noting that the conceptual boundary between these entities is culturally determined. One cataloging code may place the boundary at one location, while another places it elsewhere. Nevertheless, because examples are essential to an understanding of a conceptual model such as FRBR, the IFLA study provisionally categorizes certain
modifications of works as expressions and others as new works. This vague line of demarcation between expressions and works must be borne in mind when this paper discusses the degree to which continuing resources (CR) fit into the FRBR conceptual model. The discussion will be drawing to a certain extent from these FRBR working definitions and examples and from the Anglo-American “cultural context” as expressed in the Anglo-American Cataloguing Rules.

The four FRBR Group 1 entities, like all FRBR entities, have attributes (e.g., items may have shelf locations and barcodes, manifestations may have ISBNs and prices). They also have relationships with other entities. For example, they may relate to other bibliographic resources (Group 1 entities) at various levels of abstraction: work, expression, manifestation, item. They may also relate to persons and corporate bodies (Group 2 entities) that may be involved with those resources at those levels (for example, a publisher involved at the manifestation level, an illustrator involved at the expression level). This is another area where concern arises that CR may not fit well into the FRBR model, both because of the multiplicity of relationships in which such resources may be involved and because these relationships may obtain at multiple levels within the Group 1 hierarchy.

These concerns are not new, nor are they restricted to CR. Interest in FRBR has long been intense and has led to the examination of existing cataloging codes and communication formats for conformity with the FRBR model and experimentation in applying the model to collections of existing bibliographic records. The purpose of the former activity has been to determine how well existing cataloging codes map to FRBR and vice versa, and how much those codes (or FRBR) may needed to be modified to make the mapping cleaner. The purpose of the latter activity has been to determine how much records created according to existing (pre-FRBR) national bibliographic standards can be restructured to conform to the FRBR model and produce user displays that take advantage of that model. These latter experiments have been for the most part restricted to literary and musical works by voluminous authors and composers, works that derive the greatest benefit from application of the model. The results of these experiments have been promising.4

Continuing resources have been conspicuously absent from these early experiments, primarily because they have proved to be problematic. At the level of the more abstract FRBR Group 1 entities—works and expressions—bibliographic records for CR tend to be fairly straightforward and so produce relatively modest returns from the application of the FRBR model. On the other hand, at the expression and manifestation levels bibliographic records for CR tend to be very complex. The multiplicity of relationships in which CR are involved—epitomized by the array of MARC linking entry fields—and the multiplicity of carriers for identical or near-identical content tend to wreak havoc on the FRBR model. In part, this is just the newest incarnation of what used to be called the multiple versions or format variation problem, long the bane of serials catalogers. But it may also say something about the nature of CR. The reluctance to include bibliographic records for CR in early FRBR-ization experiments implies that further work may be needed to better integrate CR into the FRBR model.

In May 2002, the Cooperative Online Serials (CONSER) program, an international cooperative serials cataloging program, formed a task group on FRBR and Continuing Resources to address this need, and in 2003 the IFLA FRBR Review Group formed an analogous Working Group on Continuing Resources. The CONSER task group has so far produced some preliminary recommendations and observations and has forwarded these to the FRBR Review Group, which in turn has forwarded them to its working group on CR. The IFLA working group is in the process of establishing itself and gathering documentation. In the end it will be the IFLA working group, informed by contributions from the community at large, that will determine what concrete measures, if any, will be necessary to integrate CR into the FRBR model. While leaving CR out of the model altogether is conceivable, imaging this as a desirable outcome is difficult.

The remainder of this paper examines major areas of concern in applying the FRBR model to CR in an Anglo-American context. It may be possible to address these concerns by revising the FRBR model and the international standards that it draws on or by revising AACR2 and MARC 21, or both. The concerns can be categorized as follows: (1) the nature of the work in FRBR and Anglo-American cataloging; (2) the hierarchies used for expressing bibliographic resources; (3) the level of abstraction at which bibliographic resources are described; and (4) the varying techniques for expressing relationships among bibliographic resources. Each of these is examined in turn.

Two Kinds of Work

The serial work is problematic, to say the least. Over the past century, serials have been the object of a succession of seemingly contradictory cataloging conventions that have attempted to define the serial work, either implicitly or explicitly. Each of these conventions, viewed in its own context, can be seen as a pragmatic response to the nature of the contemporary library catalog and so consistent with that context. Within that context, they also define the boundaries of the serial work.

Prior to the twentieth century and the widespread use of catalog cards in libraries, book catalogs were the norm. The physical constraints of the book form determined the
mechanisms for making and amending entries in these catalogs. An entry was typically made for a serial under the title it had when it first entered the library, with sufficient space left under the entry to accommodate a description of its subsequent history. References were made under later titles, pointing to this earliest entry where the bibliographic history of the serial as a whole—what FRBR might call the work—was recorded. This practice worked well for book catalogs with their limited space and limited ability to predict where growth might occur, and it favored an expansive definition of the serial work.

In the early twentieth century, the book catalog was displaced by the more flexible card catalog. With the advent of card catalogs, the physical constraint that had encouraged earliest-entry cataloging ceased to apply. Now if a title changed, the library could replace the old card set with an updated set under the new title with references (or added entries) for earlier titles. The bibliographic history of the serial was still collected in one place, but now under the current (latest) entry rather than the earliest. While the main entry had shifted from earliest to latest, the expansive definition of the serial work continued.

However, latest-entry cataloging rules that consolidated serial entries under the most recent entry had consequences not just for serials. On the same principle, publications of corporate bodies were collected under the most recent name of the body, and books in monographic series were collected under the most recent title of the series. Changes to the name of a corporate body or the title of a series often triggered the revision of vast numbers of catalog cards. As catalogs, especially those of major research libraries, became larger, the amount of work required to maintain this regimen became unsupportable.

In 1961, a solution arrived in the Statement of Principles adopted by the International Conference on Cataloguing Principles in Paris (the Paris Principles) that introduced in point 11.5 a new convention, now known as successive-entry cataloging. When a serial’s title changed—unless the change was minor or short-lived—the existing entry was closed and a new entry was opened under the new title. A similar provision was made for changes to corporate names in point 9.4.5. Successive-entry cataloging is the principle currently in force in the Anglo-American cataloging community. The proposed successor to the Paris Principles currently under review, the draft “Statement of International Cataloguing Principles,” contains no analogous point, though it accomplishes the same purpose in its point 4.1 where it incorporates by reference the International Standard Bibliographic Description.

Successive-entry cataloging was incorporated into the Anglo-American Cataloguing Rules (AACR1) in 1967. Successive-entry cataloging was adopted by the Library of Congress in 1971 and by the CONSER project (for current cataloging) at its inception in 1975. The convention was strengthened when it was adopted by the International Serials Data System, the precursor of today’s International Standard Serials Number (ISSN) Network, as the basis for assigning an ISSN to a serial. Finally, its international position was solidified when it was included in the first International Standard Bibliographic Description for Serials (ISBD[S]) as the trigger for creating a new bibliographic description. Good reasons for moving to successive-entry cataloging existed, though some resistance was also present (as evidenced by the Library of Congress’s four-year delay in implementing the relevant rule from AACR1). Eventually, as before, the form of the catalog impelled the community towards a pragmatic solution. But in the move from latest- to successive-entry cataloging, the de facto definition of the serial work changed from that which had underlain earliest- and latest-entry cataloging (and continued to apply to nonserial multipart items). Under the new convention, a change in the title or main entry heading now signaled not just a revision of the existing record to accommodate the change, but the closing of the existing record and creation of a new one.

The adoption of AACR2 in 1981 brought two major changes in serials cataloging, the combined effect of which was to modify the practice, if not the principle, of successive-entry cataloging. First, entry under corporate name was restricted under the new code, leading to an increase in entry under comparatively unstable generic titles (e.g., Report, Bulletin, Journal). Second, the basis of the bibliographic description shifted from the latest issue received to the earliest issue received. These two changes led in turn to an increase in the classes of title change considered minor under AACR2. This was done to minimize recataloging due to such minor changes, but an unintended consequence was that, for this class of serials at least, catalogers began employing a form of earliest-entry cataloging, entailing a more expansive de facto definition of a serial work.

To complete the circle, with the 2002 revision of AACR2, catalogers also have begun employing latest-entry cataloging for the growing subset of CR known as integrating resources. While the goal in all these cases has been to save the time of the user and avoid unnecessary cataloging, the different practices can lead to confusion for the uninitiated.

As noted above, one can view pre- and post-Paris cataloging codes as applying different definitions of a serial work. Before 1961, the definition was based on a perceived integrity of content, which typically was reflected in a continuity of issue numbering. Changes of title or issuing body were treated as secondary events. Serial works were treated like nonserial works, and their definition corresponded to FRBR’s “distinct intellectual or artistic creation.”

With point 11.5 of the Paris Principles, this changed. Catalog codes and standards, at both the national and international levels, began to apply de facto different...
definitions of work to serials and other bibliographic resources, a dichotomy that continues to this day.

In this dichotomy, the definition of work for nonserial bibliographic resources, including integrating resources (IR), corresponds to the FRBR definition. For serials, however, the definition of work is based on the persistence of a physical mark—the title proper (allowing for minor variations in that mark). Cohesion or integrity of content—certainly implied in FRBR’s “distinct intellectual or artistic creation”—is relegated to a secondary role, demarcated by title changes that do not qualify as minor. This difference in the definition of work is present by implication in FRBR because it is present in two of FRBR’s source documents: the Paris Principles and ISBD(CR), both of which define serial extent in terms of the title proper. But this is not stated explicitly in FRBR, which as noted defines a work simply as a “distinct intellectual or artistic creation.” FRBR elaborates this definition by casting it in terms of the framework of Group 1 entities:

A work is an abstract entity; there is no single material object one can point to as the work. We recognize the work through individual realizations or expressions of the work, but the work itself exists only in the commonality of content between and among the various expressions of the work.15

The key point here is that the work is described in terms of content, not in terms of a physical mark on a manifestation. The work shares content with its expressions and manifestations; it does not necessarily share a title proper.

In AACR2, the term work is used throughout part 2 of the code (the part devoted to access points) and throughout the glossary, but it is never defined. Although AACR2 has gone through substantial revision and amendment over the past twenty-five years, a definition of work is only now being proposed for inclusion (along with the other FRBR Group 1 entities), as part of the revised edition projected for publication in 2008.16 But despite the absence of a definition of work from the AARC2 glossary, a working definition can be extracted from the use of the term throughout the code, and, at least for nonserial bibliographic resources, it seems to approximate the FRBR definition.

One reason a certain uneasiness overcomes catalogers of CR when confronted with the FRBR definition of work is that they know that they make no judgment about distinct intellectual or artistic creations when determining when to create a new catalog record. They are bound by rules separate from those applied by their monographic colleagues.

The rules for choice of entry for CR have, at least since point 11.5 of the Paris Principles, been bound up in the rules for bibliographic description. The ISBD(S) and now the ISBD(CR) are unique among ISBDs in that they deal not just with bibliographic description but also with the conditions that determine when a new description should be created. As noted earlier, these conditions relate exclusively to the form of the title proper.17

Differing definitions of work have practical consequences when attempting to apply the FRBR model to CR (or accommodate CR within the FRBR model). To illustrate, the examples in figures 1 through 4 are drawn from the CONSER database. They were chosen because they are typical of the problems they exemplify, and they present these problems in their simplest forms.

The first case (see figure 1) concerns the Russian journal Математический сборник, which has been published under that title since 1866 (with a brief hiatus for the Russian civil war). In 1967, the American Mathematical Society (AMS) began translating this journal and publishing the translation under the title Mathematics of the USSR. Sbornik. In 1991, the USSR ceased to exist and, in 1993, the AMS changed the title of the translation to take this into account.

This example presents two major discrepancies: (1) the title of the translation (an expression for purposes of the FRBR study) changes while the title of the CR in the original language remains the same; and (2) the translation begins a century after the publication in the original language and so does not represent the complete original. This is not uncommon with translations of serials. The former discrepancy also may occur in reverse, where the title of the original publication changes, but that of the translation does not. These two discrepancies imply a need to explicitly identify expressions and manifestations that incompletely correspond to the entity at the next level of abstraction, whether because of an asynchronous title change or because of incomplete correspondence in coverage. Changes in the title proper may or may not determine the boundaries of a work, depending on the circumstances. At present, catalogers create a new bibliographic record when the title of a serial changes, whether or not it is the title of a translation. In the FRBR model, with its commonality of content between expressions and works, this may cause problems and will at least require a mechanism of some sort—perhaps an extent element in uniform titles—to bridge the gap when different expressions have different extents in relation to the same work.

For the present, CONSER practice in such cases is to create a linking-entry citation that is a combination of the uniform title with the title proper of the related title.18 This

| Figure 1. Title changes in one expression but not another |
|---|---|
| **Original publication** | **Translation** |
| Математический сборник | Mathematics of the USSR. Sbornik |
| (1866-        ) | (1967-1993) |
| | Sbornik. Mathematics |
| | (1993-        ) |
accomplishes the goal of differentiating citations for the two expressions, but at some cost in terms of MARC coding. For example, the citation in the CONSER database to the latter expression is:

[785]$a$Matematicheskii sbornik. $p$English. $s$Sbornik. Mathematics.\textsuperscript{10}

This citation is highly structured in the target record, with each element separately coded:


However, in the record of origin the whole text resides in a single subfield $t$ in a linking entry field. To function effectively as a relationship in a FRBR environment, the same amount of structure would be desirable in both records. A more succinct form of citation, which obviates the need for including the title proper as well as the uniform title, likewise might be desirable.

In the next example (figure 2), the editorial content of two print editions with a regional focus differs somewhat from that of the original print edition. The editorial content of the online version corresponds to the combined editorial content of all the print editions, with some additional online-only content. This is a case of a part being greater than (or as great as) the whole.

To varying degrees, the advertising content and much structured content (e.g., financial tables, weather) differs among all editions and versions of a publication of this type, and may ultimately disappear entirely from the online edition. This sort of content would typically be excluded from consideration in determining whether multiple expressions realize a common work. The determination would be based instead on the editorial content common to all editions. However, in this case, one expression—the online expression—contains all the editorial content of the other expressions. This is another case of incompleteness. The online version is de facto complete in its editorial content, while the regional editions, including the flagship London edition, are not. Catalogers are used to seeing this situation in the case of metropolitan newspapers that also publish abbreviated national editions. The case of FT.com is likely to be the future norm for this type of publication as they migrate online: an online expression that is more complete than any single print expression.

The migration of a publication online may also create problems in terms of the definition of the work, in that online expressions may shed earlier titles borne by their print analogs. An example can be seen in Online Reference Review, previously Online & CD-ROM Review. All mention of the earlier title (and ISSN) has disappeared from the online version at the publisher’s Web site, and the corresponding earlier issues have been subsumed under the later title.\textsuperscript{20} In doing this, the publisher has made a de facto determination that no significant change in content was signaled by the change in title, and the current title can encompass it all. For the user, the earlier title can be found only as an artifact on the PDF page images of individual articles from those issues, where it appears as a running title at the bottom of the images. This retroactive retitling by the publisher creates a certain incentive to consider latest-entry cataloging in these cases, if only to prepare the user for an online version that will be found under a different title than the one expected. But such a solution would create inter-expression problems such as was experienced in the case of Математический сборник, multiple partial print expressions would correspond to a single complete online expression. The effect this would have on FRBR-driven catalog displays is unclear. Currently in these cases, a CONSER library creates a catalog record for the online version of the earlier title, sometimes derived from the record for the corresponding print version, even though the user will not find that title mentioned anywhere on the Web site.

The next example is drawn from FRBR itself (figure 3).\textsuperscript{21} The example is very straightforward and, to that extent, might be considered very unserial-like.

The Group 1 entities parade out two by two, with a pleasing order—a work with two expressions, each with two manifestations—and one can readily see how with FRBR everything falls into place. But anyone familiar with the bibliographic history of the Wall Street Journal may be puzzled, because left out of the FRBR example is the curious incident of the Midwest edition. As with the

<table>
<thead>
<tr>
<th>Original publication</th>
<th>Editions and versions</th>
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</thead>
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<tr>
<td>Financial times (London) published 1888-</td>
<td>Financial times (Frankfurt) published 1979-</td>
</tr>
<tr>
<td>Financial times (New York) published 1985-</td>
<td>Financial times (New York) published 1985-</td>
</tr>
<tr>
<td>FT.com [online] published 1996-</td>
<td></td>
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</tbody>
</table>

Figure 2. Differences in text for various expressions

<table>
<thead>
<tr>
<th>w₁ The Wall Street Journal</th>
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<tbody>
<tr>
<td>e₁ the Eastern edition</td>
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<tr>
<td>m₁ the print format of the Eastern edition</td>
</tr>
<tr>
<td>m₂ the microfilm of the Eastern edition</td>
</tr>
<tr>
<td>e₂ the Western edition</td>
</tr>
<tr>
<td>m₁ the print format of the Western edition</td>
</tr>
<tr>
<td>m₂ the microfilm of the Western edition</td>
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</table>

Figure 3. Serial example from FRBR
Russian translation journal, this is a case of the title of an *expression* changing while the title of the *work* remains constant, but it is more complex than it first appears.

The Midwest edition of the *Wall Street Journal* was published from 1951 to 1996 and for most of its first year was called the Chicago Journal of Commerce edition rather than the Midwest edition. Prior to that, it was the *Chicago Journal of Commerce and La Salle Street Journal*, a separate publication having no relationship whatsoever to the *Wall Street Journal*. In 1996, the Midwest edition merged with the Southwest edition to become the Central edition.

In the CONSER database, the Midwest and Chicago Journal of Commerce editions are treated as a single *manifestation* with Chicago Journal of Commerce ed. in the edition statement and “Midwest ed.” in the uniform title. A Library of Congress Rule Interpretation (LCRI) mandates combining these successive editions into a single bibliographic record on the basis that no change in scope is implied in the changed name of the edition. The LCRI instructs the cataloger to determine the boundaries of the *work* on the basis of content rather than physical mark (in this case, the edition statement), though the physical mark serves as the basis of this determination. This imperfect relationship between physical marks and content is characteristic of the current approach to defining serial *works*, both in AACR2 and in the related international standards.

The expanded hierarchy in figure 4 shows the difficulties introduced to displays by changes that occur at one level of abstraction and are not mirrored at higher levels. Additionally, it presents a potential conundrum where one serial is continued by an edition of another serial.

In terms of the FRBR model such changes can create something of a muddle, especially when title changes and mergers occur at the *expression* level but not at the *work* level. In figure 4, title changes are signaled by decimal numbering and mergers by combined numbering.

The display in figure 4 also shows the difficulties in identifying a collection of entities at one level that correspond to a single entity at a higher level (in this case the Midwest edition and its predecessors). This question has no answer, but the condition can occur even at the highest level of abstraction, when different entry conventions (earliest-entry versus latest-entry versus successive-entry) may result in different *works* identified for the same content. Rosenberg and Hillman have suggested that squaring this circle of entry conventions may be possible through the introduction of a “super-*work*.” This super-*work* would represent all the titles borne by a given serial during its lifetime and would link both to *work* records for the individual titles and to publication history records providing a complete accounting of the issues or other component parts. While Rosenberg and Hillman do not propose what title, if any, would be borne by the super-*work* itself, use studies suggest that current issues, bearing the latest title, would be the ones most frequently sought by users. While such a solution might solve some problems, it also would complicate the cataloger’s task by defining two sets of *work* boundaries: one—presumably based on the FRBR definition of a “distinct intellectual or artistic creation”—for the super-*work*, and a narrower one—presumably based on current practice—for the component *works*.

Up to now, this paper has been treating traditional serials: publications made up of sequential issues made up in turn of articles by various authors. Delsey and Riva point out separately that such serial *works* are “aggregate *works*”; that is, they are *works* composed of other *works*: the physical issue (itself an aggregate *work*) and the individual contributions within the issue (component *works*).

Aggregate *works* have characteristics that make them particularly amenable to serial treatment: a common title, availability by subscription, and discrete component parts that can be checked in. Other classes of serials—those that in their online version are susceptible to become integrating resources—are more akin to the *works* represented by frequently revised *expressions* in the FRBR model. This is true of publications that typically are represented online as databases and of publications

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**Figure 4. Elaborated FRBR example**

\[ w \]: The *Wall Street Journal\]

\[ e_1 \]: the Eastern edition  
\[ m_1 \]: the print format of the Eastern edition  
\[ m_2 \]: the microfilm of the Eastern edition

\[ e_2 \]: the Western edition  
\[ m_1 \]: the print format of the Western edition  
\[ m_2 \]: the microfilm of the Western edition

\[ e_3 \]: the Midwest edition  
\[ m_1 \]: the print format of the Midwest edition  
\[ m_2 \]: the microfilm of the Midwest edition

\[ e_4 \]: the Chicago Journal of Commerce edition  
\[ m_1 \]: the print format of the Chicago Journal of Commerce edition  
\[ m_2 \]: the microfilm of the Chicago Journal of Commerce edition

\[ e_5 \]: the Chicago Journal of Commerce and La Salle Street Journal  
\[ m_1 \]: the print format of the Chicago Journal of Commerce and La Salle Street Journal  
\[ m_2 \]: the microfilm of the Chicago Journal of Commerce and La Salle Street Journal

\[ e_6 \]: the Southwest edition  
\[ m_1 \]: the print format of the Southwest edition  
\[ m_2 \]: the microfilm of the Southwest edition

\[ e_7 \]: the Central edition  
\[ m_1 \]: the print format of the Central edition  
\[ m_2 \]: the microfilm of the Central edition

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that, in their online form, are in a state of continuous revision. This class is explored below.

Entity Hierarchy: The Dual Nature of Frequently Revised Works and Questions of Personal Authorship

When Delsey and Riva describe serial works as aggregate works, they are not describing all CR (or all serials), but rather a subset characterized by issues containing contributions by individual authors, the subset that is most often analyzed in abstracting and indexing services. Treating a bibliographic resource as a CR is usually a practical matter, a means of limiting the amount of cataloging effort without unnecessarily limiting the amount of access provided to a work. To this extent, CR treatment ignores the peculiar characteristics of the individual CR (such as whether or not it is an aggregate work) and examines only those characteristics that make it a candidate for such treatment.

One such class of nontraditional CR comprises works that undergo frequent revision. This class is very different from the traditional serial and poses its own challenges for the FRBR model. Frequently revised works pose challenges both to the preferred hierarchical structure for CR and to the notion of personal authorship as embodied in AACR2. Beyond this, such works are most likely to be transformed into integrating resources if they migrate online, because the focus of their primary market is the current information embodied in the most recent edition.

For frequently revised works, two competing FRBR hierarchical models are available, depending on whether a title receives monographic or CR treatment. For the title receiving monographic treatment, the FRBR model is one of a work and its expressions, the expressions comprising the successive editions of that work. These editions may appear in various physical media (e.g., print, CD-ROM) and may also appear dynamically online in the form of an integrating resource (a database or Web site). Because these works in their iterations share certain core content, monographic treatment of them utilizes the standard FRBR levels-of-abstraction hierarchy for bibliographic resources. However, if one selects CR treatment for the same title, one must opt for the FRBR whole-part hierarchy reserved for aggregate works.

A user requesting The World of Learning would not typically be looking for a particular edition from the past, but rather for the most up-to-date edition available and, in this sense, would be viewing The World of Learning as a single integral work. From this point of view, the various annual editions of The World of Learning are expressions, and the user wants the one that is most up-to-date. This user is the primary market for The World of Learning. A historian, however, or anyone interested in the information that was available at a particular time in the past, might view each edition of The World of Learning as distinctive in its own right—a component work, part of a larger aggregate work.

The library can adopt either treatment, depending on whether it caters to one market or the other (or both), with very different results for record structure. CR treatment would produce two expressions—a serial textual expression (that may include print and microfilm manifestations) and an IR online expression. Note that in this case the print expression would be an aggregate expression and would not strictly correspond to the IR online expression in this respect. Non-CR treatment, on the other hand, will yield multiple textual expressions—one for each successive edition. In both models, the online integrating resource is a separate expression. In the non-CR model, the online expression corresponds (roughly) to the latest print expression; in the CR model, it corresponds (roughly) to the latest component work/expression.

Typically, CONSER libraries treat these resources as CR (favoring an aggregate work structure). However, in the world of online resources, uniform application of any model for this class of resource may prove difficult.
For example, many e-book publishers treat individual editions as discrete e-books and supply edition-specific MARC records to subscribing libraries, implicitly favoring the non-CR work-expression structure (though some use the analytical model embodied in LCRI 13.3 where the issue designation is treated as a dependent part of the title proper). As a result, library catalogs increasingly may carry competing bibliographic record structures for the same bibliographic resource. Current American cataloging practice as embodied in the Library of Congress Rule Interpretations is to treat a frequently revised work as a CR or a monograph strictly on the basis of the frequency of its revision.26

Frequently revised works are generally produced under editorial direction, in which case they are entered under title proper or uniform title (or rarely under issuing body). However, some such works are the product of personal authorship, in which case AACR2 (and the Paris Principles) direct that they be entered under the heading for the author. Here the imperatives of the cataloging code (and of the Paris Principles, in general) appear to be in at least potential conflict. Applied strictly, both AACR2 and the Paris Principles imply that serials that are the product of personal authorship are entered under the heading for the author. When the author changes, a new catalog record is created, regardless of whether or not the title has changed. However, point 11.5 of the Paris Principles implies that a new catalog record is created only when the title changes.

While AACR2 does not address this potential conflict, it is addressed in LCRI 21.1A2, which comes down firmly on the side of limiting as much as possible the application of personal authorship to CR (figure 7). This limitation derives from treating CR, or serials, as aggregate works: while a component work can have a personal author, the aggregate work of which it forms a part can do so only in rare circumstances.

The effects of LCRI 21.1A2 (compound ing the effects of the competing hierarchical models) can be seen clearly when looking at a frequently revised work that is also a work of personal authorship, such as Frommer’s San Diego (figures 8 and 9).

When Frommer’s San Diego is viewed as a monograph that undergoes successive revisions, it is entered under its personal author according to AACR2 rule 21.1A2. Successive editions are treated as expressions of the same underlying work. However, when the authorship changes, Frommer’s San Diego is viewed as a new work, the assumption being that a change in authorship, with no connection in the statement of responsibility to the former author, has entailed a substantial revision of content. As a result, during the period 1999 through 2004, monographic treatment would have produced three distinct print works under FRBR and AACR2 (figure 8). The online version at the Frommer’s Web site would be viewed as an expression of the latest work (and would conceivably need to migrate from work to work as the authorship of the latest edition changed).

When Frommer’s San Diego is viewed as a CR, the resulting display is quite different (figure 9). Here each print edition is a component work (or, in the example, representing an individual library catalog, a component item) and the online edition is an integrating resource corresponding to an updated version of the latest print edition.

In this case, Frommer’s San Diego is covered by the first stipulation of LCRI 21.1A2. Because differ-

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LCRI 21.1A2 (abridged)

1. Consider the entire run of a serial before entering under personal author. Do not enter under personal author if different issues “have been or are likely to be” created by different persons;
2. Enter under personal author only if the person “is so closely connected to or involved with the serial that the publication seems unlikely to continue without that person;”
3. “Always lean toward not entering a serial under the heading for a person.”

Figure 7. LCRI 21.1A2 governing entry of serials under personal author

| w: Hansen, Elizabeth: Frommer’s San Diego |
| e1: Frommer’s San Diego 1999 |
| w2 Yates, Stephanie Avnet: Frommer’s San Diego |
| e1: Frommer’s San Diego 2000 |
| e2: Frommer’s San Diego 2001 |
| e3: Frommer’s San Diego 2002 |
| e4: Frommer’s San Diego 2003 |
| w3 Swanson, David: Frommer’s San Diego |
| e1: Frommer’s San Diego 2004 [text] |
| e2: Complete Guide to San Diego [online] |

Figure 8. FRBR Group 1 hierarchies without applying LCRI 21.1A2 (monographic treatment)

1 Frommer’s San Diego
1 Frommer’s San Diego [text]
1.1 1999
1.2 2000
1.3 2001
1.4 2002
1.5 2003
1.6 2004
2 Complete Guide to San Diego [online]

Figure 9. FRBR Group 1 hierarchies applying LCRI 21.1A2
ent editions have been created by different persons, the whole aggregate work is entered under title proper. Such treatment has had unintended consequences in that serials catalogers, trained not to mention or make added entries for editors of serials, frequently apply the same practice to personal authors of serials, failing to make added entries for them or mention them in the bibliographic description.

For the FRBR model, the most important consequence of both the spare application of the principle of personal authorship to CR and the exceptional concept of the serial work is that several user objectives of FRBR (and of the Paris Principles) are undermined: the user’s ability to retrieve all the manifestations of a work, to identify the works of a given author, and to select from among these the most appropriate to his or her needs.

Entities: CONSER “Manifestation-Plus” Cataloging

Previous sections of this paper have dealt with concerns that relate to CR in general. What follows relates rather to two clearly delineated subsets of CR for which, over time, special practices have been developed within the CONSER program. These practices address very real practical difficulties that have arisen when dealing with: (1) microfilm reproductions of newspapers; and (2) serials represented by articles (complete or text-only) in online aggregations.

In discussions of FRBR and current Anglo-American cataloging practice, it is often noted that we catalog at the level of the manifestation. This is not always true. An individual CR may be held by an institution in a variety of formats that together cover the entire run of the CR but that individually cover incomplete portions of the run. Bibliographic data on the various formats may be combined in a single catalog record in order to concisely present information on the CR to the user. This constitutes a slight erosion of the practice of manifestation-level cataloging, and has occurred both within individual institutions and, to a lesser extent, within the CONSER program as a whole.

In one respect—the cataloging of microform reproductions—CONSER began experimenting with FRBR before FRBR existed, trying to come to grips with what was once known as the multiple versions problem. Today ad hoc solutions to this problem within CONSER have effectively modified manifestation-level cataloging for two subclasses of CR, though the nature of the modifications differs in each case.

The first case arose in the context of the US Newspaper Program (USNP), the cataloging aspect of which constituted a semiautonomous spin-off of the CONSER program with its own purposes and concerns. One of these concerns was the creation of a union list of historical collections of United States newspapers, regardless of format. USNP felt that their union list would best serve users if it was organized at a level in which holdings in multiple formats could be presented under a single catalog entry and holding institution. To achieve this end, the bibliographic record was made to describe the newsprint version (whether or not such a version still existed), and data elements relating to reproductions were recorded on location- and format-specific holdings records.

Looked at in FRBR terms, USNP moved some manifestation data onto the item record, which may or may not be desirable, depending on the user. If a user wants access to as complete a run in newsprint as possible, then format should take precedence over location. If speedy access to the content is paramount, then location should take precedence over format. In a union list with relatively few locations and formats, both purposes could be served by a single display.

The practical effect of USNP on the CONSER database was to suppress bibliographic information relating to reproductions, since this information is not stored in the USNP bibliographic record. This means that while United States newspapers are represented in CONSER, only one manifestation of an expression is explicitly represented: that of the original newsprint. This approach would not have been strictly possible under AACR2, were it not for the Library of Congress’s decision not to apply AACR2 chapter 11 to reproductions. By this decision, a reproduction was not described directly but rather in a note in a bibliographic description that otherwise was based on the print original. With reproduction aspects relegated to a note, moving this note and related fixed-field data from the bibliographic record to the holdings record was a relatively simple matter.

For the FRBR model, however, the USNP solution raises questions about the representation of holdings where some components are held in one format (manifestation) while others are held in one or more other formats (manifestations). Some institutions have chosen to apply this model to all their CR holdings involving microreproductions, and even to their monograph holdings. If manifestations can thus be represented in both bibliographic records and holdings records, FRBR-based systems may encounter difficulties in representing the manifestation level for these resources, at least for reproductions.

The second CONSER dispensation from manifestation-level cataloging involves online article-level aggregations of serial content. When CONSER was confronted with the growing cacophony of the Web in terms of multiple sources and formats for the same online serial content, its solution was to block out much of the noise through the use of what are called aggregator-neutral records. These records describe a single online manifestation but can explicitly include, via URLs, other manifestations representing intact serial issues such as those on publisher Web sites. However,
libraries are free to use these records for all online versions of serial, including those that do not present intact issues or even, in cases where formatting and graphics have been omitted, complete articles.

The publisher's Web site is allowed in on these terms, as well as Web hosting services such as ingenta, High Wire Press, and OCLC ECO, though the bibliographic description will typically be based on the version available at the publisher's site. Not allowed in on these terms are the content aggregators—Web sites that host abstracting and indexing data and, as a support for such data, the full text, graphics, or both, of the indexed or abstracted articles. As with the USNP, the purpose here was pragmatic. The full-text content of aggregator databases tends to be volatile, depending as it does on ongoing (and changeable) agreements with publishers, and the aggregations themselves tend to come into and go out of existence with alarming unpredictability. Additionally, because institutions typically subscribe to only a small subset of the aggregations in which the full text of a given serial may be available, CONSER felt that aggregator data would tend to clutter the catalog record and introduce maintenance costs that would be hard to justify.28

A single example demonstrates the wisdom of the aggregator-neutral record in this regard. Figure 10 represents the various manifestations of the Financial Times available from a single aggregator (Factiva) in a variety of its aggregations.

Figure 10 also illustrates that all online versions are not equal. These manifestations represent only the text from the corresponding print edition, omitting any accompanying photos, charts, and so on. Similarly, four levels of abstraction may not be optimal for display purposes. In figure 10, the online version may be more usefully presented as an expression of an expression, with the version lacking graphics as a further expression of that expression. Electronic products, with their highly structured markup languages, are susceptible of almost infinite derivation and reconfiguration.

CR thus can be seen as presenting both challenges and opportunities for the FRBR model in terms of the Group 1 entities (works, expressions, manifestations, items). Fortunately, they do not present similar challenges for the attributes of those entities. Here there is much less cause for concern with CR than with non-CR resources, because attributes such as responsible persons and agencies (illustrators, translators) are not generally involved in differentiating CR expressions.

One may argue that some attribute of a CR is more appropriate to a different Group 1 entity than the one to which it was provisionally assigned in the model, but the consequences of such a disagreement are not major.

What can be said for attributes, however, cannot be said for relationships. In the case of the relationships among Group 1 entities, the challenges for CR are similar to those presented by the entities themselves and require further elaboration.

**Relationships among Group 1 Entities**

Relationships among Group 1 entities are integral to CR, so much so that for many years the data fields used to express such relationships in MARC (fields 760 through 787) occurred only in the serials format. This relationship intensity is due in part to the highly organic nature of CR. They are born, give birth, marry, separate, die, and are sometimes born again. These various events signal what FRBR calls successor relationships. Beyond these are a multitude of supplementary and complementary relationships, as well as relationships based on identical or nearly identical content. The FRBR report used the UNIMARC format as its source for elaborating relationships among entities, but the MARC 21 format is more relevant to cataloging in the Anglo-American community. The current discussion will therefore take place in the context of MARC 21, relying to some degree on Delsey's *Functional Analysis of the MARC 21 Bibliographic and Holdings Formats* to identify the potential stumbling blocks to migrating CR records to a FRBR record structure.29

Linking entry fields were introduced to the MARC serials format in 1976, following the creation of the International Serials Data System (ISDS), the predecessor of today's ISSN Network. The fields were intended to provide a method for linking between ISDS records, using the ISSN and key title as the basis of the link. To facilitate this purpose, the structure of the linking entry fields (760–787) was made to mirror that of field 222 (key title), with the content of subfields $t$ and $c$ of fields 760–787 corresponding exactly to that of fields $a$ and $b$ of field 222 on the related record, and subfield $sx$ corresponding to subfield $sa$ of field 022 on the related record. This was the prescribed form of linking note on CONSER records through 1980 and is still the preferred

**Figure 10.** FRBR Group 1 hierarchy (in part) without applying CONSER “aggregator-neutral” cataloging policy

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**Table 1: Attributes of the Financial Times**

<table>
<thead>
<tr>
<th>m1</th>
<th>Financial Times (London)</th>
</tr>
</thead>
<tbody>
<tr>
<td>m2</td>
<td>(London edition)</td>
</tr>
<tr>
<td>m3</td>
<td>Dow Jones interactive</td>
</tr>
<tr>
<td>m4</td>
<td>(Factiva, 1980)</td>
</tr>
<tr>
<td>m5</td>
<td>(Factiva developer)</td>
</tr>
<tr>
<td>m6</td>
<td>(Factiva search module)</td>
</tr>
<tr>
<td>m7</td>
<td>(Factiva developer. Track)</td>
</tr>
<tr>
<td>m8</td>
<td>(Factiva, 1980)</td>
</tr>
<tr>
<td>m9</td>
<td>(Factiva, 1980)</td>
</tr>
<tr>
<td>m10</td>
<td>(Factiva, 1980)</td>
</tr>
<tr>
<td>m11</td>
<td>(Factiva, 1980)</td>
</tr>
<tr>
<td>m12</td>
<td>(Reuter's business briefing)</td>
</tr>
</tbody>
</table>
method of linking at the international level.\textsuperscript{30} Because North American new cataloging practice sometimes resulted in the creation of new catalog records without a corresponding change in the title or ISSN (for example, when an issuing body used as the main entry heading changed), record control subfields ($w$) were added to the linking entry fields and explicit linking entry notes were added in field 580 to facilitate record-to-record linking in these circumstances. The 580 note took the form: Continued by: [key title], [ISSN], issued by: [name heading].

With the adoption of AACR2 in 1981, the prescribed form of linking notes on CONSER records was changed to the catalog entry of the related record. In revising the MARC format to accommodate this change, the Association for Library Collections & Technical Services, the Library and Information Technology Association, and the Reference and User Services Association’s Machine-Readable Bibliographic Information (MARBI) Committee abandoned the strict subfield-level correspondence just described in favor of a structure where subfields in the linking entry fields in the records of origin corresponded to entire fields in the target records. As familiarity with AACR2 grew, CONSER practice changed further, in that a subfield $s$ was defined to accommodate uniform titles in certain circumstances, and (for cases where the related record reflected pre-AACR2 cataloging rules) a subfield $b$ was defined to accommodate edition statements (in lieu of uniform title qualifiers). While these changes resulted in a catalog in which linking entry fields could generate visually meaningful (and more user-friendly) notes, they complicated the use of the bibliographic data in the linking entry fields to facilitate machine linking. In one complication, the uniform title in field 130 was mapped to subfield $s$ of a linking entry field if it represented a translation but to subfield $t$ if it represented any other type of uniform title. Likewise, a title proper (245 subfields $a$, $n$, and $p$) was mapped to subfield $t$ of a linking entry field if no uniform title was present or if the uniform title differed from the title proper (other than by the addition of qualifying terms) but otherwise was not mapped at all.

Given these complications, machine-based linking in these fields may be facilitated by the use of the control subfields $x$ and $w$ (when present), but even these present problems. As already noted, the ISSN (subfield $x$) may apply legitimately to more than one AACR2 record (such as a printed serial and one or more microreproductions, or the same title entered under successive main entry headings). The record control number (subfield $w$), on the other hand, is not specific to any particular standard identifier scheme, and must be broken into two parts: (1) a parenthetical MARC organization code for the scheme to which the number belongs; and (2) the number itself, which must be interpreted in the context of the related scheme, which may itself be inconsistent.\textsuperscript{31} This presents problems insofar as using the linking entry fields for real-time linking. Additionally, linking entries can be used for creating FRBR structures only if the related record is present in the database, and no way exists a priori to make this determination for a particular catalog.

Linking entry fields therefore present problems by themselves as a FRBR linking mechanism, but Delsey notes that FRBR relationships are reflected in a variety of MARC fields, not just the linking entry fields:

5.1.2 Relationships between works, expressions, manifestations, and items

Work-to-work relationships are reflected in a variety of MARC data elements. Added entry fields (700–730) may contain data pertaining to a related work. Certain linking entry fields (770 and 772) are defined specifically to convey work-to-work relationships, while others (760–786), although not specifically defined as work-to-work relationships, may contain data associated with the related entity at the work level (e.g., in the form of a uniform title in subfield $t$). A number of note fields (510, 525, 555, and 556) also contain data reflecting a work-to-work relationship.

Expression-to-expression relationships may appear in added entry fields (700–730), and in certain linking entry fields (765, 767, and 775).

Manifestation-to-manifestation relationships appear in series added entries (440, 800–830), in certain note fields (530, 533, and 534), and in a number of linking entry fields (760, 762, 773, 774, and 776). Manifestation-to-manifestation relationships may also appear in added entries (700–730). Aspects of manifestation-to-manifestation relationships are also reflected in coded form in field 006/008 for serials and in field 007 for maps, globes, and computer files.

An item-to-item relationship is reflected in field 544.\textsuperscript{32}

Bibliographic data in these various field blocks have very different capabilities. Added entries (fields 700–730) provide access for related works without specifying the relationship involved. Series added entries (fields 440 and 800–830), on the other hand, invariably describe whole-part manifestation-to-manifestation relationships. The linking entry fields (fields 760–787) fall somewhere in the middle. Having been defined for a purpose other than FRBB, their correspondence to FRBR relationships tends to be serendipitous at best. MARC 21 records describe, for the most part, manifestations, but relationships in FRBR may be
assigned to various levels within the Group 1 entities. Figure 11 presents FRBR relationships.

This poses general challenges for mapping MARC 21 data to the FRBR model. If MARC 21 bibliographic records continue to describe manifestations—as seems likely and reasonable in a shared cataloging environment—should relationships at the work and expression levels be moved to authority records for those works and expressions? If so, should they be moved to authority records in all cases or only in cases where works and expressions comprise more than one manifestation? These are questions of structure that go beyond the FRBR model, but catalogs that incorporate the FRBR model will need answers to these questions, and revisions to AACR2 and MARC 21 to accommodate the FRBR model will need to provide those answers.

Beyond these general concerns are specific concerns about the precision of the correspondences between relationships described in the FRBR model and linking entry fields in the MARC 21 format. Many FRBR relationships—abridgement, revision (of the whole work), musical arrangements, complements, summarization, transformation, and imitation relationships—seldom or never apply to CR; on the other hand, those that remain—successor, supplementary, reproduction, alternate, and translation relationships—apply to them with great frequency. These latter relationships will be the focus of the remainder of this paper.

**Manifestation-to-manifestation Relationships: Reproductions and Alternates**

FRBR distinguishes reproductions from alternates, which represent the same content in an alternate format (vinyl versus CD, videocassette versus DVD) or a simultaneously released edition (by different publishers in different countries). These are extremely rare with serials of the periodical type but are more common with book-like serials. Conceivably, a computer file serial might be (or might have been) issued in different formats for different types of operating system or for different disk drive capabilities. Such alternates are not separately described in CONSER records.

In the MARC 21 format, no linking fields are specifically set aside for reproductions or alternates, though fields 775 and 776 may contain reproduction data, depending on the nature of the reproduction. Note, however, that neither field is restricted to reproductions in the FRBR sense, and may contain other types of FRBR relationship. This lack of exact correspondence between MARC 21 and the FRBR model may be ameliorated to a certain extent by the fact that reproductions presumably also can be identified for purposes of collocation in the catalog from a combination of traditional citation elements (MARC fields 1XX, 240, and 245 $a, $n, and $p) and the coding of the form of reproduction fixed field element.

The MARC 21 format does not define a separate linking field for macroreproductions (such as photocopies), and it includes microreproductions with other physical forms (e.g., CD-ROM, audiocassette, Braille) in field 776. In terms of the FRBR model, some of these other forms would be alternate manifestations while others (e.g., audiocassettes) might be parallel expressions. Again, this...
problem might be ameliorated by substituting, for col-
location purposes, a combination of citation elements and
reproduction fixed field coding. In this regard, the FRBR
subclassification of reproductions implies that additional
fixed field values will need to be defined, specifically for
facsimile and alternate formats.

Current use of field 776 is complex. While the CONSER
Editing Guide instructs catalogers to use this field to link
from records for microreproductions to the record for the
original publication, such linking is optional. Catalogers are
explicitly instructed not to make reciprocal links for micro-
reproductions except to records for preservation microfilm
master negatives (for which use of the field is manda-
tory). In records for microreproductions, the original print
publication is identified by the term “Original” in field
776 subfield $c. In records for print originals, preserva-
tion microfilm master negatives are identified by the term
“Microfilm” in field 776 subfield $c. Note that in certain
circumstances the CONSER Editing Guide allows a single
776 field to include the record control numbers of multiple
related records, producing, in terms of the FRBR model, a
one-to-many relationship in a single datafield (for example,
when a single AACR2 microform record corresponds to
multiple pre-AACR2 print records).

The MARC 21 format lumps reprints together with
“other editions” in field 775 and does not distinguish
between regular print reprints, photo-offset reprints, and
facsimiles. As FRBR points out, however, facsimiles differ
from other reproductions in that the intent is to preserve
not only the intellectual and/or artistic content, but also the
look and feel of the original. A facsimile thus addresses a
different user need from other reproductions, and should, in
future, be separately identified in catalog records. CONSER
practice is to record reprint notes in field 580, with a non-
displaying field 775 to link to the record for the original
print publication (with no reciprocal link).

Finally, while FRBR treats mirror Web sites for remote
electronic resources as separate manifestations, CONSER
practice is not to describe these separately, but to identify
them in CONSER records via multiple 856 fields on a single
record representing the remote electronic resource.

Expression-to-expression and Work-to-Work
Relationships: Translation, Successor, and Supplement

While expression-to-work relationships are described in
FRBR, these are defined as relationships between a given
expression of a work and a totally different work. No
examples of such relationships have been identified among
serials. Consequently, they are not treated here. All work-to-
work relationships—successor, supplement, complement,
summarization, adaptation, transformation, and imitation—
are also defined as expression-to-expression relationships.

Consequently, they are treated under expression-to-express-
ion relationships below.

In the MARC 21 format, the translation relationship
is recorded in the reciprocal fields 765 and 767. Because
CONSER requires that this relationship always be recorded
in these fields, the linking entry fields for translations should
operate smoothly under FRBR (bearing in mind the prob-
lem mentioned earlier relating to the inconsistent subfield-
ing of uniform title data in linking entry fields). As with
expression-to-expression and work-to-work relationships,
while the ISSN in subfield $x of fields 765 and 767 would
still be valid at the expression and work levels, the record
control numbers in subfield $w would not. Users clicking
on a FRBR-based link in a CONSER record presumably
would be taken to an expression- or work-level display of the
translation or translated title.

Succession is also a very straightforward relationship in
MARC 21, coded in fields 780 and 785, with the particular
form of succession specified by the value of the second indi-
cator of those fields. The majority of serial linking entries
represent successor relationships. As with translations, plac-
ing the successor relationship at the expression and work
level similarly breaks the manifestation-to-manifestation
connection. Again, while the ISSN in subfield $x of fields
780 and 785 would still be valid at the expression and work
levels, the record control numbers in subfield $w would
not, and users clicking on a FRBR-based link in a CONSER
record would presumably be taken to an expression- or
work-level display of the preceding or succeeding title.

The last relationship to be considered here—the sup-
plement relationship—is recorded in reciprocal MARC 21
fields 770 and 772. This is a more narrow interpretation of
supplement than that provided in FRBR, which includes
relationships in which one resource that may not call itself
supplement can nevertheless be said to supplement another.
Because of this, it includes relationships with nonserials as
well as serials, and with resources—indexes, concordances,
teacher’s guides, glosses, appendices—not always thought of
as supplements.

Fields 770 and 772 would not capture those resources
that FRBR treats as supplements but CONSER does not. In
some cases (such as cumulative indexes) the supplementary
material might routinely be recorded on the parent record.
In other cases, it might be cataloged as a monograph, with
an added entry for the resource it supplements.

CONSER practice requires that the supplement rela-
tionship be recorded on both the record for the supplement
and that for the supplemented resource. This means that
these relationships can be mapped to FRBR with relative
ease. Again, as with the other expression-to-expression and
work-to-work relationships, while the ISSN in subfield $x of
fields 770 and 772 would still be valid at the expression and
work levels, the record control numbers in subfield $w would

not, and users clicking on a FRBR-based link in a CONSER record would presumably be taken to an expression- or work-level display of the supplement/supplemented title.

Conclusion

This paper has discussed four broad areas of concern regarding continuing resources as they relate to the FRBR model. Further examination of the issues involved will be necessary before CR can be fully and economically expressed within that model (if they can be so expressed). The areas of concern are summarized and recapitulated below, along with some tentative conclusions.

First, the introduction of the FRBR model offers the opportunity to reconcile the different operational definitions of work used within the Anglo-American cataloging community, where we currently use a content-based definition for most bibliographic resources and a title-based definition for serials. While both these definitions are implicitly present in FRBR itself (because they are present in the international standards on which FRBR draws), they create contradictions within the model by leading to different boundaries for the same work at different levels of abstraction. For example, a title change may occur in one expression but not in others, or in one manifestation but not in others. While this situation can be dealt with artificially through the use of uniform titles that impose title changes on expressions and manifestations where none have occurred, a more satisfactory resolution might be the abandonment of the title-based definition of work. However, a formidable barrier to such a resolution lies in the vast store of legacy data contained in the millions of bibliographic records, both serial and monographic, created over the past thirty years—including the whole of the ISSN system—all premised upon that title-based definition.

Second, the CR class represented by frequently revised works poses a challenge to the FRBR model because this class can be represented within that model by two competing hierarchical structures and two competing citation structures. When viewed as a sequence of monographs, each edition is an expression of a single work comprising all editions. When viewed as a serial, each edition is a work (a component work) that is part of larger work (an aggregate work) comprising all editions. When revision is sufficiently frequent, serial catalogers typically apply the latter approach. In contrast, suppliers of MARC records for e-books, which tend to be marketed individually, typically apply the former approach. This can result in a schizophrenic representation of such works in the catalog. This schizophrenia is compounded by the differing rules of entry and citation applied to the two approaches. A serial approach will tend to favor citation under title proper, while a monographic approach will tend to favor citation under personal author (when applicable). This situation is already occurring in library catalogs, but the problem is brought into starker relief when expressed in terms of the FRBR model. While it may be possible to devise mappings between the two competing structures, machine-based conversion of data from one structure to the other is complicated by the different identifiers—ISBNs and ISSNs—used by the two structures to represent the same bibliographic resource.

Third, current CONSER cataloging practice recognizes levels of cataloging intermediate between the FRBR manifestation and expression levels. These are applied to microform reproductions of newspapers, which are represented by the bibliographic record for the printed newspaper, and issue-based online versions of serials, which are represented by a single bibliographic record, regardless of the number and variety of online versions. In these cases, the bibliographic record describes a single manifestation but represents multiple manifestations. Any migration to a FRBR model would require either the recognition and theoretical justification of these intermediate levels or the creation of additional manifestation records (for microforms and possibly online versions) or item records (possibly for online versions) to accommodate data for the manifestations and items currently subsumed under a single CONSER record.

Fourth and finally, the relationships currently encoded in MARC 21 serial records do not, in most cases, easily map to the relationships and multiple levels of abstraction contained in the FRBR model, though it seems that some level-of-abstraction relationships can be extrapolated from citation data and form of reproduction codes. Relationships fail to map well for several reasons: (1) the same relationship is not explicitly and exclusively defined or coded in both the MARC 21 format and the FRBR model; (2) the existence of the related serial within a given catalog cannot be deduced from its presence in a MARC 21 linking entry field; and (3) relationships at the FRBR expression and work level are typically recorded in MARC 21 records at the manifestation level. It appears that if relationships in the FRBR model are to be accommodated within MARC 21, it will require extensive modifications to the bibliographic format and, if works and expressions will utilize authority records, to the authorities format. It will also entail potentially labor-intensive re-evaluation of relationship data in existing MARC 21 bibliographic records to fit the FRBR model.

All these concerns have been presented here in a preliminary form. The profession is still at an early point in the examination, much less the application, of the FRBR model, and the model itself remains in a state of flux. While the 1997 FRBR study employs an entity-relationship conceptual model, current discussions between a working group of the FRBR Review Group and members of ICOM-CIDOC (the International Committee for Documentation
of the International Council of Museums) are investigating an object-oriented conceptual model that will differ in significant ways from the model that has been discussed above, primarily in attempting to accommodate a broader range of "cultural heritage objects" than is customarily collected by libraries. Within the Anglo-American cataloging community, work on catalog code revision aims to incorporate FRBR concepts and eliminate or restrict anomalies that do not adhere to the conceptual model. At the same time, explorations relating to an International Cataloguing Code, proceeding via a series of regional meetings, have already produced a FRBR-aware draft successor to the Paris Principles of nearly half a century ago.

In many ways, the profession is on the threshold of a brave new cataloging world with impressive possibilities. Given the work already accomplished and the work now underway, this has seemed an opportune time to address the major questions affecting the reconciliation of CR cataloging with the cataloging of other bibliographic resources within the FRBR model.

References and Notes

2. Functional Requirements for Bibliographic Records, 3.2.1.


14. Ibid.

15. Functional Requirements for Bibliographic Records, 3.2.1.


21. Functional Requirements for Bibliographic Records, example under 3.2.3.


24. See, for example, Allen Kent et al., Use of Library Materials: The University of Pittsburgh Study (New York: Dekker, 1979).
27. See, for example, Martha M. Yee, “New Perspectives on the Shared Catalog Environment,” Library Resources & Technical Services 48 (July 2004): 166.
Script, Languages, and Authority Control

Joan M. Aliprand

Library vendors’ use of Unicode is leading to library systems with multiscr ipt capability, which offers the prospect of multiscr ipt authority records. Although librarians tend to focus on Unicode in relation to non-Roman scripts, language is a more important feature of authority records than script. The concept of a catalog “locale” (of which language is one aspect) is introduced. Restrictions on the structure and content of a MARC 21 authority record are outlined, and the alternative structures for authority records containing languages written in non-Roman scripts are described.

The Unicode Standard is the universal encoding standard for all the characters used in writing the world’s languages. The availability of library systems based on Unicode offers the prospect of library records not only in all languages but also in all the scripts that a particular system supports. While such a system will be used primarily to create and provide access to bibliographic records in their actual scripts, it can also be used to create authority records for the library, perhaps for contribution to communal authority files.

A number of general design issues apply to authority records in multiple languages and scripts, design issues that affect not just the key hubs of communal authority files, but any institution or organization involved with authority control.

Multiple scripts in library systems became available in the 1980s in the Research Libraries Information Network (RLIN) with the addition of Chinese, Japanese, and Korean (CJK) capability, and in ALEPH (Israel’s research library network), which initially provided Latin and Hebrew scripts and later Arabic, Cyrillic, and Greek.

The Library of Congress continued to produce catalog cards for material in the JACKPHY (Japanese, Arabic, Chinese, Korean, Persian, Hebrew, and Yiddish) languages until all of the scripts used to write these languages were supported by an automated system. This requirement was met in 1991, when CJK ideographs, Japanese kana, Korean hangul, and Arabic and Hebrew scripts were all available on RLIN. (Arabic and Persian are both written in Arabic script; Hebrew and Yiddish are both written in Hebrew script.) The Library of Congress subsequently stopped producing catalog cards for material in the JACKPHY languages.

While non-Roman script data could have been included in authority records on RLIN, two procedural reasons prevented this:

- Unlike bibliographic records, where non-Roman data can just be ignored or discarded when it cannot be handled, all parties working with synchronized authority files have to be able to see authority records in their entirety, including data in non-Roman scripts. Only now, with the increasing use of Unicode in library systems, is the library community achieving this capability.
- In addition, the source of authority for an established heading must be identified, and there may be multiple options for a particular
language. In the case of controlled Chinese language headings, for example, whose cataloging practice and writing conventions should be followed? Those of mainland China? Of Taiwan? Of Hong Kong? Librarians tend to look at bibliographic control and access from the perspective of scripts (as suggested by the title of the program at which this paper was presented), but bibliographic control and access really have to do with language. Understanding the two concepts—script and language—is necessary before authority control issues can be considered.

Scripts and Languages

Text is the visible representation of language. One or more scripts are used to write text. Most scripts are used to write more than one language, as shown in figure 1. A few scripts are used for only one language. Korean hangul and Cherokee are examples. In Japanese writing, several scripts are intermixed—hiragana, katakana, and ideographs (called kanji in Japanese), and even Latin script (romanji).

Language is a fundamental aspect of authority control. The source of authority that defines headings has an explicit or an implied language, and may include instructions on how to coordinate text in other languages—some written in other scripts—with the preferred language of the source of authority.

The Unicode Standard encodes scripts, not languages. The importance of Unicode for authority control, as well as for other aspects of library service, is that Unicode makes creating software that presents text in its proper script easier. Use of Unicode does not provide answers to the most challenging questions related to authority control, languages, and scripts.

Scripts, Languages, and Access Points

When the access points of bibliographic records are considered in relation to language (which implies script), they fall into three categories: language neutral access points, source-specific access points, and locale-specific access points. Language-neutral access points include standard identification numbers (International Standard Book Number [ISBN], International Standard Serial Number [ISSN], CODEN designation, and so on), the class numbers of a classification scheme, and codes (for example, for language or country of publication). Sources of authority for language neutral access points include:

- technical standards, such as ISO 2108:1992, the International Organization for Standardization publication that defines the ISBN;
- classification schemes, such as the Dewey Decimal Classification System and
- code lists, such as the MARC code lists.

Note that language-neutral access points are not necessarily script-neutral; for example, the Latin letter X is used as a check-sum digit in the ISBN, and the highest levels of the Library of Congress classification are designated by letters of the English alphabet.

Language-neutral access points may even reflect the usage of a particular language. MARC language and country codes often reflect the English-language names of languages and countries. The country code for Spain, for example, is “sp” not “es” (for España). Although characters from a particular script may be used in a language-neutral access point, their use is as a symbol or code, not as regular text. The country code “sp,” for example, could be rendered as “España” for a Spanish-speaking clientele.

Source-specific access points are straight transcriptions of text from the source of information. In practice, most titles and any notes that are indexed fall into this category.

<table>
<thead>
<tr>
<th>Script</th>
<th>Languages written in the script</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arabic</td>
<td>Arabic, Farsi, Pashto, Sindhi, Uighur, Urdu, Ottoman</td>
</tr>
<tr>
<td></td>
<td>Turkish, . . .</td>
</tr>
<tr>
<td>Canadian Aboriginal Syllabics</td>
<td>Inuktitut, Cree, . . .</td>
</tr>
<tr>
<td>Cyrillic</td>
<td>Russian, Bulgarian, Ukrainian, . . .</td>
</tr>
<tr>
<td>Devanagari</td>
<td>Hindi, Sanskrit, Assamese, Newari, Santali, . . .</td>
</tr>
<tr>
<td>Hebrew</td>
<td>Hebrew, Yiddish, Judeo-Levantine, Ladino, . . .</td>
</tr>
<tr>
<td>Ideographs</td>
<td>Chinese, Japanese, Korean, historic Vietnamese</td>
</tr>
<tr>
<td>Latin</td>
<td>English, French, German, Italian, Vietnamese, . . .</td>
</tr>
<tr>
<td>Sinhala</td>
<td>Sinhala, Pali, Sanskrit</td>
</tr>
<tr>
<td>Thai</td>
<td>Thai, Kuy, Lamn T'ai, Pali</td>
</tr>
</tbody>
</table>

Figure 1. Scripts and languages—selected examples

Locale-specific access points include names, uniform titles, subjects, and additional parts of headings in the language of the catalog. These are all access points that consist of headings (or parts of headings) established under authority control. The word “locale” comes from computing, where it refers to the collective features of software that reflect the preferences of users in a particular cultural environment. Sources of authority that determine the
content of a particular heading include cataloging rules, subject heading lists, and thesauri.

Locale-Specific Access Points

Locale-specific access points are determined by the needs of users. Each locale determined by a particular set of user requirements must have defined sources of authority to control the creation of headings used as its locale-specific access points.

The basic need of a user is the ability to search the catalog using his or her preferred language, and that language must be written in the proper script. Romanization is not good enough! Aliprand described romanization as “information distortion.”8 Authority control ensures consistency in access points for a particular language environment. To establish headings in a specific language and script, one must choose a source of authority whose operative language—either explicit or implied—is the language of the catalog user.

Another aspect of locale is the knowledge level of the user. The source of authority must be appropriate for this, as well. The vocabulary for subjects in a catalog must conform to the user’s abilities and knowledge. More detailed subject vocabularies meet the needs of experts. Contrast these with a vocabulary to serve children.

Cultural aspects are also part of a locale. Library of Congress subject headings were developed in an American environment, and not all terms have the same meaning throughout the English-speaking world. Language and culture are intertwined and, in some cases, local variation from the norm is necessary. Local terminology could be accommodated by a two-stage searching process:

- initial searching of a locale-specific authority file that contains preferred forms different from those in a general-purpose authority file; and
- searching of the general-purpose file whenever a specific local form was not found.

Multiplicity of Locales

A specific place or nation may include a number of locales. Language is an important component of a locale. Conceptually, a separate logical catalog exists for each language, with separate authority files for names and subjects. In reality, these may be amalgamated into a single physical catalog, with repetitive data being eliminated. In thinking about multilingual and multiscr ipt access, the catalog must be considered conceptually, that is, as a logical model, not as it is in actuality.

The Anglo-American Cataloging Rules, 2nd ed. (AACR2) and Library of Congress subject headings (LCSH) are accepted so much as basic tools that catalogers may forget that the catalog they are building is for English speakers.9 Many of the sources of authority for other languages are based on AACR2 or LCSH, but, despite their origin, they are other sources, used to establish catalog headings in other languages.

Canada, for example, has two official languages, English and French. Conceptually, authority control in Canada serves two locales: English-speaking users and French-speaking users. Because of these multiple service needs, Canada is a leader in multilingual authority control. In its bilingual cataloging policy, Library and Archives Canada stipulates the conditions for establishing both English and French forms of headings used as main or added entries.10

For French-language cataloging, the Canadian translation of AACR2, Règles de catalogage anglo-américaines, is used, rather than the descriptive rules used in France.11 Holley notes that Canada’s French subject headings list, Répertoire de Vedettes-matière (RVM), has been particularly influential internationally.12

Canada’s Territory of Nunavut, created in 1999, has four official languages: English, French, Inuinnaqtun written in Latin script, and Inuktitut written in Canadian Aboriginal Syllabics. The Canadian Standards Association proposed the addition of the Canadian Aboriginal Syllabics to the Unicode Standard and to its International Standard equivalent, ISO/IEC 10646.13 The Association for Library Collections & Technical Services, Library Information & Technology Association, and Reference and User Services Association’s Machine-Readable Bibliographic Information Committee (MARBI) approved MARBI Proposal 2002-11 in which the Canadian Committee on MARC proposed allowing use of Canadian Aboriginal Syllabics in MARC 21 records encoded in Unicode.14

East Asian ideographs present a particularly complex situation in determining what is a language and so what source of authority should control the creation of headings. Different languages (namely, Chinese, Japanese, Korean, and historic Vietnamese) are written entirely or partly with ideographs. In this respect, ideographs are just like any other script that may be used to write multiple languages.

Two writing conventions are used for Chinese: traditional (used in Taiwan and Hong Kong), and simplified (used in the People’s Republic of China and in Singapore). What is ostensibly a single language and its script has regional differences. Established headings in Chinese will reflect local writing conventions.

Scripts, Languages, and Authority Formats

Another item needed for authority control is a specification that defines the structure of the data. Both MARC 21 and UNIMARC (a set of formats for machine-readable data published by the International Federation of Library
Associations) specify authority formats. Both the MARC 21 and UNIMARC specifications allow use of non-Roman scripts in authority records. The two formats have many data elements in common, although they use different tag designations for them. This paper uses MARC 21 examples.

With respect to the use of non-Roman scripts, the structure of MARC 21 is flexible. MARC 21 allows linking of romanized/non-Roman field pairs (with provision for unlinked non-Roman fields), or the direct use of original scripts in regular fields. These capabilities are present in the MARC 21 Format for Authority Data.15

In the UNIMARC Authorities Format, “alternative script representations of the headings, notes, and the tracings may be co-resident in an authority record or may reside in separate linked records.”16

The most fundamental requirement for an authority record is that only one established form exists per record. This may seem obvious, but what happens when a person, place, or thing is known by multiple names in different languages and scripts? Should a paired 1XX (heading) field be used for a synonym written in a non-Roman script, the way fields are paired in bibliographic records? This supposition is examined below.

Another requirement for authority records are the 7XX heading linking entry fields that are essential to maintaining relationships between established forms in other authority files that use different languages, and possibly other scripts. This mechanism provides a basis for interconnected authority files, for which Tillett coined the term “Virtual International Authority File.”17

The limitation of one established form per record is imposed by the fact that, in the MARC 21 Format for Authority Data, certain key data elements are singly occurring. Field 008 Fixed-length data elements, which is non-repeatable, includes two positions that are each only one character long. These data elements, represented by the positions Descriptive cataloging rules and Subject heading system/thesaurus, are both singly occurring.

These two positions specify the sources of authority used to create the record. Position 10, Descriptive cataloging rules, identifies “the descriptive cataloging rules used to formulate the 1XX name, name/title, or uniform title heading in established heading or reference records.”18 Position 11, Subject heading system/thesaurus, identifies “the subject heading system/thesaurus building conventions used to formulate the 1XX heading in established heading, reference, subdivision, or node label records.”19

Field 040 subfields e and f are used if field 008 positions 10 and 11 are inadequate for recording the sources of authority for names and such, and for subjects. Field 040 and subfields e and f are all nonrepeatable.

Each source of authority has an explicit or implied language. Authorized headings in multiple languages cannot be defined in a single record because places to identify the multiple sources of authority for the headings are not available. Each authorized heading in a particular language has to be defined in its own record.

Notice that this limitation applies not just to headings in different scripts or headings in different languages. Headings in the same language, but established according to different sources of authority, cannot be included in the same authority record because there is no way to record the multiple sources of authority.

Structural Aspects of Non-Roman Data in Authority Records

In bibliographic records, data in the scripts of the source of information and its romanization are contained in a pair of linked fields that may be substituted for each other in certain displays. If the original script cannot be displayed, at least one can see the romanization. When non-Roman scripts are to be included in authority records, should this methodology be replicated?

Aliprand rigorously examined whether romanized and non-Roman fields in authority records should be linked.20 Linked field pairs in authority records must be ruled out because one-to-many and many-to-one relationships among data elements often occur. Weinberg independently reached this conclusion.21 Examples of one-to-many and many-to-one relationships between names in original script and romanized form(s) are given in Weinberg and Aliprand.22

Romanized/non-Roman linkage of 1XX fields in an authority record was ruled out above because the structure of authority records provides for only one source of authority for name and for subject. Such linkage must be ruled out in the other fields of an authority record because complex relationships in the data may exist. For example, the Name Authority File (NAF) authority record for Liu, James J. Y. contains three 400 fields. The three see from tracings represent romanizations created from a single name written in ideographs. Application of the ALA-LC conventions for the romanization of Chinese, Japanese, or Korean text to the name written in ideographs yields three different “readings” for the same source name.23 The benefit of precluding a single composite authority record with multiple syntactic structures is that such a record would be complicated, and difficult to process and update.

MARC 21 provides for two models of multiscr ipt record: Model A (Vernacular and transliteration) and Model B (Simple multiscr ipt records).24 In Model A records, data in the scripts of the source of information appears in the 880 field, Alternate Graphic Representation. Each 880 field is normally paired with the field that contains the romanization of the data in the 880 field.
This paired methodology was originally developed for bibliographic records. Linked pairs of fields allows romanized data to be substituted for the original scripts when a user prefers to see the romanized form or when a display device is limited to Latin script. Note that unlinked fields containing non-Roman scripts cannot be seen in these circumstances.

In viewing an authority record, however, romanization cannot be substituted for original script data because a cataloger needs to see everything. Pairing of romanized and non-Roman fields in authority records is not needed. Because the complete record must always be seen, whether 880 fields need to be used in authority records is questionable. They might be used internally if software designed for bibliographic records is also used for authority records.

The Name Authority File—Present and Future

How does this language-oriented view of cataloging work out in reality? Figure 2 shows data from a NAF record as it is today; the extract shows the official names of the United Nations. The names are in languages written in Latin script (English, French, and Spanish) or are romanizations of the names in languages written in other scripts (Russian, Chinese, and Arabic).

The Russian, Chinese, and Arabic names are shown in romanization because not all contributors to the communal NAF have systems that support the scripts of these languages. Notice also that Chinese is shown in pinyin, the current ALA/LC romanization scheme for Chinese, as well as in Wade-Giles, the previous method.

When, in the future, all systems contributing to NAF have multiscipt support, two options for an authority record with multiple scripts are possible. Figure 3 shows the minimal approach: all alternative names, including those written in other scripts, are treated as see from tracings in a single record.

Including links to other established headings in the record is also possible; no limitations exist on the scripts that can be used in the “linked to” headings. The 7XX fields, heading linking entry fields, that contain the links have not been included in figure 3.

The Arabic name of the United Nations (see the last line in figure 3) begins with the definite article. In the romanized form of the Arabic name of the United Nations (see the last line in figure 1 and the fourth line from the bottom in figure 3), the definite article (“al-” in ALA-LC romanization) has been omitted. The definite article is normally ignored in searching and sorting. Because the 410 field does not include an indicator to record the number of initial nonfiling characters, the romanized form of name has been deliberately distorted to obtain the desired result in searching and sorting. Use of more sophisticated searching algorithms in library catalogs or implementation of the recently introduced codes to demarcate nonsorting strings will obviate such crude solutions.

The other option is to have multiple authority files (for example, one for each language) and to link them all together to provide multilingual and multiscipt access. This is the concept of the Virtual International Authority File. Figure 4 shows the set of six records establishing “United Nations” in each of its six official languages. For simplicity, links between only two records in the set are shown. Will this approach offer a way to provide multilingual service without having to reinvent the wheel in authority records under our immediate control?

Conclusion

In theory, any script may be used in authority records. Currently, the NAF and the Subject Authority File controlled by the Library of Congress are limited to Latin script because not all contributors have systems with non-Roman script capability.

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**Figure 2. Data from NAF record**

<table>
<thead>
<tr>
<th>110 2_</th>
<th>†aUnited Nations</th>
<th>English</th>
</tr>
</thead>
<tbody>
<tr>
<td>410 2_</td>
<td>†aNations Unies</td>
<td>French</td>
</tr>
<tr>
<td>410 2_</td>
<td>†aNaciones Unidas</td>
<td>Spanish</td>
</tr>
<tr>
<td>410 2_</td>
<td>†aOrganizatsii Ob’edinennyykh Naïstii</td>
<td>Russian (ALA-LC)</td>
</tr>
<tr>
<td>410 2_</td>
<td>†aLian he guo</td>
<td>Chinese in Pinyin</td>
</tr>
<tr>
<td>410 2_</td>
<td>†aLien ho kuo</td>
<td>Chinese in Wade-Giles</td>
</tr>
<tr>
<td>410 2_</td>
<td>†aUmam al-Muttahidah</td>
<td>Arabic (ALA-LC) with heading article dropped</td>
</tr>
</tbody>
</table>

**Figure 3. See from tracings in true script**

<table>
<thead>
<tr>
<th>110 2_</th>
<th>†aUnited Nations</th>
<th>English</th>
</tr>
</thead>
<tbody>
<tr>
<td>410 2_</td>
<td>†aNations Unies</td>
<td>French</td>
</tr>
<tr>
<td>410 2_</td>
<td>†aNaciones Unidas</td>
<td>Spanish</td>
</tr>
<tr>
<td>410 2_</td>
<td>†aOrganizatsii Ob’edinennyykh Naïstii</td>
<td>Russian (ALA-LC)</td>
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<td>410 2_</td>
<td>†aLian he guo</td>
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<tr>
<td>410 2_</td>
<td>†aLien ho kuo</td>
<td>Chinese in Wade-Giles</td>
</tr>
<tr>
<td>410 2_</td>
<td>†aUmam al-Muttahidah</td>
<td>Arabic (ALA-LC) with heading article dropped</td>
</tr>
<tr>
<td>880 2_</td>
<td>†6410-00a†aОрганизация Объединенных Наций</td>
<td>Russian (ALA-LC)</td>
</tr>
<tr>
<td>880 2_</td>
<td>†6410-00a†a联合国</td>
<td>Chinese in Pinyin</td>
</tr>
<tr>
<td>880 2_</td>
<td>†6410-00aالأمم المتحدة</td>
<td>Arabic (ALA-LC) with heading article dropped</td>
</tr>
</tbody>
</table>
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References


19. Ibid.


Supply and Demand for Catalogers
Present and Future

Joan M. Leysen and Jeanne M. K. Boydston

This paper presents results from a fall 2003 survey of heads of cataloging at Association of Research Libraries United States academic libraries. The survey focused on the current number of professional catalogers and their responsibilities as well as future projections for demand for catalogers and thoughts about their roles. The study found that the numbers of professional catalogers are remaining constant or decreasing, and approximately one-third are projected to retire in the next decade. In addition, the role of the professional cataloger is perceived as continuing to evolve toward more cataloging-related activities and management and less direct cataloging. Most respondents predicted the professional cataloger has a role in the future and felt prepared for that future. Some respondents suggested that metadata cataloging would be a growing role in that future. This paper concludes with additional questions about the future of professional catalogers and cataloging.

In the coming years, the number of catalogers is predicted to drop significantly due to the aging and subsequent retirement of the cataloging workforce. Wilder reported that catalogers in Association of Research Libraries (ARL) constitute one of the oldest categories of an aging librarian population. He further speculated that “fully one-third of the 2000 ARL cataloging population will retire by 2010.” At a 2003 American Library Association (ALA) Conference, Camden stated that “Over one half of Library of Congress [LC] catalogers are eligible for retirement; almost 80% of LC paraprofessionals are over 50 years of age.” Many library school students are also older and enter the profession as second careers or after working in libraries as paraprofessionals. Library school faculty are also aging. As these catalogers, cataloging educators, trainers, and supervisors retire in the coming years, the profession will lose a wealth of knowledge and experience.

New cataloging hires have not been keeping pace with those leaving the profession. Beile and Adams reported a decrease of more than 10 percent in the number of cataloging positions advertised from 1988 to 1996. Even more dramatic is Wilder’s comparison of cataloging hires with those of functional specialists. Wilder defined these functional specialists as professionals without MLS degrees working in areas such as systems analysis, personnel, and archives. He reported that the hiring of functional specialists increased 523 percent between 1983 and 2000, compared to a 46 percent decrease in cataloger new hires. Fewer new recruits are entering the workforce to become trained catalogers equipped with the skills and knowledge needed to replenish those catalogers who will be exiting the profession in coming years.

A reduction in the number of job prospects directly affects the student enrollment in professional cataloging and technical services programs. Library
schools have reduced the number and level of courses in cataloging or eliminated cataloging as a required course for all students. Hill wrote, “By the mid 1980s, most library schools offered at most two cataloging courses, and the first was increasingly not a cataloging course per se, but was instead a kind of ‘cataloging appreciation course.’” Joudrey’s more recent study of the cataloging curricula at 48 library science schools reported that the “percentage of programs that require a basic cataloging course has declined from 63% to 43.8%” when compared to a similar 1997 study by Vellucci. Likewise, Hsieh-Yee observed, “Cataloging education has indeed been reduced. There is a pattern of providing general coverage of cataloging in a required introductory course such as information organization or knowledge organization instead of offering a cataloging course.”

Low salaries and poor image also may influence those considering a cataloging career. Cataloging and catalogers have received a negative image both in library school programs and within the academic library. In addition, as with many traditionally female-dominated professions, increased career opportunities with higher financial compensation have lured away many potential librarians.

This drop in the numbers of professionalcatalogers is especially significant in the last decade as the emergence of new formats, such as Internet resources, DVDs, and other digitized content, add to an already full cataloging workload. Multiple formats, aggregations of content, and emerging metadata schemes present new challenges to those catalogers who provide access to these materials. In addition, some libraries (in Michigan, Colorado, and Kansas) have been collaborating with other organizations to provide access to digital collections and are involving catalogers in this process. Projects such as these illustrate a changing role for catalogers. Opportunities for collaboration with individuals outside technical services and the library could offer catalogers of the future a more visible presence in the university community.

However, a contradiction seems to exist between the need for cataloger’s skills in accessing new formats and the diminishing supply and value placed upon professional catalogers. As early as 1992 Rodriguez commented, “The paradox of cataloging today is the growing importance of cataloging and the declining importance of catalogers.” The question then arises of how libraries are coping with this situation.

The purpose of the present study is to examine in more detail some issues surrounding the supply and demand for professional catalogers. Is there a shortage of professional catalogers? If so, what is its extent? Is there a reduced need for professional catalogers and their skills, or have those needs changed? Are libraries prepared for these changes, and what are they doing about it? Answers to these questions are crucial in providing an honest appraisal of the future for those interested in cataloging as a profession and to those currently employed as catalogers. These findings also will provide support to educators who are advising and guiding these professional careers. In this paper, a professional cataloger is defined as one whose position requires a Master of Library Science (MLS) or equivalent library degree. A paraprofessional cataloger is defined as one whose position does not require an MLS. The professional cataloger is the primary focus of this paper.

**Background and Review of the Literature**

Over the last several decades, cataloger shortages have been reported and described in the literature and at conferences. Technological advances, the uncertain economy, reduced hiring, and a declining emphasis on cataloging in library school curriculums have contributed to the thinning of the cataloger ranks. Bishoff’s summary of the supply and demand of catalogers from the mid-1960s to mid-1980s illustrates how technological advances have both reduced the need for the professional catalogers as well as increased the value of cataloging skills and knowledge. Catalogers, like other library employees, were plentiful in the 1960s, with federal financial support for higher education and library programs. Library staff were being hired in response to an expanding baby boomer generation entering higher education. The introduction of the MARC format in the 1960s and, especially, the emergence of bibliographic utilities in the 1970s were the beginnings of technological advances that have continued to affect the position of the professional cataloger. Shared databases of cataloging records, such as that of OCLC, resulted in more available cataloging copy that, in turn, allowed for greater flexibility in cataloging staffing and improved efficiency. Much of the cataloging traditionally assigned to the professional was shifted to paraprofessionals, a trend that continues today. Mohr and Schuneman reported that, by 1995, paraprofessional catalogers were performing some form of original cataloging, traditionally the responsibility of professionals, in 77.1 percent of ARL member libraries. El-Sherbini and Klim added, “Professional catalogers are being assigned the responsibility for education and training of staff, quality control of the product, and management of the new workflow.”

Reports of a diminishing pool and lower quality of applicants started to appear in the late 1970s. Hill theorized that more opportunities were available for women in other fields and that many were choosing those instead of librarianship. Special and corporate librarianship were also more appealing to library school graduates. Hill attributed some of the responsibility for the decline in new recruits to library schools’ portrayal of cataloging as “a dry, picky, mechanical, menial process involving the exercise of neither thought nor
imagining; and that cataloging has nothing to do with service. In June 1986, the ALA Cataloging and Classification Section Task Force on Education and Recruitment for Cataloging issued a report underscoring the difficulties in cataloger recruitment. At the same time, others were forecasting the demise and deprofessionalization of cataloging. Harris observed that deprofessionalization was occurring as cataloging was losing control of its knowledge base. She attributed this deprofessionalization to cataloging’s female-dominated workforce with low-level positions, automation, and the growing involvement of the private sector in information work. Interviewing catalogers at five libraries, Hafer reported catalogers felt “that their status in their specific institutions, and in the library profession in general, was in a process of drastic decline.” She also found that catalogers were concerned about the diminishing quality of cataloging records being produced and the types of materials left for professionals to catalog. Lack of clearly defined roles has added to confusion in how catalogers are viewed by themselves and others. The blurring of the roles between professional and paraprofessional catalogers has contributed to the appearance that technical services is largely a clerical function. Paraprofessionals also can feel resentment when their roles are not clearly defined and when they lack understanding of why their roles are changing. The institutional culture also may affect the acceptance of role changes. “Is Technical Services Being Deprofessionalized?” was the topic of the 1998 Association for Library Collections & Technical Services (ALCTS) Role of the Professional in Academic Technical Services Discussion Group Meeting. At that session, Hamilton commented that deprofessionalization had occurred, but “that we, as a profession, are simply in denial about it.” She questioned whether the patron had benefited from this deprofessionalization. Gillham postulated that the movement of tasks from professional to paraprofessional is not deprofessionalization. In her view, deprofessionalization occurs when there is a shifting of standards.

In the later 1980s, Intner observed a reprofessionalization of catalogers as online catalogs appeared and libraries were seeking catalogers who could assist with retrospective conversion and online public access catalog (OPAC) implementations: Colleges and universities that had shifted professionals away from cataloging began to think of ways to woo them back, but this time, the idea was that they would manage the libraries’ bigger, better computerized bibliographic systems. The old original cataloger became a database manager, a systems design specialist, or a bibliographic control librarian. OPAC vendors also were recruiting catalogers “for system design and analysis, user support, product development, sales and project management.” Yet by 1989, the shortages were still reported as practitioners and educators gathered at a Simmons College Symposium to develop strategies for improved recruitment and education. Even though the profession has made strides to improve recruitment and education for professional catalogers, little documentation in the literature shows that these periods of shortages have been followed by any measurable increase in the hiring of catalogers.

As more paraprofessionals assumed duties formerly performed by professionals, fewer professional catalogers were being hired, and the responsibilities of the working professional cataloger continued to change. Studies of cataloging job advertisements provide one method for tracking the changing role of catalogers. These investigations vary in the sample size, positions reviewed, time period studied, requirements examined, and source of the job advertisement. Most of the research has been limited to postings in print journals. Examining job advertisements has its limitations in defining the nature of the work. Requirements may be broader than the position in order to attract a larger applicant pool, and they do not provide the qualifications of the individual actually hired for the position. However, these studies can provide some insight into cataloger role changes. Although computer skills continued to be focused on knowledge of and experience with bibliographic utilities and automated library systems, microcomputer applications appeared to be slowly increasing as a requirement between 1974 and 1994. Experience and knowledge of metadata schemes and tools were also appearing in position descriptions. Comparing cataloger and reference librarian job requirements and qualifications from 1971 through 1990, Xu reported that while both positions required computer skills, each required skills unique to their respective positions. In a 1988 study, Reser and Schuneman reported technical services position advertisements were more likely to require computer skills, foreign language skills, and previous work experience than public services positions. Replicating the Reser and Schuneman methodology in 1996, Beile and Adams concurred that foreign language skills were more often required for technical services positions, but they refuted the early findings regarding computer skills and previous work experience. Chaudhry and Komathi reported that “knowledge of cataloging tools and resources” and “knowledge of automated cataloging systems” were the top two requirements appearing most often in cataloging job advertisements in the 1990s and these requirements increased in the latter half of the decade. This article also supports the view that traditional cataloging skills are still desired even in the electronic environment. By 2002, job advertisements for cataloging positions showed more significant changes than in the previous three decades. Electronic resources specialist and metadata special-
ist positions began to appear, and requirements included skills and knowledge in such standards as Dublin Core, Hypertext Markup Language (HTML), eXtensible Markup Language (XML) as well as project management experience. Hosoi found that special format cataloging was the most frequently mentioned required or preferred qualification in addition to traditional skills.

Similar changes in cataloging positions are evident in studies using survey methodology. Buttlar and Garcha studied the responsibilities of catalogers over a ten-year period from 1987 through 1997. Their findings showed that cataloging members of ALCTS were still involved in descriptive cataloging, subject analysis, and classification in more than 90 percent of the libraries surveyed in 1997. However, since 1987, these members have expanded their cataloging to include audiovisual materials, digital documents, and Internet resources. Participants also commented that education and training in computer technology skills is not keeping pace with the expectations that catalogers have these skills. A 2003 survey of cataloging practitioners revealed that the staff “defining and/or applying metadata standards” were most often catalogers, and 79 percent of the practitioners surveyed indicated that cataloging librarians or staff were involved in digital projects, especially in a consulting role or in “determining metadata standards or elements.”

The ALCTS Role of the Professional in Academic Technical Services Libraries Discussion Group, created in 1977, continues to be a forum for discussions and concerns surrounding the changing role of the professional cataloger. In the last several years this group has discussed a range of topics that included library school education, the changing technical services environment brought about by budget constraints and staffing concerns, technical services’ role in developing and interpreting new services, and the transition between retiring and new technical services professionals. Based on experiences at Texas A & M University in Commerce, Akins recommended that this transition avoid practices such as job shadowing, which relies heavily on the person retiring. She also reported that good documentation on the roles of professional and paraprofessional would assist with the smooth transition.

Proactive involvement of catalogers in new digital projects was another topic of this ALCTS discussion group’s meeting. Gerhart mentioned that catalogers at the University of Washington Libraries were members of various committees that provided metadata knowledge and documentation to other library staff and served as consultants to the library and university on metadata projects. Jenni also spoke about North Carolina State University’s technical services librarians’ expertise and skills that were pertinent to their involvement in the digital environment. The ability to see the big picture, leadership and coordinating skills, and knowing emerging metadata standards were some other skills desired for catalogers in the new environment.

Many directors of large research libraries have reported being in the initial phases of digital initiatives due to the slow pace of developments in standards, workflows, policies, and procedures. Yet other institutions like Cornell University are marketing their digital services to areas outside the library. With the rapid growth of the Internet in the 1990s, articles started to showcase cataloging skills and their relevance in providing organization to electronic information. Horney summarizes these views, “One of the most positive aspects of cataloging today is recognition of the importance of expertise in organizing and describing non-book materials. Catalogers that have this expertise are particularly well positioned to meet future challenges as Internet resources become more crucial to library service.” Following the discussions of the Library of Congress Bicentennial Conference on Bibliographic Control for the New Millennium held in 2000, articles on the development of metadata standards and their application in providing access to future resources have appeared. Some of these articles mention the role of catalogers in organizing electronic information. Commenting on the skills for digital catalogers, St. Clair denotes, “Catalogers’ traditional strengths—their organization of information, their understanding about the inherent relationships among disciplines, and their focus on issues of retrieval” are seen as valuable for the future. Yet others express concern about the lack of cataloger training and experience in this new area of metadata and digital resources. As these opportunities continue to grow, will trained catalogers participate in these projects, or will catalogers be excluded because they lack training or the supply of catalogers is just not available?

**Method**

To provide a more in-depth analysis of cataloger supply and demand issues and the impact of these issues on ARL libraries, the authors developed a survey instrument, which is presented in the appendix. It concentrated primarily on those catalogers whose position required an MLS, although some survey questions addressed the paraprofessional cataloger. The survey covered four broad areas: the number (increase or decrease) of professional catalogers, the time (increase or decrease) these catalogers spend on cataloging and other activities, recruitment of the professional cataloger, and opinions on the future for catalogers and cataloging. The survey contained 57 questions, many of which required a yes or no response; other questions, however, offered an opportunity for open-ended comments and opinions. The authors intentionally designed the survey to be fairly short to facilitate a
higher return rate. They conducted an informal pretest of the survey instrument among a small sample population. Additionally, selected library colleagues proofread the survey for clarity. Based on their feedback, the survey instrument was revised. ARL academic libraries located in the United States formed the population sample for this study. While large enough to provide a representative sample, the limited number of libraries (100) also facilitated the timely analysis of the data. Additionally, data from prior studies of these libraries was used to make comparisons.

In October 2003, the survey was mailed to the heads of technical services departments, or the equivalent position, at these ARL libraries. A cover letter outlined the survey purpose, provided instructions for completing it, and assured participants that data would be reported in the aggregate. Respondents could return the finished survey by mail or fax. After the initial deadline for completion, an e-mail reminder was sent. Once the surveys were returned, the results were coded and analyzed.

Findings

Responses came from all geographic regions in the United States, and the percentage of responses from public and private institutions mirrors the distribution found within ARL as a whole; see table 1. This table also shows the total number of professional and paraprofessional catalogers in the responding libraries. In addition to professional and paraprofessional catalogers, 42 percent of the respondents have library science practicum students or interns performing cataloging. Approximately one-third of the libraries hired paraprofessional catalogers specifically for their subject or language expertise. Not every respondent answered all the survey questions. When this occurred, numbers of respondents are provided in parentheses following percentages.

To determine if the numbers of catalogers might be affected by future retirements, the survey asked libraries to estimate the number of professional and paraprofessional catalogers aged fifty or older. These numbers ranged from 0 to 10 full-time equivalent (FTE) professional catalogers and 0 to 11 FTE paraprofessionals per library. Viewed in another way, an average 36 percent (423) of the catalogers working in these ARL libraries are in positions that require an MLS, and 38 percent of them are older than fifty. Paraprofessional catalogers make up 64 percent (766) of the cataloging population in these libraries, and 32 percent of them are age fifty or older.

Numbers of Catalogers

The next section of the survey focused on whether the numbers of catalogers had changed since 1998. Fifty-five percent (33) of the respondents reported a decrease in the number of FTE professional catalogers. Reasons for the decrease appear in table 2.

A position or funding reallocation to other areas of the library and cataloger retirements or resignations were the most frequent reasons for this decrease. Less need for professional cataloging skills and fewer qualified applicants were mentioned as secondary factors. Seventeen percent (10) of the respondents reported an increase in the number of professional catalogers. The most noted reason for this increase was the need for catalogers with knowledge of special languages, subjects, or formats (see table 3).

<table>
<thead>
<tr>
<th>Table 1. Demographics</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARL libraries responding</td>
</tr>
<tr>
<td>Public</td>
</tr>
<tr>
<td>Private</td>
</tr>
<tr>
<td>Total</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>No. of catalogers</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>MLS required</td>
<td>423</td>
</tr>
<tr>
<td>Paraprofessionals</td>
<td>766</td>
</tr>
<tr>
<td>Total</td>
<td>1189</td>
</tr>
</tbody>
</table>

<p>| Table 2. Factors involved in the decrease in the number of professional catalogers |
|--------------------------|---------|---------|---------|</p>
<table>
<thead>
<tr>
<th>Factors</th>
<th>Yes</th>
<th>No</th>
<th>Don’t know</th>
</tr>
</thead>
<tbody>
<tr>
<td>Retirements or resignations (N=32)</td>
<td>23</td>
<td>72</td>
<td>8</td>
</tr>
<tr>
<td>Less need for professional skills (N=31)</td>
<td>8</td>
<td>26</td>
<td>23</td>
</tr>
<tr>
<td>Position or funding reallocated to other areas of library (N=33)</td>
<td>26</td>
<td>79</td>
<td>6</td>
</tr>
<tr>
<td>Fewer qualified applicants to fill vacant positions (N=31)</td>
<td>4</td>
<td>13</td>
<td>26</td>
</tr>
</tbody>
</table>

Some totals do not equal 100 percent due to rounding.

<p>| Table 3. Factors involved in the increase in the number of professional catalogers |
|--------------------------|---------|---------|---------|</p>
<table>
<thead>
<tr>
<th>Factors</th>
<th>Yes</th>
<th>No</th>
<th>Don’t know</th>
</tr>
</thead>
<tbody>
<tr>
<td>Knowledge of special languages, subjects or formats (N=10)</td>
<td>8</td>
<td>80</td>
<td>1</td>
</tr>
<tr>
<td>More advanced knowledge of technological innovations (N=9)</td>
<td>7</td>
<td>78</td>
<td>1</td>
</tr>
<tr>
<td>Supervisory/leadership skills/roles (N=9)</td>
<td>6</td>
<td>67</td>
<td>3</td>
</tr>
<tr>
<td>Trainers needed (N=9)</td>
<td>7</td>
<td>78</td>
<td>2</td>
</tr>
<tr>
<td>Special projects (N=9)</td>
<td>2</td>
<td>22</td>
<td>7</td>
</tr>
</tbody>
</table>
In 28 percent (17) of the libraries, the numbers of catalogers remained the same.

When asked if their library currently had professional cataloger vacancies, 66 percent (37) indicated “no,” while 34 percent (19) answered “yes.” The library budget did not prevent these vacancies from being advertised.

**Recruitment**

Respondents also replied to questions about recruitment practice at their institution. Almost half of the respondents indicated that they had hired a professional cataloger in the last two to four years. Forty-two percent hired a cataloger within the last year. Only 12 percent hired their last cataloger five or more years ago.

Since 1998, 52 percent of the respondents reported problems in recruiting professional catalogers. Slightly fewer than half reported no such problems. Three percent responded “not applicable” to this question. Respondents were provided with four possible reasons why libraries might have difficulty recruiting professional catalogers (see table 4).

Lack of qualified applicants was cited as the primary source of this difficulty (97 percent). Almost half (49 percent) of the respondents also felt that the lack of a competitive salary was a factor. Forty-one percent of respondents felt that the institution’s location influenced recruiting, but an equal percent felt it did not. Half of the respondents that reported difficulty in recruiting indicated that their institution’s criteria for tenure or continuing appointment was not an issue, while 36 percent said it was a factor. The local cost of living also was mentioned as a cause for concern.

**Time Spent Cataloging and the Cataloger’s Role**

Not only have the numbers of professional catalogers decreased in many of the libraries surveyed, the amount of time the catalogers spend on cataloging also has decreased in 55 percent of the libraries. The time spent on cataloging increased in only 13 percent of the libraries and stayed the same in 32 percent.

Respondents were presented with six possible reasons for the decrease in time spent on cataloging (see table 5). The two top reasons contributing to this decrease were catalogers spending more time on cataloging-related projects (such as systems integration and vendor product implementation) and on library service activities. More than 75 percent of the 33 respondents reporting a decrease also indicated professional catalogers spent more time on managerial and supervisory responsibilities and providing training. Additionally, paraprofessionals performed more cataloging, a reason given by 76 percent of the respondents. This further decreased the amount of cataloging performed by professionals. Eight respondents indicated the time professional catalogers spent in cataloging had increased. They attributed this increase to priority changes by administrators, desirability for improved access, and more items to catalog.

**Vendors and Outsourcing**

Almost all of the respondents (58) replied that they use vendor products or outsource cataloging, and 45 percent use these services “often” as an alternative to in-house cataloging. In 35 percent of the libraries, the decision to use these alternatives is based on “fewer catalogers to do the work” and “library budgetary issues.” Fifty percent of the respondents provided additional reasons for using these services. Improved efficiency—by allowing professional catalogers time to focus on more difficult, specialized cataloging or more challenging work—and the need to eliminate backlogs were also mentioned.

**Future**

In the last section of the survey, respondents were given a series of scenarios regarding the possible future of profes-

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**Table 4. Factors in recruitment difficulties for professional catalogers**

<table>
<thead>
<tr>
<th>Factors</th>
<th>Yes</th>
<th>No</th>
<th>Don’t know</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lack of qualified applicants (N=30)</td>
<td>29</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Criteria for tenure or continuing appointment (N=28)</td>
<td>10</td>
<td>14</td>
<td>50</td>
</tr>
<tr>
<td>Desirability of the community or institution’s location (N=29)</td>
<td>12</td>
<td>12</td>
<td>41</td>
</tr>
<tr>
<td>Lack of competitive salary (N=31)</td>
<td>15</td>
<td>10</td>
<td>32</td>
</tr>
</tbody>
</table>

Some totals do not equal 100 percent due to rounding.

---

**Table 5. Professional cataloging time decreased**

<table>
<thead>
<tr>
<th>Reasons for decreased time</th>
<th>Yes</th>
<th>No</th>
<th>Don’t know</th>
</tr>
</thead>
<tbody>
<tr>
<td>More cataloging by paraprofessionals (N=33)</td>
<td>25</td>
<td>76</td>
<td>8</td>
</tr>
<tr>
<td>Professional catalogers needed for training (N=31)</td>
<td>24</td>
<td>77</td>
<td>6</td>
</tr>
<tr>
<td>More time spent on library service/library committees (N=32)</td>
<td>27</td>
<td>84</td>
<td>5</td>
</tr>
<tr>
<td>More time spent on tenure or continuing appointment requirements (N=32)</td>
<td>17</td>
<td>53</td>
<td>14</td>
</tr>
<tr>
<td>More time spent on managerial/supervisory responsibilities (N=33)</td>
<td>26</td>
<td>79</td>
<td>7</td>
</tr>
<tr>
<td>More time spent on related activities (systems integration, etc.) (N=33)</td>
<td>29</td>
<td>88</td>
<td>4</td>
</tr>
</tbody>
</table>

Some totals do not equal 100 percent due to rounding.
sional catalogers and their changing role in the profession (see table 6). Respondents were asked to rate each statement on a four-point scale ranging from “strongly disagree” to “strongly agree.” They also had an option for “no opinion.”

Most respondents “agreed” or “strongly agreed” that libraries will continue to recruit for beginning-level professional cataloging positions (53 percent and 19 percent respectively), but that the responsibilities of these catalogers will shift from cataloging to more training and administrative tasks. In addition, 53 percent “agreed” and 8 percent “strongly agreed” that libraries would hire graduates with subject or language degrees and train them as catalogers. The survey did not address the reasons why libraries might take this action. Outsourcing also will play a strong part in the future of cataloging, with 47 percent of the respondents “agreeing” and 30 percent “strongly agreeing” that libraries of the future will outsource more materials to be cataloged.

Considering the present and future shortages of catalogers, recruitment difficulties, and changing cataloger roles, the survey asked participants how well their library was prepared for the future. Most respondents felt they were “prepared” (63 percent) or “very prepared” (14 percent) for the future. Only 19 percent felt “unprepared” or “very unprepared” (2 percent), and 3 percent indicated “no opinion.” Many respondents provided written comments on the future state of cataloging and catalogers. They indicated that flexibility on the part of professional catalogers to try new approaches, willingness to adapt to new technologies, and administrative support for cataloging are three important factors in future planning for cataloging. Many reported analyzing relevant staffing and workflows and developing strategies for moving traditional cataloging activities to other staff. Others mentioned outsourcing some materials to be cataloged.

If catalogers are to be involved in such new initiatives as metadata, continuing education and training will be essential. Fifty-eight percent (57) of the respondents indicated that their library had not done so. Several libraries showcased cataloging skills and knowledge by communicating cataloging policies, achievements, and projects to the library community. They achieved this communication through in-house staff training, PowerPoint presentations, open houses, and information on the department’s Web page. These libraries also encouraged catalogers to be involved in the library’s mission and objectives by participating in the intellectual life of the library through active membership in major or innovative committees. This increases the visibility of catalogers and communicates the relevance of their skills to library activities. Several respondents commented on the value of cataloger involvement in digital projects and metadata services.

Respondents who felt their library was unprepared for the future expressed concerns about losing the expertise and skills of their experienced catalogers to retirement and concerns that the library administration had no plans to replace that experience. Others mentioned the need for cataloger training, especially in standards that go beyond the MARC format; lack of planning and involvement of staff in planning for the future; and a need for more long-term solutions.

Being proactive in promoting cataloging knowledge and skills was important. Forty-two percent (57) of the respondents indicated that their library made an effort to showcase and explain the knowledge, skills, and roles of professional catalogers to other areas of the library and university community, but 58 percent (57) indicated their library had not done so. Several libraries showcased cataloging skills and knowledge by communicating cataloging policies, achievements, and projects to the library community. They achieved this communication through in-house staff training, PowerPoint presentations, open houses, and information on the department’s Web page. These libraries also encouraged catalogers to be involved in the library’s mission and objectives by participating in the intellectual life of the library through active membership in major or innovative committees. This increases the visibility of catalogers and communicates the relevance of their skills to library activities. Several respondents commented on the value of cataloger involvement in digital projects and metadata services.

### Table 6. Future state of professional catalogers and cataloging

<table>
<thead>
<tr>
<th>Future</th>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
<th>No opinion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Libraries will recruit beginning-level professional catalogers (N=59)</td>
<td>5</td>
<td>9</td>
<td>8</td>
<td>14</td>
<td>31</td>
</tr>
<tr>
<td>Professional responsibilities will shift from cataloging to administration/management (N=59)</td>
<td>2</td>
<td>3</td>
<td>12</td>
<td>20</td>
<td>27</td>
</tr>
<tr>
<td>Professional responsibilities will shift from cataloging to training (N=59)</td>
<td>0</td>
<td>0</td>
<td>7</td>
<td>12</td>
<td>38</td>
</tr>
<tr>
<td>Graduates with subject/language degrees will be hired/trained in cataloging (N=59)</td>
<td>5</td>
<td>8</td>
<td>14</td>
<td>24</td>
<td>31</td>
</tr>
<tr>
<td>Libraries will rely more on outsourcing cataloging (N=60)</td>
<td>1</td>
<td>2</td>
<td>9</td>
<td>15</td>
<td>28</td>
</tr>
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Some totals do not equal 100 percent due to rounding.
offered “little” or “no encouragement.” As a final question, respondents were asked whether they would recommend someone obtain an MLS degree with a focus in cataloging. An overwhelming 93 percent replied “yes.”

Discussion

The number of catalogers in ARL libraries varies from institution to institution. The institution and collection size, centralized versus decentralized cataloging, uniqueness of the collection, proximity to a library school, and budgetary conditions are variables that may affect the number of catalogers at any given time. One common pattern that emerges among these academic libraries is that paraprofessional catalogers outnumber professional catalogers almost two to one. Eskoz reported a similar finding in a 1986–1987 study of 40 academic libraries in universities with enrollments of 20,000 or more.\(^{51}\) This division of staffing has been maintained despite further technological advancements. The numbers of professional catalogers are decreasing or staying the same in the majority of these ARL libraries. The decline in numbers is attributed to retirements or resignations and position or funding reallocation to other areas of the library. Although age is only one factor in predicting future retirements, one can expect that approximately one-third of the ARL catalogers represented in this study could retire in the next decade. This finding is similar to Wilder’s demographic predictions for future retirements mentioned earlier in this paper.\(^{52}\)

The reduction in the number of professional catalogers also may be due to more cataloging being transferred to paraprofessionals, but no evidence in response to this survey supports this conclusion. However, most respondents did not attribute the decrease in professional catalogers to less need for cataloging skills. Libraries are still valuing cataloger skills but perhaps are training paraprofessionals in these skills instead of employing additional professional catalogers. This may explain why the numbers of professional catalogers stayed the same at some libraries. Other reasons may be that some libraries have fewer vacancies, greater success in filling vacancies, or little staff turnover. Internal reorganization and reclassification of staff also may account for the fixed numbers of cataloging staff. This stability in numbers also may indicate a shift in cataloger responsibilities such as that described by Ouderkirk:

Cataloging tasks have traditionally moved along a continuum. In the innovation phase, new processing techniques are usually pegged at professional level. When those techniques have become routine and the next innovation has appeared, the same procedures become paraprofessional tasks.\(^{53}\)

Only 8 respondents reported an increase in the number of professional catalogers. The reasons for this increase included the need for catalogers with special skills and knowledge of languages, formats, or subjects; advanced knowledge of technological innovations; and training and supervisory skills. No evidence, however, suggests that this increase will continue in the future.

Libraries have little control over economic conditions that affect supply and demand of staffing. Administrators are forced to make difficult decisions as they struggle to meet expanding user expectations for the latest and fastest developments in information retrieval with fewer dollars. The work performed by catalogers is largely invisible to the public; therefore, it is more susceptible to budget cuts and often can result in vacant positions or reallocations to public services areas of the library. Wells stated:

The availability of outsourcing options may also cause administrators to look first at cataloging, with its traditionally higher percentage of librarians than in other technical services areas, when considering reductions of professional and support staff in times of financial difficulty.\(^{54}\)

Wells’ survey of 11 Southeastern academic libraries provides recent evidence of the effect of budget cuts on lost technical services positions. She reported that 62.8 percent of the libraries she surveyed had lost technical services positions due to budget reductions since 1990.\(^{55}\) The librarian ranks were especially affected by these budget constraints. Paraprofessional positions also were lost by more than half of the respondents.\(^{56}\) In almost half of the libraries, these lost positions were not reinstated.\(^{57}\) The most affected area within technical services was cataloging.\(^{58}\) “Seventy-five percent of the libraries that had lost positions reported they had reorganized their technical services operation.”\(^{59}\) Other means of dealing with the lost positions included transferring work of librarians to other staff (52.3 percent) and outsourcing (25 percent).\(^{60}\)

Respondents in this study gave many reasons for recruitment failures, mirroring those of earlier studies. Lack of qualified applicants and less than competitive salary were mentioned as being the most significant reasons for failed searches. A 1986 ALCTS task force reported that the poor quality of the applicant pool, lack of clearly stated relevant experience, and low salary were responsible for recruitment failures.\(^{61}\) While these studies concentrate on recruitment for catalogers, such issues are not unique to cataloging posi-
tions. Members of the Human Resources Section of ALA's Library Administration and Management Association division reported that the "lack of MLIS degree holders and low salaries at their institutions" were the top two reasons for recruiting difficulties.

Commenting on the decrease in cataloger hiring, Wilder observed:

"the extent of the drop, its consistency over an extended period of time, and across a large number of large academic libraries, makes unavoidable the conclusion that a fundamental shift has occurred in the staffing priorities of academic libraries away from professional technical services/cataloging positions."

The authors' survey data did not provide the evidence needed to determine whether this decrease in hiring is continuing. Most of the libraries surveyed had hired catalogers in the last five years, but the survey data provided no specifics about these hires. Whether the hiring was into a beginning- or experienced-level position, a position requiring unique skills, a temporary position, or an administrative assignment is unknown. How many times the position was advertised before being successfully filled or whether the search failed were aspects not covered in this survey. These topics merit further research.

Respondents in the current survey also foresee that their libraries will continue to recruit for beginning professional cataloging positions. Where these new recruits will come from is unclear. Cataloging faculty in library schools are aging and can be expected to retire in the next decade. As faculty retire, many times adjunct faculty replace them. These practicing catalogers may have good credentials for teaching cataloging; however, as adjunct faculty, they are in a poor position to affect the curriculum of library science programs. Furthermore, the numbers of accredited library science programs offering a doctoral level degree with a specialization in cataloging are diminishing.

If cataloging courses are not being taught or required in library schools or if cataloging is being assimilated with other forms of bibliographic control, libraries may not have a strong pool of applicants from which to hire a beginning-level cataloger. Libraries also may have to compete for catalogers with nonlibrary employers, such as vendors. Carbo estimates "that 20 percent of the most recent Pitt library school MLS graduates work outside libraries. A number of other library school deans concur."

Respondents also indicated that they would hire graduates with subject or language degrees and train them in cataloging skills and knowledge. This practice is already occurring in many libraries, where paraprofessional catalogers are hired for their subject or language expertise. One Association for College and Research Libraries (ACRL) task force has acknowledged the need to hire non-MLS degreed professionals who can advance upward in the library organization. For example, the Council on Library and Information Resources plans to sponsor a Postdoctoral Fellowship for Humanists in Libraries as an alternative to the MLS and to alleviate shortages of MLS librarians. The extent of these initiatives to recruit non-MLS employees for library positions may have significant implications for the future of MLS programs, library salaries, library organization structures, and promotion and tenure criteria at faculty status institutions. One cannot make assumptions about whether these positions will include future catalogers.

A reduction in the amount of time spent cataloging materials is a further indication that the role of the professional cataloger continues to be changing. In libraries where professional cataloging time has decreased, individuals are devoting their time to other cataloging-related responsibilities, such as systems integration and vendor product implementation. This is consistent with the 1997 Buttlar and Garcha findings that "catalogers were involved in activities formerly in the domain of systems/automation librarians."

Catalogers also are more involved in managerial and supervisory responsibilities, a finding similar to that of Buttlar and Garcha, and Eskoz. Buttlar and Garcha reported an increase of 11.6 percent in cataloger supervision of support staff, a 12.9 percent increase in coordinating the work of subordinates, and a 8.5 percent increase in evaluating cataloging personnel between 1987 and 1997. Eskoz reported catalogers had a major role (45 percent) or limited role (25 percent) in supervision. However, this finding is contrary to Furuta's report of a downward trend in the administrative responsibilities of catalogers from 1984 to 1989. While more cataloging is performed by paraprofessionals, professional catalogers are still needed to train these paraprofessionals. Buttlar and Garcha also reported involvement among professional catalogers in training copy catalogers, managing workflows, preparing cataloging documentation, and developing policy increased over a ten-year period. The professional catalogers also are participating in the library and university community through service on committees. This illustrates their involvement in broader issues and the contribution of their unique skills and knowledge to the library and university mission and goals.

In the current study, 8 respondents indicated that the time professional catalogers spent on cataloging increased. The small number of respondents makes drawing conclusions difficult. However, one might speculate on a correlation between the factors responsible for the increase. From the combined responses of "changed priorities of administration," "more materials lack established guidelines," and "an increase in the number of materials to catalog," one
might theorize that these libraries may be embarking on cataloging new formats or initiatives. Data from catalogers themselves outlining the percentages of their time spent on various responsibilities would provide more concrete data from which to draw conclusions.

Most libraries have used vendor-based products and services and outsourcing to assist with cataloging operations. Increased efficiency and improved use of staff to catalog more difficult or other materials were mentioned as advantages in using these resources. In 1997, Libby and Caudle reported a smaller percentage of libraries participating in outsourcing. The size of the collection and the number of current receipts were factors that affected the decision to outsource. Improved vendor quality, enhanced services, economic conditions, and priority changes may explain the wider acceptance of these services than in the past. Buttlar and Garcha reported that in 73 libraries that used outsourcing, local cataloging production had improved in 32 of them, and further, that outsourcing had little impact on the elimination of catalogers' positions. However, concessions associated with outsourcing cataloging have been identified in the literature. Loss of control over the library's local catalog, diminishing supply of original cataloging records contributed to shared bibliographic databases, and quality control issues are frequently mentioned.

Echoing earlier findings, many respondents also predicted that future cataloger responsibilities will shift from cataloging to more administrative, management, and training tasks. Gatti reported on the rise of the Generation X (born 1966–1976) cataloger as supervisor. This trend, in part, is occurring due to the aging of the cataloger management workforce and to the reluctance of current catalogers to assume supervisory roles. Library school programs will need to include these management skills in their cataloging curriculum as opportunities to learn these skills may not be available in the workplace. As Greneci reported, “Technical services work, both professional and paraprofessional, has changed and on the job apprenticeships are no longer the norm.”

Despite projections of a reduced cataloging workforce and impending cataloger retirements, the majority of respondents felt their library was prepared for the future. A supportive administration was clearly an important factor in this preparation. Respondents who feel prepared for the future indicated that library colleagues appreciate their catalogers' skills, and the organization recognizes the unique contribution made by their catalogers. Negative attitudes toward cataloging are mentioned by respondents that feel unprepared for the future. Many are concerned about impending retirements and the library administration's lack of commitment to a smooth transition for replacements. Few respondents commented on retention efforts for existing staff.

A few respondents mentioned metadata, content-linking technologies, and collaboration with faculty and the university community in creating an institutional repository as future cataloging activities. Discussions initiated at the Library of Congress 2000 Bicentennial Conference on Bibliographic Control for the New Millennium sparked several reports on the education and training required for catalogers to play an active role in organizing and accessing electronic content. Two action items of the “Bibliographic Control of Web Resources: A Library of Congress Action Plan” relate specifically to the education and training of catalogers. In response to Action Item 5.3, an ALCTS task force issued a proposal for the continuing education of cataloging professionals. This proposal acknowledges that not all catalogers will be participating in high-level cataloging activities and offers three levels of training ranging from those skills necessary for all catalogers to those for catalogers involved in the development of digital library projects.

A second ALCTS task force was charged with improving and enhancing curricula in library and information science programs. The Task Force 5.1 proposal recommends that metadata topics be incorporated into cataloging education (a concept supported by cataloging educators), and that these topics should be taught to all students. The plan provides various levels of expertise based on the student's career objectives, with the first level being recommended for all LIS students. The “effect of digital initiatives on cataloging operations” was also a topic of the ALCTS Heads of Cataloging Departments Discussion Group 2003 Midwinter Meeting.

Several obstacles may delay professional cataloger involvement in these new digital initiatives. Some metadata schemes that often conflict with traditional cataloging standards are being developed by organizations outside the library. Advances in technology, such as automated harvesting of information, also may limit the need and level of cataloger involvement in organizing digital content. Catalogers may not have the depth of subject expertise required for specialized metadata projects. In a survey of library schools, conducted from April through May 2002, Hsieh-Yee discovered that, while metadata concepts were discussed in cataloging classes, few in-depth offerings were provided. Several professional library associations, however, do sponsor metadata workshops throughout the country.

Summary and Conclusion

The findings of this survey provided a snapshot of the professional cataloger position in ARL libraries, but still leave many unanswered questions about the future of the professional cataloger. In the majority of libraries represented in the survey, the numbers of professional catalogers are either staying the same or decreasing. Recruiting for professional cataloging positions continues to be difficult. In addition,
approximately one-third of professional catalogers are aged fifty or older and potentially could retire in the near future.

The role of the professional cataloger is moving away from its primary focus on cataloging toward including management of cataloging activities. The majority of libraries will continue to use vendor products and services, which may also effect cataloging staffing. Most of the respondents in the survey felt their library was prepared for the future, but what that future might be is unknown. Libraries will continue to recruit professional catalogers, but cataloger responsibilities may be different and include administrative roles. In addition, new positions focusing on skills needed to address technological advances will evolve. Important areas for further investigation include determining how functional specialists affect the future of the professional cataloger and examining appreciation of and need for cataloger skills in contrast to the appreciation of and need for the professional cataloger.

While participants in this study overwhelmingly endorsed the idea of future professionals specializing in cataloging, many factors could affect this future. Technological innovations and an aging cataloging workforce certainly will be two important factors. Will academic libraries expand their use of vendor services and products and continue to move professional cataloging work to paraprofessionals, or will libraries, library schools, and our professional organizations continue to support cataloging as a professional activity? How will library schools fit into this picture with closings and lessening emphasis on cataloging?

Discussions and reports have indicated a future need for cataloging skills, especially for the current and future electronic environment. Little is known of the depth or the duration of this need. For example, digitization projects may vary among institutions. The scope of the collection can determine whether the project will be of short duration or one that will continue over time. Partnering with other institutions may make decisions (such as selecting a metadata standard and involvement of catalogers) more challenging. Technological advances may reduce the need for professional catalogers in these emerging projects; this is another area where further research is needed.

Academic libraries will need to address the questions raised by this study. If current trends continue, the professional cataloging workforce will not be able to replenish itself with new recruits. Thus, fewer professional catalogers will be available to provide necessary leadership and direction in meeting the challenges of rapid technological change and future information organization and retrieval needs. Fewer professionals will be applying their knowledge of information organization and retrieval to training others, managing workflows, and creating original bibliographic records to be shared among other libraries and users. In addition, the development and implementation of new standards and access methods will be dependent upon the skills and knowledge of a very limited number of catalogers. These standards are the foundation that has facilitated cooperative cataloging and fostered the application of new technologies.

The library profession and academic libraries must continue to define the role of professional cataloger. Better recognition of the value of cataloger’s skills and contributions is needed now, as is a continuing dialogue between academic libraries and library schools. Only then can library schools further educate and supply catalogers capable of addressing the information organization and retrieval needs of the future.

References
6. Wilder, Demographic Change in Academic Librarianship.


25. Ibid., 52.


33. Beile and Adams, “Other Duties As Assigned.”


38. Ibid.

39. Ibid.

40. Association for Library Collection & Technical Services Continuing Education Task Force, “Continuing Education


43. Ibid.


53. Jane Padham Ouderkirk, “Staff Assignments and Workflow Distribution at the End of the 20th Century; Where We Were, Where We Are, and What We’ll Need to Be,” Cataloging & Classification Quarterly 30, no. 2/3 (2000): 346.


55. Ibid.

56. Ibid.

57. Ibid.

58. Ibid.

59. Ibid.; 23.

60. Ibid.


64. Hoerman, “Why Does Everybody Hate Cataloging.”


69. Eskoz, “The Catalog Librarian-Change or Status Quo?”


Appendix. Supply and Demand for MLS Catalogers Survey

Instructions: Please answer the following questions concerning your library by circling the appropriate letter or filling in the answers as necessary. All information that you provide will be considered confidential. In the following questions, the term paraprofessional includes any individual that is employed in a cataloging position that does not require an MLS degree. Thank you for your participation in our survey. Please return your questionnaire by November 3, 2003.

Demographics

1. How many MLS and paraprofessional catalogers (FTE) does your library employ? ______
2. How many (FTE) of your library's catalogers have an MLS degree? ______
3. How many (FTE) of your library's catalogers are paraprofessionals? ______
4. How many (FTE) of your library's MLS catalogers are age 50 or older? ______
5. How many (FTE) of your library's paraprofessional catalogers are age 50 or older? ______
6. How many (FTE) of your library's paraprofessional catalogers were hired specifically for their subject or language expertise (such as, music or Slavic languages)? ______
7. Does your library use library science practicum students or interns to do cataloging?  a. Yes  b. No
8. Since 1998, have the numbers of FTE MLS catalogers in your library …
   a. Decreased (continue on to questions 9–12, and then continue to question 18).
   b. Increased (continue on to questions 13–17, and then continue to question 18).
   c. Stayed the same (continue on to question 18).
9–12. If the numbers of MLS catalogers decreased, what do you think were the factors involved in that reduction?
   9. Numbers of MLS catalogers decreased due to retirements or resignations
      a. Yes  b. No  c. Don't know
10. Numbers of MLS catalogers decreased due to less need for MLS cataloging skills
    a. Yes  b. No  c. Don't know
11. Numbers of MLS catalogers decreased due to position and/or funding reallocation to other areas of the library
    a. Yes  b. No  c. Don't know
12. Numbers of MLS catalogers decreased as fewer qualified candidates applied to fill vacant positions
    a. Yes  b. No  c. Don't know
13–17. If the numbers of MLS catalogers increased, what do you think were the factors involved in that increase?
   13. MLS catalogers needed with knowledge of special languages, subjects and/or formats (such as, Slavic languages, music, electronic resources, maps).
      a. Yes  b. No  c. Don't know
14. MLS catalogers needed with more advanced knowledge of technological innovations in cataloging (for example, metadata experience)
    a. Yes  b. No  c. Don't know
15. MLS catalogers needed for supervisory/leadership skills/roles.
    a. Yes  b. No  c. Don’t know
16. MLS catalogers needed as trainers.
    a. Yes  b. No  c. Don’t know
17. MLS catalogers needed for special projects (for example, retrospective conversion, database clean-up).
    a. Yes  b. No  c. Don’t know
18. Does your library currently have MLS cataloging vacancies?
    a. Yes  b. No (continue on to question 20)  c. N/A (continue on to questions 20)
19. If yes, have these vacant MLS cataloger positions not been advertised due to a reduction in the Library’s budget?
   a. Yes  
   b. No

20. Has your library lost MLS cataloging positions?
   a. Yes  
   b. No (continue on to question 22)  
   c. N/A (continue on to question 22)

21. Were these positions lost due to a reduction in the library's budget?
   a. Yes  
   b. No

**Recruitment of Catalogers**

22. When did your library hire its last MLS cataloger?
   a. Within the last year  
   b. Two to four years  
   c. Five or more years

23. Since 1998, has your library had problems recruiting MLS catalogers?
   a. Yes (continue on to questions 24–29, and then continue to question 30).b. No (continue on to question 30).  
   c. N/A (continue on to question 30).

24–27. There are a number of reasons why a library may have difficulty recruiting MLS catalogers. In your opinion, were
the following factors part of the difficulty at your institution? Circle your answer
24. Lack of qualified applicants yes  no  don’t know
25. Criteria for tenure or continuing appointment yes  no  don’t know
26. Desirability of the community or institution’s location yes  no  don’t know
27. Lack of a competitive salary yes  no  don’t know

28–29. Which of the above factors was the most significant and second most significant factor in your library’s difficulty in
recruiting MLS catalogers? Put number of item in the appropriate box.
   _______Most significant
   _______Second most significant

**Changing Cataloger Roles**

30. Since 1998, has the amount of time the MLS catalogers in your library spend on cataloging….  
   a. Decreased (continue on to questions 31–38, and then continue to question 46).  
   b. Increased (continue on to questions 39–45, and then continue to question 46).  
   c. Stayed the same (continue on to question 46).

31–36. If the time MLS catalogers spend on cataloging has decreased, in your opinion were the following conditions a factor in that reduction? Circle your answer
31. More cataloging being done by paraprofessionals yes  no  don’t know
32. MLS catalogers knowledge/experience needed for training yes  no  don’t know
33. More time spent on library service (library committees) yes  no  don’t know
34. More time spent on tenure requirements or continuing appointments yes  no  don’t know
35. More time spent on cataloging related activities (systems integration, vendor product implementation) yes  no  don’t know
36. More time spent on cataloging related activities (systems integration, vendor product implementation)
   _______Most significant
   _______Second most significant

37–38. Which of the above factors was the most significant and second most significant factor in the reduction of time MLS
catalogers spent on cataloging. Put number of item in the appropriate box.
39–43. If the time MLS catalogers spend on cataloging has increased, in your opinion were the following conditions a factor in the increase? Circle your answer
39. More items to be cataloged yes  no  don’t know
40. Fewer total catalogers to do the work yes  no  don’t know
41. More materials lack established cataloging guidelines yes  no  don’t know
42. Priorities changed by administration yes  no  don’t know
43. Improved access desired (subject headings, classification numbers) yes  no  don’t know
44–45. Which of the above factors was the most significant and second most significant factor in the increase of time MLS catalogers spent on cataloging. Put number of item in the appropriate box.

____ Most significant
____ Second most significant

46. In light of the changing nature of cataloging, how strongly do you feel your library has encouraged the continuing education/training of MLS catalogers?
   a. No encouragement   b. A little   c. Medium   d. Strongly encourages   e. Don’t know

47. How often does your library use vendor-based products to assist with cataloging (such as outsourcing, PromptCat, Serials Solutions)?
   a. Never   b. Sometimes   c. Often   d. Don’t know

If never or don’t know, continue on to question 49.

48. If seldom, sometimes, or often, was the decision to use vendor-based products due to:
   a. Lack of qualified MLS or support staff catalogers to do the cataloging
   b. Library budgetary issues
   c. Both lack of catalogers and budgetary issues
   d. Other, please specify:

49. Has your library made any effort to showcase and explain the knowledge, skills and roles of MLS catalogers to other areas of the library and university community?  
   a. Yes  
   b. No

If yes, please elaborate on what your institution has done.

50. Would you recommend someone consider an MLS degree in cataloging?  
   a. Yes  
   b. No

Future State of Cataloging/Catalogers

The following are several different scenarios for the future of MLS catalogers in the library profession as a whole. Please respond if you strongly disagree, disagree, agree, or strongly agree to the following statements.

51. Libraries will recruit for beginning level MLS cataloger positions.
   a. Strongly disagree  
   b. Disagree  
   c. Agree  
   d. Strongly agree  
   e. No opinion

52. MLS cataloger responsibilities will shift from cataloging to more administration and management tasks.
   a. Strongly disagree  
   b. Disagree  
   c. Agree  
   d. Strongly agree  
   e. No opinion

53. MLS cataloger responsibilities will shift from cataloging to more training tasks.
   a. Strongly disagree  
   b. Disagree  
   c. Agree  
   d. Strongly agree  
   e. No opinion

54. Libraries will hire graduates with subject and/or language degrees and train them in cataloging skills and knowledge.
   a. Strongly disagree  
   b. Disagree  
   c. Agree  
   d. Strongly agree  
   e. No opinion

55. Libraries will rely more on outsourcing their cataloging materials.
   a. Strongly disagree  
   b. Disagree  
   c. Agree  
   d. Strongly agree  
   e. No opinion

56. This survey has covered many issues that may affect catalogers and cataloging in the future, such as changing numbers and roles of catalogers and the time devoted to cataloging. Overall, do you feel your institution is prepared for these issues?
   a. Very unprepared  
   b. Unprepared  
   c. Prepared  
   d. Very prepared  
   e. No opinion

57. Briefly explain your answer to question 56, giving examples, if possible.

In the following space, please feel free to expand your answers to any of the above questions or comment on the recruitment of catalogers, adjusting or changing workflows specific to cataloging or the future of cataloging in general. Thank you for taking the time to answer our survey and participate in our research.
Beyond Subject Headings

A Structured Information Retrieval Tool for Interdisciplinary Fields

Kayo Denda

Higher education at the start of the twenty-first century is characterized by an increasing number of interdisciplinary fields. Accordingly, the library world is grappling with several important information access issues, including the need to identify relationships within interdisciplinary topics where information is proliferating and locating appropriate resources is increasingly difficult. The relevance and usefulness of controlled vocabularies, such as the Library of Congress Subject Headings in emerging interdisciplinary fields and the suitability of conventional library tools for organizing and accessing digital information, are in question. This paper discusses the role an ontology representing a subject domain can play in addressing these issues and uses women’s studies as an example of an interdisciplinary field. This paper also proposes a methodology to identify ontology terms and their relationships in the field of women’s studies that has potential application to other interdisciplinary fields.

Interdisciplinary fields in higher education are continuing to increase. Traditional organization and classification of knowledge is, in consequence, less relevant, as scholars from different backgrounds produce research that spans familiar boundaries. In response, the library world struggles with:

- the need to identify relationships within interdisciplinary topics where information is proliferating and locating appropriate resources is increasingly difficult;
- questions about the relevance and usefulness of controlled vocabularies, such as the Library of Congress Subject Headings (LCSH), in emerging fields; and
- the suitability of conventional library tools for organizing and accessing digital information in the age of Google.

This paper will explore the role an ontology representing a subject domain (specifically, women’s studies) can play in addressing these challenges.

Noy and McGinness define ontology as “a common vocabulary for researchers who need to share information in a domain. It includes machine-interpretable definitions of basic concepts and the relations among them.” The ontology representing a subject domain can be used in many applications to enhance access to relevant information through its ability to explicitly specify the semantic relationship between concepts expressed in mark-up language computers can parse. The ontology can support libraries in the organization and discovery
of information to benefit their users. Its use behind the scenes can contextualize user-generated keyword searches and direct searches to relevant library resources by mapping to corresponding LCSH in library catalogs, thus providing meaningful overlay and optimizing access to interdisciplinary information. LCSH generally expresses relationships in a hierarchical manner, through topics and subtopics. However, in interdisciplinary fields, terminology represents both peer and subordinate concepts. An ontology can provide the end user with a macro-level view of the predominant concepts and also can drill down to contextualized and domain-specific terms and relationships that can then explicitly map behind the scenes to the hierarchical approach taken by LCSH. This paper proposes a methodology to identify ontology terms useful in the field of women's studies and their relationships. This methodology has potential application to other interdisciplinary fields.

**Interdisciplinarity and the Web**

Interdisciplinarity requires key knowledge of the concepts in more than one field, as well as familiarity with theoretical methodologies from different disciplines. The impact of this research trend for information organization and access is significant. LCSH terms, used in libraries as subject access points in integrated library systems, are a legacy system, heavily hierarchical in design, authority-based, and slow to define and represent new terms for emerging fields and concepts. Although new headings are added regularly as a result of Library of Congress established procedures, they are still insufficient to represent the interdisciplinary relationships of current research and fields of study. In addition, LCSH terms are designed to classify information for the broadest class of users and information uses.

Another significant element that shapes the present scholarly environment is the Internet. The explosion of digital information distribution provides researchers easy access to information in all disciplines. While this new environment encourages researchers to contemplate creative and novel formulations from different disciplines, information abundance increases the complexity of traditional information gathering, raises user expectations for information discovery, and challenges the traditional, linear, subject-based access points that library catalogs provide. The ability to customize search and retrieval strategies according to use, such as curricular support or a particular research focus within a university department, becomes a critical strategy for ensuring that users find the most appropriate resources. An ontology is one tool that can overlay vast amounts of legacy cataloging to provide a specific focus for user access and enhance the catalog's relevance without requiring that materials be recataloged. For example, an ontology can be constructed that utilizes the terminology and predominant concepts from sources, including course titles, course descriptions, and syllabi. This ontology can be used as a search tool to drill down to relevant resources through both keyword and mapped LCSH searches. Unlike a Google search, a carefully constructed domain specific ontology can insure that relevant information explicitly supporting the curriculum is always discovered.

**Information Access in Women's Studies**

Information access, management, and retrieval of women's studies resources have been mined in problems. Scarcity of existing resources and research tools historically required librarians to use unconventional methods for the collection of nontraditional literature. The discipline's interdisciplinarity and inadequacy of coverage are addressed in the literature, along with useful evaluations questioning the coverage and appropriateness of LCSH terms. Positive changes have occurred to LCSH that reflect a better understanding of the discipline and user needs, but the evaluations also found that LCSH has remained inadequate for classification and coverage of women's studies over time. The use of LCSH for the representation and organization of information in library catalogs provides uniformity and consistency, but its rigidity allows little room to express relationships, context, and other attributes that often form the very identity of the resource.

To illustrate the interdisciplinarity in women's studies, the author examined one topic within gender and development (women working at a Nike sneaker factory in South Korea) to demonstrate the complexity and the interrelatedness of concepts within women's studies topics, the difficulty in assigning corresponding subject headings, and the resultant arduous search strategies necessary for locating meaningful resources. To find contextually appropriate resources, a user must be versed in key concepts in economics and women's studies as well as be familiar with theoretical methodology, data, and information on East Asia. Westbrook uses the concept of “scatter” to illustrate interdisciplinary information and defines the field of women's and gender studies as “high scatter,” which makes the information seeking process even more challenging. The complexity of information retrieval in this highly interdisciplinary field is further magnified by the lack of familiarity with women's studies concepts among catalogers, who are often generalists providing cataloging for a multitude of disciplines.

Although established subject headings capturing women's studies concepts exist, they are often not included in bibliographic records due to the cataloger's unfamiliarity with the new terms. Cataloging is a highly collaborative endeavor. Catalogers cope with an ever-increasing work-
load by relying on copy cataloging from trusted sources. This cataloging is often acquired and reused with minimal revision or no revision. Automated tools, such as subject authority systems and those supplied by vendors, provide a safety net for catalogers by matching subject headings against authoritative Library of Congress terms, thus justifying the uncritical acceptance of subject headings provided in existing cataloging records. This reliance on acceptance of existing cataloging makes the frequency with which the subject headings will be evaluated and examined unlikely in most libraries, unless the resource is local in nature, such as a dissertation or thesis at the university, or a unique resource requiring original cataloging. Subject headings are authoritative in the sense that they represent actual LCSH terms, but increasingly they are not evaluated for currency and relevance against competing terms within the LCSH.

Over time, in response to deficiencies in LCSH and compounded by attention in collecting and organizing resources on women to support scholarly and activist interests, major thesauri emerged in the United States, facilitating access and organization for women-related resources. Similar thesauri were also published in Canada, Latin America, and the Netherlands. Although these tools define concepts and relationships in a systematic manner, they are less expressive and flexible compared to machine-readable ontologies.

Issues surrounding access to information in women’s studies are an ongoing challenge for users as well as librarians. These difficulties relate closely to the existing gap between available controlled vocabularies and the representation of knowledge in a subject field. Vocabularies are cultural artifacts that evolve over time and have specific meanings within distinct subject domains. In the case of women’s studies, the discipline evolved from the first debates about the legitimacy of its institutionalization and the effects of discrimination against women to programs where scholars from diverse disciplinary backgrounds focus on women’s issues from multiple viewpoints. Changes in curriculum and research reflect new interests and new paradigms denoting a significant evolution of the field, requiring new tools for optimum information retrieval.

Continuing difficulties in access and potential solutions to the problem are illustrated by scholars’ efforts to alert students to the limitations of LCSH and classification. Class readings on the limitations of controlled vocabularies and course assignments that require students to locate useful keywords demonstrate creative and unconventional efforts by scholars to overcome existing challenges to information access. Access to interdisciplinary information in a particular context represents a newer and increasingly significant challenge that affects users and librarians in all disciplines, and is a serious issue for shaping future library services.

### Impetus for the Study

From a public service perspective, the impetus for this study was twofold: first, to address the continuing difficulty in identifying specific resources on women; and second, to provide a flexible and extensible approach to classifying information that is more responsive to faculty and student needs in a complex, interdisciplinary field of study. At the Rutgers University Women’s and Gender Studies Department, two faculty members recently developed a course curriculum with a focus on the “intercultural factors underlying war and terror that encourage student understanding of gendered legacies of lived experiences, cultures and historical contexts of war and terror, and of the intercultural factors underlying these forms of human aggression.” The course incorporates six three-week modules that examine the intersection of gender and women with topics from other disciplines. The course module titles are “Gendered Legacies of Dirty Wars and Bureaucratic Authoritarianism,” “Partitions, Nations, Gendered Identities,” “Neo-Liberal Terror and the Washington Consensus: Gendered Practices,” “War, Terror, Gender, and Representation: Erotic Victimhood and the Colonial Legacy,” “Representation, Spectacle, and Terror,” and “Gender, Sexuality, War, Empire, Militarism.” The information needs for these modules defy a particular disciplinary focus and require an integrated and multifaceted approach to accessing relevant information.

The information needs for students taking the above courses force the women’s studies librarian to find alternative and creative methods to adapt to the new demands for information discovery and curricular support. In online public access catalogs, LCSH terms alone often do not express these interdisciplinary and dynamic relationships. A list of useful keywords in context is always necessary to supplement the search process in order to obtain responsive quality information. The situation is no different for scholars in all disciplines who pursue research beyond the domain of their discipline. In order to support their research, librarians need to create a mechanism that concatenates disparate terms and concepts from different disciplines and place them in a specific context or structure of knowledge.

### Ontology Applications in Libraries

While controlled vocabularies, such as LCSH, can provide authoritativeness, consistency, and standardization in terminology, relationships among concepts as expressed by terminology are equally critical for effective information
discovery. Much is to be gained from identifying the terms and relationships that express the structure of knowledge embedded in a domain. Recently, the development of the ontology has been used in applications on the Web, such as Yahoo!, which is based on large taxonomies categorizing Web sites, and Amazon.com, which categorizes products and their features to appeal to the potential customer. Standards, such as the Resource Description Framework (RDF) developed by World Wide Web Consortium (WC3) provide tools that make knowledge understandable to search engines and interoperable among different information systems. The Defense Advanced Research Project has developed the Ontology Web Language (OWL) by extending RDF with more expressive constructs aimed at facilitating information sharing on the Web. Many disciplines now develop standardized domain specific ontologies in an attempt to develop vocabularies for shared use. Biology, for example, has established Gene Ontology, which is intended to draw together information from heterogeneous sources for shared use in different fields of biology. Qin and Paling introduce efforts to convert the controlled vocabulary at the Gateway to Educational Materials into an ontology to address issues in representing interrelated digital resources. In any particular field, a well-defined ontology should capture the nuances of the knowledge domain as manifested in the research outputs and teaching tools by defining the concept relationships and explicit domain assumptions central to its research community.

In the context of information access, what are the advantages of an ontology representing a subject domain? Once established, this ontology can be both flexible and portable, existing as an independent information tool that interacts with other information tools and resources. For example, if several institutions create women's studies ontologies and express them using structural machine-interpretable standards, their Web sites could share and reuse the same underlying ontologies and aggregate information dynamically for different uses. The result is greater flexibility that enables reuse for different applications.

Using the previously cited example of globalization, the established heading in LCSH is as follows:

Globalization
Used for/See from: Internationalization
Search also under: International relations
Anti-globalization movement
Art and Globalization
Architecture and globalization
Education and globalization
Culture and globalization
Sports and globalization

The preceding relationship is sufficient to point successfully to general information. However, for access to information pertaining to globalization in the context of women's studies, the existing relationship is inadequate. In contrast, the following ontology on a specific facet of globalization presents a contextualized domain knowledge that establishes important relationships as it is in the field of women's studies. Figures 1 through 3 provide an example of a specific facet of globalization ontology, the relationship among concepts, as well as the ontology expressed in OWL. The proposed ontology consists of three elements:

1. class and subclasses;
2. attributes (such as property) of each concept (classes and subclasses) describing various features; and
3. instances (restrictions providing specificity for abstract concepts).

The class “Globalization” has four subclasses: “Exploitative dynamics,” “International trade,” “Transnationalism,” and “Off-shore Manufacturing.” “Off-shore manufacturing”
subdivides into three subclasses consisting of factories manufacturing different products: “Textile Factory,” “Garment Factory,” and “Sneaker Factory.” The subclass “Sneaker Factory” has four attributes: “Brand,” “Worker,” “Location,” and “Wage,” which have instances “Nike,” “Women,” “South Korea,” and “Low” respectively.

When examining the consequences of globalization on women’s work in South Korea, another relevant class is “Women and Work,” subdivided into “Work” and “Family.” “Work” has three subclasses: “Sneaker Factory,” “Farming,” and “Home Based.” The subclass “Sneaker Factory” is simultaneously a subclass under “Off-shore Manufacturing” and “Work.” This cross-class relationship enriches the relationship among classes, thus providing explicit connections for a holistic knowledge representation in a particular context. In this case, it provides the linkage between the concepts “Globalization” and “Women and Work,” one of the critical interests among women’s studies scholars today. At the same time, the ontology allows search engines to aggregate information dynamically. More different classes can be brought together and dovetailed for a different research or teaching focus; these established ontologies can be reused in a different context.

The globalization ontology can sit at the top of a Web portal, for example, as a searchable discipline-specific tool in a research guide that enables the user to drill down to the desired context to launch searches against the library’s catalog. Because it is an overlay and not embedded in metadata, it can be readily revised, customized for local practices or specific needs, and repurposed for different uses. A mapping between the ontology and LCSH in library online public access catalogs would occur behind the scenes to retrieve information seamlessly from the user viewpoint. This mapping combined with keyword searching of ontology concepts adds currency for a new disciplinary focus that is appearing in syllabi and in conference programs, but not yet captured in LCSH. The ontology offers an approach with minimal overhead to adding specificity, currency, and interdisciplinarity to the organization of a tremendous amount of legacy library resources cataloged utilizing LCSH. The ontology can also serve as a bridge between digital library initiatives that often employ newer metadata standards and many different vocabularies and the legacy data, both print and electronic, that most libraries describe using the AACR/MARC cataloging standard and LCSH. The ontology can also be used for collection development, particularly in conjunction with a mapping to LCSH or to the classification system in use, to determine gaps in the collection with regard to curriculum and research support. The ontology thus represents an additional tool to improve overall information exchange between the user and resources. The diagram in figure 4 illustrates the relationship between the user, the ontology, the LCSH terms, and resources. The ontology serves as the translator behind the scenes that provides the user more contextualized access to the information in library catalogs.

**Figure 2. Globalization and women and work ontologies and relationships**

**Harvesting Concepts for the Ontology**

How can librarians identify and harvest specific concepts of a domain to create an ontology? This study used the discourse analysis methodology in an attempt to isolate tacit knowledge grounded in women’s studies practices and structures. It took the approach that researchers’ and activists’ writings, including books and dissertations, course syllabi, conference programs, and curricula, collectively form the current knowledge structure of women’s studies as a disciplinary field. Writing and teaching are
part of a cognitive process that is embedded not only in what the author or teacher knows, but also in how the topic is treated, how the topic is structured, and the relevant components, from the author or teacher's viewpoint. The incorporation of the subject domain's tacit knowledge is fundamental to developing an ontology that can be an effective tool in mediating between the user and the resource. Strong and Drott discuss the importance of increasing the number of thesaurus term relationships in order to create a meaningful information retrieval application for all users. This effort is even more critical in facilitating the predominantly unassisted and frequently off-site information seeker.

Ontology editors such as Protégé (developed by Stanford University), OntoEdit (developed by Institut für Angewandte Informatik und Formale Beschreibungsverfahren at Karlsruhe University), and COBrA (developed at the University of Maryland Baltimore County) exist. These tools let domain experts build knowledge-based systems by defining classes and class hierarchy, the relationship between classes, and the attributes of these relationships. The central question is how to identify relevant concepts to build a domain-specific ontology. Using women's studies as a case study, the author examined selected material to gather the key concepts and learn the current organization of this interdisciplinary field. The current domain knowledge reveals relationships established by actual usage within research and the curriculum rather than a more generic and generally applicable traditional subject hierarchy. This is particularly suited toward the customization of information for specific use and for its relevance and currency in the field. The terms identified and their contextual relationships thus reflect the active usage of professional terminology—the terms that the students hear in class and capture in notes or that faculty use when writing research articles. The focus was on identifying persistent and highly relevant text elements and relationships in the current discourse of women's studies, including new patterns of approach, theoretical frameworks, and different methodologies and manifestations. Van Dijk states that "by mentioning something repeatedly in the discourse, subjects can be led to believe that this item plays an important role in the microstructure of the discourse." The sample material examined represents a cross-section of teaching material, research output, and mission statements and foci expressed in departmental descriptions in homepages. These were:

- American universities and colleges women's and gender studies undergraduate and graduate courses' syllabi.

[Diagram: Figure 3. Globalization and women and work ontologies expressed in OWL]

[Diagram: Figure 4. Relationship between user, ontology, LCSH and information]
• Undergraduate and graduate course syllabi and required reading lists from Rutgers University Women’s and Gender Studies Department from 2001 to 2004.
• Women’s and gender studies departmental foci as expressed in American university home pages.
• Abstracts of dissertations in UMI Proquest Digital Dissertations with the title word “women” from 2000 to 2004.

The above resources were analyzed to identify terms expressing important themes as well as relationships in the text elements of each title/resource. A record was created for each resource, with categories of information classifying the resources holistically and comprehensively. The record for departmental foci and monographs consisted of seven categories: title, level, concept, theory, approach, terminology, and geo-political context. For course syllabi, the record also included course level (undergraduate or graduate), resulting in eight categories. Finally, for dissertation abstracts, the record included the department and institution where the work originated, resulting in nine categories. Captured data contained the text elements highly prevalent in each resource by categories. When analyzed collectively, more weight was allocated for prominent text elements, such as course syllabus objectives or required readings title phrases. The frequency of appearance was also considered a primary indication of how important the term was in the field of women’s studies. In addition to the predominant presence of gender, race, ethnicity, sexual orientation, and class, the texts revealed women’s issues from around the world, focusing on historical as well as contemporary issues and exposing traditionally unrelated facets and concepts, such as “citizenship” and “feminism,” or “conflict” and “women,” thus creating a composite structure less orthodox and narrow taxonomic discipline categorization in the LCSH. Women’s studies is an interdisciplinary field characterized by broad subject coverage, diverse approaches in both scholarship and teaching, and changes in the discipline generally. It is therefore an excellent test case for the ontology application.

Although outside of the scope of this paper, further analysis of collocation and proximity of terms in two or more categories could reveal areas that are frequently juxtaposed and investigated together in contemporary women’s studies. Prevalent approaches in graduate or undergraduate instruction; commonly explored concepts, methodologies, geographical areas of interest; and persistently used reading materials are some examples of data that can be identified. Collection and analysis of this data can produce more in-depth information on research and teaching trends of a specific research community, thus providing the library with data for a focused direction in the provision of its services, including collection development, cataloging, reference services, and instruction.

Existing Strategies for Optimization of Information Retrieval

Strategies for optimizing electronic information retrieval are well represented in literature. In libraries, approaches generally involve analysis of user interaction with specific databases or subject resources. In an effort to identify and include the user's perspective in the information retrieval process, Jantz identifies keywords for the Rutgers Alcohol Studies Database by analyzing the user query statements during the information retrieval process. Based on a cognitive viewpoint, López-Huertas discusses a methodology to harvest salient concepts and relationships from the body of representative texts in the field of music to formulate a thesaurus structure, also an intermediate structure, on the topic of musical instruments. Thesauri provide relationships between concepts through broader term, narrower term, and related term. The fundamental difference between a thesaurus and an ontology is the level of abstraction and the stronger expression of context and relationships between terms in the ontology. The aforementioned strategies from Jantz and López-Huertas demonstrate efforts to align information retrieval strategies with successful access to relevant information.

In the commercial sector, database, search engine, and integrated library system vendors are aggressively marketing portals with federated search capabilities and modules where the mapping between the user-generated keyword and relevant information occurs seamlessly. Unlike online public access catalogs, these new initiatives use vocabularies from unspecified sources, which does not provide the user with confidence that the controlled vocabularies are rigorously established and maintained. The vocabulary harvesting and ontology creation proposed in this paper offers an additional strategy that can serve as a model for providing access to information in interdisciplinary fields.

Discussion

The knowledge structure represented in texts reflects the current reality of the field and the elements of a domain, that is, the key competencies necessary for understanding the domain as well as emerging concepts representing new developments, and anticipation of the discipline’s growth areas. Librarians can use such ontologies as a guide in collection development to align resource purchases more closely to course offerings and curricula, support core dis-
cipline competencies, and directly address research clusters in the departmental or program structure. The ontology of a field can be customized to reflect the particular focus of the university’s department or a research institute, which is often based on the research interests of its faculty and may change over time as the faculty body itself changes. The ontology can customize the structuring of information resources by working in tandem with the more generally applicable LCSH. It can connect legacy resources and digital resources that may be part of a digital repository. An ontology may be tailored to the specific needs of individual researchers. The ontology’s flexible structure can adapt to new and evolving disciplinary demands and local needs and create a bridge to appropriate information, whether collected in legacy databases, created as the result of a research grant, or housed in a digital repository.

**Currency**

Current publications representing research and practice in a field are known collectively as ‘generators’ texts.’

Harvesting terms and concepts from generators’ texts aligns information description and discovery to current domain concepts and enables new strategies in the provision of library services. Maintaining an ontology as an effective, cutting-edge tool is a challenge for libraries. The collection of natural vocabulary identified directly from the scholarly output, which is then organized into a domain-specific ontology that reflects terms and relationships, can be an innovative tool to insure relevance and timeliness of resource discovery, particularly for interdisciplinary and volatile fields of study. However, an ontology cannot be a one-time project, but instead requires systematic attention, including automatic generation of terms for continuously reviewed information sources and evaluative revisions to keep the ontology responsive to user needs. The user community, particularly the faculty that do research and provide teaching, should be involved in the evaluation of an ontology. Fortunately, involving users in ontology evaluation is much more achievable than involving users in the analysis of LCSH.

**Comprehensiveness**

The strength of the ontology model for information description and retrieval lies in its flexibility as a tool for capturing and documenting concepts and relationships within a discipline to explicitly display the current knowledge structure for users. Users often do not know what they do not know. Providing the knowledge structure holistically, so that all relationships between terms are exposed, helps users to understand the breadth and scale of a discipline. This can enable them to focus their research in the context of the discipline and understand the nuances and the extensibility of the domain, which may challenge the traditional discipline boundaries.

**Flexibility**

As an external element to the object metadata or bibliographic elements, an ontology enables easy addition or deletion, as necessary, of terms representing local needs and the interests of local users and operations. A single ontology in a discipline can be repurposed for use within a subdiscipline, a course within the discipline, or even by a complementary field of study. Alternatively, an institution-specific women’s studies ontology, for example, can be repurposed and made compatible with that of another institution. Users from both institutions can access each other’s resources, thus benefiting collaborative research and teaching. This model is particularly attractive for collaborative projects between units located at different campuses or institutions, where the participants are geographically separated but in need of a common body of resources. The ontology is intended to supplement, rather than supplant, the relevant LCSH terms. As noted above, it is intended to bridge newer access methodologies and digital collections with the vast array of legacy resources in the library’s catalog. As library information systems evolve into a personalized portal that organizes broad search results into narrowly defined categories, a well-designed domain specific ontology can be an essential tool to ensure effective information access.

**Further Research**

In order to validate and assess the benefits of this approach, further tests in different interdisciplinary areas, such as bioinformatics or Latin American studies, are needed. Due to the differences in structures of knowledge in the sciences or area studies, the approach described in this paper may be insufficient. In the sciences, for example, because grant awards directly shape research direction, grant reports (frequently maintained in grants and contract departments rather than libraries) should be considered as additional texts for analysis. A rigorous examination and analysis of all text elements selected to create the proposed ontology is needed to gauge its value and to assess its universal significance. The resulting refined methodology could substantially increase relevance in the user information discovery process.

Another data source with valuable information is the community of faculty members, researchers, students, and activists in a discipline. Direct interviews, or data gathering, can supplement and add new and emerging areas of research interest that have yet to materialize as research outputs. Attendance at lectures and presentations sponsored by academic units and centers offer opportunities for librar-
ians to educate themselves on the new interests of the users they serve. This proactive measure can provide a valuable glimpse of the direction of research.

Finally, while contemporary resources are useful for identifying current concepts and relationships, the ontology needs to be extended to historical structures of knowledge in order to reflect the abstract structure of knowledge not just in current expression. The ontology described in this paper reflects the state of the art of a discipline and serves the immediate and emerging needs of users. However, a more historical focus would provide a clearer understanding of the evolution of the field itself. This role was beyond the scope of this project, and the author acknowledges the need to accommodate the historical development of the field, particularly to accommodate the older research outputs that are available in a library’s collection.

Conclusion

Using the example in women’s studies, this paper discusses the value of an ontology representing a subject domain and its applications for information classification and discovery and access in interdisciplinary fields. The paper suggests that the methodology described can serve as a model to identify structures of knowledge in women’s studies and in other interdisciplinary fields. The quality of information retrieval can be measured according to the degree of match between the user and resources. If tools, such as ontologies, mirror the paradigm of a particular research community, research should be more effective. By connecting users to relevant information not possible in LCSH, libraries can provide better information services.

Ontologies have other applications in libraries, ranging from knowledge organization to evaluative categories for collection development. Defining a proper ontology with complex relationships provides the user improved access to significant resources within libraries. In the case of women’s studies, ontologies can increase the interoperability of women’s studies Web portals and provide better access to online nontextual collections in digital libraries. This process in turn would greatly contribute to the broader dissemination of women’s resources and would open new frontiers of knowledge organization and exchange on the Web. The flexible nature of ontologies enables libraries to develop, repurpose, and share domain specific ontologies with other institutions. Collaborations in this manner benefit collaborative research and will enhance access to information for all users. Given the current academic research environment, interdisciplinarity will continue to grow, thus challenging the traditional boundaries of disciplinary fields. Information access and organization are areas of ongoing responsibility for libraries. This paper presents one potential tool for moving libraries forward in the development of innovative strategies for organizing information and making it more accessible to users.

References

11. Raymond Williams, Keywords: A Vocabulary of Culture and Society (New York: Oxford Univ. Pr., 1983).


17. Ibid.


19. Qin and Paling, “Converting a Controlled Vocabulary into an Ontology.”


Notes on Operations

Online Book Selling at the Smathers Library Bookstore

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In fall 2003, the Smathers Library Bookstore instituted a one-year pilot project selling surplus gift books online. This paper describes how the bookstore staff researched, prepared, and embarked on online book selling. It illustrates how the bookstore staff selected the online book selling agent, Alibris, as the Web site utilized for their online selling, and provides details in the methodology of listing books for sale in the used book market. The paper presents the responses to questions asked of staff at two other libraries selling books online, and concludes with a summary of the online sales project.

The University of Florida (UF) Smathers Library’s Gifts and Exchange unit is the central receiving area for incoming gift materials donated to the main and branch libraries. The Smathers Library has gift acceptance policies and procedures that are consistent with other large academic libraries, and benefit from thousands of donated books, serials, and other items each year. The library views gift donations as an excellent method of bolstering collections by adding items not previously held, filling gaps in periodical holdings, or replacing missing and damaged monograph titles. In fiscal year 2003–2004, the Gifts and Exchange unit received 15,678 gift items.

To better serve library donors and to improve efficiency, the Gifts and Exchange staff routinely send a library van to collect material gifts from donors on campus and in the local community. Though offering van service requires staff time and small demands on library facilities, the library realizes that collecting gift materials at a donor’s office or residence improves goodwill and is an ideal way to increase donations to the library. After receipt of the donations, student assistants search the online catalog for each book and serial title, filling out slips with appropriate information to assist the gift review process. Collection managers then perform the review of the searched gift materials and select suitable new titles or replacements for missing library holdings.

As is the case with numerous libraries—whether large or small, academic, public or private—a large percentage of donated gift materials received at UF is not added to library collections. Of the 12,619 books donated to the Smathers Library in fiscal year 2003–2004, 69 percent went unselected for library collections, leaving 8,727 surplus gift books for sale stock. Consequently, unselected gifts become problematic, and libraries dread the backlash of bad publicity, angry donors, and misunderstanding that can result from disposing of surplus gift books. To counter possible negative reactions, the Smathers Library developed procedures and a policy stating that all gift materials accepted by the library become the property of the library; after collection managers review and select appropriate items from the donation, the library can sell or discard surplus gifts as needed. The Gifts and Exchange staff are forthright with prospective donors, bringing this policy to their attention before accepting any gifts. The staff also requests donors to read
Proposal for Online Selling

The Gifts and Exchange unit has the responsibility of managing the bookstore. From August 1999 through July 2004, the store grossed $42,947.27, or approximately $8,000 per fiscal year. Based on this yearly gross income, the library considers the bookstore a success. Nevertheless, the bookstore staff themselves noted that too often finer-quality or first-edition books were selling at the standard price of three dollars. At other times, the staff watched local book dealers and online book sellers purchase large stacks of books and realized the bargain prices would convert into substantial profits for the dealers through later resales. The staff working in the store made every effort to sell specially identified items at higher prices to book dealers and collectors, as well as highlighting their availability to all bookstore customers by means of a display window and case. Among the specialty books selected from the stock were first editions, university press publications, architecture and art books, and other specialized pieces. Although these efforts were relatively successful, the staff felt that too often books with high value on the used book market continued to sell at bargain bin prices. The bookstore staff ultimately concluded that it was in the library’s best interest to undertake online book selling in an effort to truly maximize revenue from the used book market.

Regardless of the plan to begin online selling, the staff did not want to detract from the existing success of the bookstore. The store not only realizes a tidy profit, its location on the first floor of the Smathers Library is an excellent promotional tool for the library development office. For these reasons, the staff aimed to maintain sales in the bookstore by not removing all the best stock for online selling. One important objective then was to endeavor to strike a balance between selling the finer books online and selling to bookstore patrons and book dealers. Because online selling would require administrative approval, the staff researched library literature and sent a small questionnaire to representatives in other libraries with online selling experience. Based on the information gathered, the staff planned to develop and submit a proposal for a one-year pilot project. A one-year window would provide the time necessary to monitor any fluctuations in online sales that might arise from academic semesters and holiday schedules. After careful weeding from unselected gifts stock, the bookstore staff collected several hundred finer-quality books to sell online. Choosing to be cautious, the staff set goals of selling twenty books a month and earning $2,500 in online sales for the year.

Literature Survey

Several articles have detailed the methods some libraries have developed to increase profits from the sales of surplus gift and withdrawn materials. The impetus to sell the finer quality donated books through auctions is well documented, as is the subject of opening bookstores in lieu of traditional library book sales; articles dealing with libraries selling materials online are harder to find. Although selling used books on the Web has been occurring for several years, libraries using the Internet as a means to dispose of and profit from selling withdrawn or surplus gifts is a relatively recent development.

Articles focusing on public libraries using the online auction site eBay to sell materials in lieu of traditional book sales include Schenker’s “Book Sale Adds Internet.” Baxter’s “Your Discards May Be Somebody’s Treasure,” serves as an ideal first reading venture into the online book business. Hill wrote “Selling Withdrawn and Gift Books on eBay: Does It Make Sense?” This article reported how the Friends of Los Gatos Public Library use eBay to auction donated materials. Hill described the procedures the volunteers use as they sort through donations to find books worth selling on eBay and the steps taken to add, describe, and set a beginning auction price on eBay. He furnished useful information to those contemplating selling donations online and included a table of the average time it takes the volunteers to list items, correspond with buyers, and package and mail a book using eBay. According to his statistical analysis, the entire process takes 65.6 minutes per title. Hill admitted that selling books on eBay is labor-intensive and does not recommend online selling as an activity suited for salaried library staff. Still, the Friends group did earn $6,700 by selling 167 books in eighteen months. Hill concluded “although time-consuming, selling unneeded books on
eBay returns a steady stream of revenue to the library.11

In the short case study, “Director, Do Thy Bidding,” Rogers used a simulated conversation, based on actual events, between a public library director and an assistant library director to illustrate how a library is using eBay to both buy and sell materials for their collections.10 The director defended selling seldom-used archived items from its special collections in order to generate money to offset a small book budget. In response to this dialogue, two librarians, Gilmore and Weil, offered their analysis of a library procuring funds by selling online. Gilmore saluted online selling of unused library materials to bolster a budget.11 Weil agreed that online selling is a useful activity, but noted that—before selling library materials—a public library should consult with its collection development policies, the library board, the community at large, and other staff to ensure the procedures for sales are clear and that all agree with them.12

In Doylen’s “Experiments in Deaccessioning: Archives and Online Auctions,” the author discussed the “legal, ethical, and practical issues raised for archivists interested in using on-line auction sites to deaccession unwanted material.”13 After assessing the legal and ethical implications, the collection management policies, and the procedure that an institution should consider before and after withdrawing materials from holdings, Doylen noted that “On-line auction sites provide archives with an innovative, expedient, and cost-effective means of selling unwanted items.”14 Doylen drew on his own experience supervising a successful online selling program, describing in detail the auctioning of unwanted archival and special collections materials on eBay. In regard to a sensitive public relations issue so often affecting libraries, the author offered an encouraging summary, “initial concerns about negative public response to the sales lessened over the course of the experimental program. . . . The Archives received no negative responses to its selling program from the general public.”15

Finally, two articles published on the rising used-book market are also worth notice. The first, “Online Used-book Sales Concern Some Publishers,” raised the concerns of the book publishing industry in the manner some book selling sites sell used books.16 According to some industry experts, commercial book selling sites, such as Amazon.com, list available used copies alongside the new editions, thereby offering customers cheaper alternatives. The fact that used books sales corner 15 percent of the 3.5 billion dollar book market shows the high stakes involved.17 The second piece, Brown’s “The Used Book Market Grows,” presented the results of several interesting studies performed on the used book market.18 In 2002, a study conducted by Ipsos Book Trends revealed that “consumers purchased more than 100 million used books worth half a billion dollars.”19 An even more applicable study is one cited by Brown that published the results of survey responses received from more than 800 book sellers; this report noted that online sales account for half of all retail sales of used books.20

**Data Collection**

It is not uncommon to read messages on library electronic discussion groups and bulletin boards about the problems facing libraries as they dispose of unwanted gift and withdrawn materials. Librarians and library staff exchange experiences, tips, and policies on using book sales and book dealers to generate revenue while reducing stockpiles of gifts. In recent years, the subject of utilizing the Web to sell surplus materials has often become the focus of these discussions. Many of the postings have come from library staff who have little experience selling books online but are interested in pursuing this activity. Other messages originate from library staff with experience selling online, and, though the posted messages describe various obstacles and problems encountered, it is apparent some libraries are discovering that selling surplus materials online can be quite profitable.

To better understand the procedures and methods used by libraries selling online, the Smathers Library bookstore staff developed a brief questionnaire (see results in table 1) and sent it to representatives from two academic libraries with experience. The two libraries were the Engineering and Physical Sciences Library of the University of Maryland (EPSL) and the University of California, Riverside (UCR). Though both libraries are selling surplus materials online, they use different sites: EPSL uses Half.com, and UCR uses Alibris. Their responses permitted the Smathers Library Bookstore staff the chance to compare and contrast experiences with two online sites. The results of the questionnaire are interesting and reveal many positive aspects of selling online.

The questionnaire was sent to each library in spring 2003. EPSL had just started a yearlong pilot project to sell surplus books online. The results of the questionnaire are based on the respondent staff member's one-month experience managing the online selling at the library.21 A later e-mail message to a discussion group confirmed that after six months, EPSL's success with online selling was continuing. More than 170 books sold at approximately $24 each, with a gross profit exceeding $4,500.22 Offering a dual perspective, two librarians from UCR responded. The first was a librarian (now working at a different library) who managed online selling from the start up, the second was a librarian who has since taken over its management. Their response show that the success UCR had with online selling is continuing in a profitable and very organized man-
ner; their feedback was incorporated into one composite response.23

The questionnaire explored libraries’ procedures and experiences with online selling. The responses from the two libraries show pronounced similarities. Both libraries:

- sell only books;
- continue to hold book sales on campus;
- earn higher profits per book than what they receive in the book sales;
- use spreadsheets to record the books sold online;
- have inconsequential returns (one or none);
- attach basic “non-book dealer” descriptions for online listings; and
- rate their online selling experiences as very positive.

Additionally, both libraries take advantage of Half.com and Alibris offering “template” records that provide basic bibliographic information (that is, title, author, imprint information).

Another similarity between the two libraries and their experiences selling online is their positive responses to the question regarding the number of items sold and the average amount of each sale. In one month, EPSL grossed $755.76 by selling twenty-six books at an average of $29.06 per item. From December 2000 through March 2003, UCR grossed just more than $29,000 by selling approximately sixty-nine books per month and averaged around $15 per item. Also comparable is the staff time needed to list, record, and package books sold online. EPSL reported that managing online selling takes about three-and-a-half hours of staff time a week. According to the two librarians from UCR, after the initial eighty hours of staff time necessary to list their books in Alibris, between four and six hours per week were required to continue listing and selling books. Both libraries reported that the staff hours spent on managing the online selling were more than acceptable.

Excluding the length of time each library had been selling online (UCR for more than two years, EPSL for just one month), the differences between the two libraries’ experiences are negligible. Because Alibris mandates that its sellers inventory several hundred books, UCR used eighty hours of staff time to list their books at the onset. EPSL, facing no such minimum requirements using Half.com, did not have to manage such an initial large block of staff time to list their books. While originally UCR did not have its organizational name appear in the books listed for sale through Alibris (the site did not require the seller to list their name), this policy has changed and “UC R Regents” now appears in the listings. Half.com requires listing the book sellers, so EPSL uses an abbreviation that does not reflect back on the library or university.

### Alibris Selection Process

At the American Library Association’s 2003 Annual Conference, the Association for Collections & Technical Services Acquisitions Section Gifts and Exchange Discussion Group offered a program on libraries and online book selling.24 At this informative roundtable discussion, representatives from Alibris and Abebooks made presentations summarizing their companies’ operations. After a question-and-answer period, the vendors and audience participated in a roundtable discussion that shared information and experiences on the online selling of duplicate and unwanted library gifts.

eBay and its cousin, Half.com, both offer huge sales markets. Unfortunately, eBay and Half.com operate in a manner that creates serious obstacles for a library organization that reports to a state fiscal agency. One possible obstacle for state institutions arises from eBay and Half.com’s policies requiring a seller to register using a credit card and subsequently

### Table 1. Responses from other libraries selling books online

<table>
<thead>
<tr>
<th>University of Maryland Engineering &amp; Physical Sciences Library</th>
<th>University of California–Riverside Library</th>
</tr>
</thead>
<tbody>
<tr>
<td>Months of experience selling books online at time</td>
<td>1</td>
</tr>
<tr>
<td>Number of books sold</td>
<td>26</td>
</tr>
<tr>
<td>Gross sales</td>
<td>$755.76</td>
</tr>
<tr>
<td>Average price per book</td>
<td>$29.06</td>
</tr>
<tr>
<td>Length of time items listed online</td>
<td>Until sold</td>
</tr>
<tr>
<td>Method used to track items in-house</td>
<td>Spreadsheet</td>
</tr>
<tr>
<td>Service used</td>
<td>Half.com</td>
</tr>
<tr>
<td>List library’s name online</td>
<td>No</td>
</tr>
<tr>
<td>Hours spent per week by library staff selling books online</td>
<td>2</td>
</tr>
<tr>
<td>Number of returned items</td>
<td>0</td>
</tr>
</tbody>
</table>
charging specified services and refunds to the holder of the card. Even though many state bureaucracies, including the University of Florida, permit the use of state issued credit cards or payment cards (p-cards), often state accountants closely monitor the p-cards and severely restrict their use. The Smathers Library Business Office considered this credit card requirement a major deterrent in allowing the bookstore to use either eBay or Half.com. Another concern voiced by the library’s business office was the manner in which the Smathers Library would receive payments from book buyers on eBay and Half.com. Both eBay and Half.com offer their buyers various methods for payment, including credit cards, checks, money orders, and an in-house credit card payment system called PayPal. Tracking such diversified payments would be very labor intensive and could present accounting problems with state auditors.

Alibris operates differently than eBay and Half.com and presents a more acceptable system for an academic state library. Presently, a seller must list a minimum of five hundred titles to be a certified book seller on Alibris, but the registration process is relatively fast, simple, and does not require the use of a credit card. Besides listing a seller’s stock onsite, a seller’s books listed on Alibris are searchable from other online retailer sites, such as Amazon and Barnes & Noble. As items sell, Alibris monitors the sales and handles the payments from the buyer. At the end of every month, Alibris sends a check to the seller for all items sold during that period. Because Alibris acts as the brokering agent between buyer and seller, they deduct a 20 percent fee from the list price for each book sale. Working within this system, the seller avoids time-consuming correspondence or problems with buyers and receives payments consistently. Alibris also acts as the middleman for all returns. When a book buyer wishes to make a return for whatever reason, Alibris will handle the correspondence, return shipping of the item, and refund the buyer. For a seller, this system is very efficient and far less aggravating than having to deal with buyers and returns directly.

After reviewing the library literature, attending the Gifts and Exchange Discussion Group’s program, and conducting a questionnaire, the staff determined that online selling could succeed at the Smathers Library Bookstore. Library administration agreed with this assessment and, in August 2003, gave approval to a one-year pilot project for selling books online. Based on discussions with representatives from Alibris, and from the favorable questionnaire responses received from the librarians at UCR, the bookstore staff chose to register the store as an Alibris seller.

Listing Books Online

Once registered on Alibris, book sellers obtain access to the site’s Seller Hub with its in-house database system, Inventory Manager. The Inventory Manager database contains thousands of book records, and each record contains pertinent information regarding title, author, publisher, year of publication, edition, size of the text, and so on. To list a book for sale, the seller first searches the Inventory Manager to find the title and correct edition. If the exact record is located, the seller merely opens the “Add Item” template, updates bibliographic information, describes the condition, and prices the book. To simplify the process, Inventory Manager offers several pull down menus and check boxes for indicating whether a book is a signed copy, a first edition, and its general condition (fine, very good, good, and so on). Additional note fields are available for the seller to describe the book and dust jacket’s condition in more detail. If the book is not found in the inventory, a blank template is provided for the seller to create original records. The staff estimates that more than 80 percent of the titles they search on Alibris have records in Inventory Manager, which saves considerable time.

Early into the online selling project, bookstore staff kept book descriptions short and nontechnical, but after time the bookstore staff gained confidence and began employing book market terms. Overage of book trade jargon should be avoided (especially for untrained sellers); however, Alibris offers a helpful “Glossary of Book Terms” that the Smathers Library staff use frequently.25 As staff began applying more information and appropriate technical terms to book descriptions, the number of books sold each month more than doubled. In the first four months of the project, from September through December 2004, an average of less than eight books a month were sold on Alibris; in the next eight months of the project, from January through August 2005, an average of almost eighteen books a month were sold.

Pricing books (based on condition, description, and rarity) is another important consideration. In the early months of joining Alibris, the Inventory Manager included a free pop-up window with all the price listings for that title already in Alibris. This listing furnished a very helpful guide for pricing the book in hand, as the seller could base the price by other editions for sale. Unfortunately, a few months into the project Alibris began charging for this listing service. Rather than pay for this information, the staff began accessing book selling search sites (such as Bookfinder or Abebooks) to compare price and condition of the books.26 This added step of inputting a new search for the title on a separate browser in Bookfinder or Abebooks does slow down the process of pricing, but the staff consider this essential to
setting a fair market price. Regardless of the increase in staff hours required to list online inventory in this manner, the staff attributes the steady rise in online sales to listing books with better prices and improved descriptions.

Procedures and Staff Time

During the project, the staff recorded the amount of time spent on procedures used for online book selling. Activities demanding the most staff time include describing and pricing the books, recording and shipping the sales, and monitoring the sales with a spreadsheet. After listing a book, the staff tags the record with a shelf number for tracking purposes. Once this tracking number is included, the record is printed and placed inside the book. Books for sale online are kept on several dozen shelves in a separate area away from the regular bookstore stock. Alibris sends notification by e-mail each time a book sells. Once notified, the staff pulls the book and carefully packages it with bubble wrap for mailing. Often the shipment is to the Alibris warehouse in Sparks, Nevada, where Alibris reroutes the book to the buyer; other times, the bookstore staff sends a book purchased directly to the buyer. For each online book sale, bookstore staff use an Excel spreadsheet to record the pertinent information, including Alibris’ sale identification number and the title, author, and price of the book. The staff must also maintain the inventory within Alibris, removing items that sell, updating records, and printing mailing labels and invoices.

Another task is “preview searching,” which is a term the staff uses when they conduct a quick scan on Bookfinder or Abebooks in order to determine a book’s value in the online market. This preview searching takes only a couple minutes but it is crucial, as the value of individual books is not always obvious to the library staff. Going online to scout the used book market and compare the availability and prices on the used book market is extremely beneficial in deciding whether to sell the book online or in the Smathers Library Bookstore. After monitoring online sales, the staff set the cutoff line at $15. If several copies of a book are being sold online or if most copies of a book are priced less than $15 apiece, the staff considers selling online not to be worth the time and effort to do so.

In the first month of listing books, the average time required to place a book for online sale was approximately fifteen minutes, or four books per hour. With the bookstore staff working as a team for thirty-three hours a week, more than 130 staff hours during September 2003 were required to reach the five-hundred-book minimum requirement. Once the five-hundred-book requirement was met, staff spent six-and-a-half hours a week in the period October through December 2003 on online selling activities. For the next eight months of the project, January through August 2004, the number of hours required of staff decreased to an average of six hours per week. (See table 2 for details on how staff time was spent.) Hours devoted to online selling decreased despite the fact that the most important and time-consuming task of listing books increased once staff began using Bookfinder and Abebooks to adjust prices and enhance book descriptions. The average time spent on listing a book increased from fifteen to almost twenty-five minutes per book; however, the overall average in staff time required per week decreased. This decline can be attributed to staff not only becoming more experienced at online book selling, but to improved in-house procedures over the life of the project.

Conclusion

The year-long online selling pilot project ended on September 1, 2004. It was an exciting experience for the entire staff of the Smathers Library Bookstore and a profitable enterprise for the library. In the proposal, the bookstore staff set the amount of $2,500 as the sales goal. This target was reached after only seven months of selling books online; by the end of twelve months, 174 books had sold for more than $4,000. Although the first month’s sales were modest (six books sold for $166), gross sales increased at a steady rate (see figure 1). In four months, online gross sales passed $1,000, and, by the end of the first six months, sales were just less than $2,000. After one year of online book selling with Alibris, gross sales totaled $5,932.45. These gross earnings do not take into account Alibris’ 20 percent

<table>
<thead>
<tr>
<th>Month</th>
<th># Minutes Spent Listing Each Book</th>
<th># of Minutes Spent Packing/Shipping Books</th>
<th># of Minutes Spent on E-Mail/ Spreadsheet and Database Maintenance</th>
<th>Average Staff Hours Spent per Week</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sept.</td>
<td>15</td>
<td>20</td>
<td>10</td>
<td>33</td>
</tr>
<tr>
<td>Oct.–Dec.</td>
<td>20</td>
<td>15</td>
<td>10</td>
<td>6.5</td>
</tr>
<tr>
<td>Jan.–Aug.</td>
<td>25</td>
<td>15</td>
<td>10</td>
<td>6</td>
</tr>
</tbody>
</table>
fee. After deducting Alibris’ fee of $1,186.49 (20 percent) from the year’s gross, the library netted $4,725.46 from its online book selling project (see table 3).

One stated goal of the proposal was to successfully balance online book selling with daily sales in the library bookstore, and in this regard, the results surpassed expectations. During the course of the yearlong online selling project, the Smathers Library Bookstore continued posting steady sales and actually brought in higher revenue than the previous year. In fiscal year 2003–2004, the Smathers Library Bookstore grossed $12,813.97, versus $10,309.63 in fiscal year 2002–2003. Included in the bookstore figures were individual sales to book dealers and, although sales with the dealers did drop overall (since a greater percentage of the finer-quality books were being sold online), the store’s profits were not compromised.

In addition to boosting the library’s general book acquisition fund by several thousand dollars, the staff learned a number of valuable lessons about the online selling of surplus books. The staff discovered that listing, describing, and pricing books is not as daunting a task as originally feared, due to the templates provided by the Alibris Inventory Manager and using the descriptions and prices found on book selling search sites, such as Bookfinder and Abebooks. The staff observed that, in general, books listed with more detailed information sell faster on Alibris, and learned the types of books that are better suited for selling online (books in construction, life sciences, and history) versus books that appeal to the browsing customer (art and cookbooks), which regularly sell faster in the bookstore.

As the project began, book returns were a major concern of the Smathers Library Bookstore. Whether due to conscientious book listing with accurate descriptions, luck, or a combination of both, only one return was needed in the project year. For whatever reason, the buyer changed his or her mind and decided to send the book back. Alibris handled this return very well and settled the request quickly and without problems. Since Alibris’ policy is to send a monthly check to the seller for all sales (minus their fee), Alibris simply deducted the amount reimbursed for the return from the next monthly check issued to the Smathers Library.

Another factor to take into account with online book sales is the incidental costs incurred. Alibris does reimburse book sellers an approximated cost of postage for each book sale, but this reimbursement does not cover the costs of labels, padded envelopes, and packing materials (such as bubble wrap). Fortunately, Smathers Library can absorb these costs easily because packing materials are purchased in bulk. The staff estimate that

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**Table 3. Online sales: September 1, 2003–August 31, 2004**

<table>
<thead>
<tr>
<th>Month</th>
<th>Gross Sales ($)</th>
<th>Alibris Fee (%)</th>
<th>Net Sales ($)</th>
<th># of Books Sold</th>
<th>Avg. Sale Price (Gross) ($)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sept.</td>
<td>166.00</td>
<td>-20</td>
<td>132.80</td>
<td>6</td>
<td>27.67</td>
</tr>
<tr>
<td>Oct.</td>
<td>384.00</td>
<td>-20</td>
<td>307.20</td>
<td>10</td>
<td>38.40</td>
</tr>
<tr>
<td>Nov.</td>
<td>216.50</td>
<td>-20</td>
<td>173.20</td>
<td>7</td>
<td>30.93</td>
</tr>
<tr>
<td>Dec.</td>
<td>281.50</td>
<td>-20</td>
<td>225.20</td>
<td>8</td>
<td>35.19</td>
</tr>
<tr>
<td>Jan.</td>
<td>547.50</td>
<td>-20</td>
<td>438.00</td>
<td>14</td>
<td>39.11</td>
</tr>
<tr>
<td>Feb.</td>
<td>399.50</td>
<td>-20</td>
<td>319.60</td>
<td>11</td>
<td>36.32</td>
</tr>
<tr>
<td>March</td>
<td>567.00</td>
<td>-20</td>
<td>453.60</td>
<td>17</td>
<td>33.53</td>
</tr>
<tr>
<td>Apr.</td>
<td>557.00</td>
<td>-20</td>
<td>445.60</td>
<td>19</td>
<td>29.32</td>
</tr>
<tr>
<td>May</td>
<td>748.50</td>
<td>-20</td>
<td>598.80</td>
<td>22</td>
<td>34.02</td>
</tr>
<tr>
<td>June</td>
<td>490.50</td>
<td>-20</td>
<td>392.40</td>
<td>17</td>
<td>28.85</td>
</tr>
<tr>
<td>July</td>
<td>815.95</td>
<td>-20</td>
<td>652.76</td>
<td>19</td>
<td>42.94</td>
</tr>
<tr>
<td>Aug.</td>
<td>758.50</td>
<td>-20</td>
<td>606.80</td>
<td>24</td>
<td>31.60</td>
</tr>
<tr>
<td>Totals</td>
<td>5,932.45</td>
<td>-20.50*</td>
<td>4,725.46</td>
<td>174</td>
<td>34.09</td>
</tr>
</tbody>
</table>

*One book returned.
each book shipped costs the library $1.50. During the year, the library bookstore sold, packaged, and shipped 174 books, costing the library approximately $260. While this amount is not overwhelming, it may be significant for libraries with smaller budgets.

By the end of the pilot project, the staff realized that once they established an organized, efficient mechanism for online selling, the overhead and staff time needed for searching, pricing, listing, recordkeeping, and shipping orders is surprisingly low when compared to the revenue generated. However, this may or may not be true for other libraries attempting online sales. With the existence of a bookstore and a staff already familiar with procedures for the disposition of unselected gift materials and the tasks associated with selling books (pricing, bookkeeping and inventory maintenance), the Smathers Library has an ideal situation in place for selling books online. Other libraries may have a larger challenge and more hurdles to overcome in order to be successful.

For the Smathers Library Bookstore, the pilot project accomplished its goal of balancing online and bookstore sales, and exceeded its expectations in revenue. As a result, library administration endorsed the continuation of online book selling.

References

9. Ibid., 40.
15. Ibid., 361.
17. Ibid.
19. Ibid.
20. Ibid.
Book Reviews

Edward Swanson

Library Collection Assessment through Statistical Sampling.

Based on the title of this book, Library Collection Assessment through Statistical Sampling, one might expect it to give more detailed coverage of collection development issues and a more robust discussion on statistical sampling than is presented. Nevertheless, this book does provide an overview of the basic concepts behind survey-based assessment, focusing on preservation issues and the evaluation of print collections' physical conditions. Baird explains the purpose of assessment projects and describes why assessment tools should be customized for one's particular institution and purpose. He describes collection assessment as a set of methods to evaluate the effectiveness and consequences of past decisions to inform future decisions, and he provides several examples illustrating this point throughout the book.

Chapter two, “Designing the Survey Instrument,” and chapter three, “Conducting the Survey,” focus on how to design a survey as an tool for assessment. An extensive series of questions developed to elicit information addressing preservation of print materials covers everything from paper fold tests to circulation data. Baird provides useful tips throughout these chapters and emphasizes the importance of maintaining consistency in how data are collected and scored. For example, Baird stresses that survey methodology needs to be well-documented so that follow-up surveys maintain the guidelines used previously. The author provides a limited list of resources for more examples of survey instruments at the end of these chapters as well as within the bibliography at the end of the book; Ross Harvey provides many more examples in Preservation in Libraries (Bowker Saur, 1993).

One drawback of this book is the lack of clear definitions for some terms specific to book conservation and preservation. While an index is provided, detailed illustrations supplemented by a glossary of terms would enhance the reader’s understanding of some of the methods described. Brian J. Baird, for example, provides a glossary as well as illustrations in his Preservation Strategies for Small Academic and Public Libraries (Scarecrow, 2003).

While a section of chapter three describes appropriate ways to conduct surveys for assessing the condition of print materials, only a brief mention is made of how to determine the appropriate sample size for a statistical evaluation. Baird highlights the importance of maintaining consistency in sampling methodology, but he does not adequately describe how to conduct valid random sampling. As a result, the theme of statistical sampling is not fully developed, and other sources will have to be consulted for a more pointed summary on statistical sampling methods. Baird does offer some recommendations for further reading within the notes section at the end of chapter three, but this subject might have been more fully developed within this work. Managing and Analyzing Your Collection (ALA, 2002), by Carol A. Doll and Pamela Petrick Barrin, provides a more thorough overview of different sampling techniques and step-by-step instructions on some basic statistical calculations.

In chapter four, “Analyzing the Data,” the author goes into some detail on how to set up a survey form in a database program, using Microsoft Access as the example. The screen shots presented to illustrate the process of setting up tables and forms do not render well in the text, and more detail would be required for a reader inexperienced with using database software to design a survey instrument—this book does not go into any real depth with regard to setting up survey forms in database programming software.

Baird presents a dismissive overview of techniques used to analyze the data collected during a survey. While some basic information is presented, he stipulates that a statistical expert is needed to ensure that the data are properly analyzed and interpreted. He describes the kind of information that is collected as “nominal data,” and briefly mentions the kinds of analyses that can be accomplished with nominal data. The use of the chi-square test is briefly mentioned for use in comparing data collected from different libraries or from different venues within a library, but readers are again advised to seek the advice of statistics experts instead of conducting the analysis themselves. Although the chapter lacks significant content on data analysis, Baird does include several examples of how to interpret data; he also describes some of the pitfalls one may encounter during interpretation.

Much of the latter part of the book focuses on issues relevant to preservation of print-based collections. Studying the means by which the text blocks—such as the bound pages of a book—are held together and monitoring the condition of book bindings are some of the examples presented that are used to show how collection condition assessment can be harnessed.
to help develop or expand a preservation or book conservation program. An interesting collection development example that is discussed in the book is an assessment of the conditions of books residing in the stacks compared to the condition of books being returned to circulation. Results of these surveys guided decisions about where, when, and how much attention should be applied to book repair, bookbinding, how to develop book conservation programs, and how effective past preservation efforts have been.

*Library Collection Assessment through Statistical Sampling* will be of limited interest to most libraries that already have a mature preservation or conservation program. Readers interested in preservation will receive only a basic overview of issues that one would encounter in survey-based assessment projects. In Baird’s earlier book, *Preservation Strategies for Small Academic and Public Libraries*, many of the topics covered in the current book are discussed in a single chapter. In fact, sections of the 2003 book are repeated word-for-word in the current book (for example, compare page 65 in this book with page 16 in the 2003 book). Baird simply could have cited his previous work instead and put more effort into developing a more thorough overview of statistical sampling techniques and data analysis tools.

While all of the examples in the book are specific to preservation and loosely address collection development or collection management, some of the same principles could be applied to other assessment needs. Other books or resources, however, will need to be consulted if one is looking for an explanation of statistical methods to guide assessment projects.

An anticipated follow-up to this book would be a discussion on collection assessment for electronic resources, including online books and journals. —*Hilary Davis* (hilary_davis@ncsu.edu), North Carolina State University Libraries, Raleigh


Disasters are by their nature unpredictable. This makes the content of these two works even more important for librarians today in a time of extremes (of weather and manmade problems) and tight budgets. A disaster plan is, as the cliché states, like a parachute. We hope never to have to use one, but it is better to have one and not need it than to need one and not have it. This pair of books offers many valuable insights into the disaster planning and recovery processes.

Both of these works emphasize the importance of having a disaster plan in place. During a crisis is no time to be making decisions that could affect one’s institution for years to come. It is much easier to establish recovery criteria for collections and to delegate responsibilities before anything happens that would require their use. A well-trained and informed staff is able to react more quickly and efficiently to any situation as it arises. An effective disaster plan will also facilitate dealing with vendors, insurers, and helpful colleagues at other institutions.

**Disaster Response and Planning for Libraries** provides clear instructions for creating a disaster plan for an institution and responding to a disaster after it occurs. Many forms and checklists are included in the book for quick reference. The author breaks the process down into four steps: response, recovery, prevention, and planning. Response covers the period immediately after the disaster. This section contains much detailed information on the cleaning and repair of books and other library materials damaged by water, fire, or other factors. Recovery concerns the long-term return of the library to its former level of service: replacement of lost or damaged materials, renovation and reconstruction of facilities, and so on. Included in an appendix is a thorough list of businesses and organizations that can be of help in a crisis. Prevention deals with the issue—all too easy for busy library managers to forget—of maintaining a safe and healthful workplace. Some of the suggestions included are obvious (like potential fire hazards), others less so (like damage incurred during a renovation project). If your library does not have a disaster plan, or if you would like to be sure it is as thorough as it ought to be, *Disaster Response and Planning for Libraries* is the book for you.

**Disaster Management for Libraries and Archives** is an effective complement to the previous work. International in scope, it contains chapters dealing with the physical and emotional effects of disasters as well as case studies written by veterans of these events. These sections provide some of the most compelling portions of the book. Fires in England and Sweden, war in the Balkans, wildfires in Australia—all of these and more are discussed.

As in the other book, planning is emphasized here. This is especially important in joint-use facilities. Examples given include libraries in government buildings in Australia and public library-city archives in England. Another chapter deals with cooperative ventures among libraries in the United States. As with the disaster plan itself, the time to build links with other institutions in your area is before disaster strikes your library or theirs. The authors provide general guidelines applicable to all libraries, as well as specific items gleaned from hard experience.

During a crisis such as a fire it is natural to focus on recovering a library’s materials. Maj Klasson, in the
chapter on a library fire in Sweden, discusses the emotional toll taken on the staff of the library. It might be expected that staff members who were actually in the building during the fire and its aftermath would suffer from stress and depression, but librarians at other branches were affected also, for example, by increased workloads and a general sense of powerlessness that pervaded the entire community. Many of the library's regular patrons were also concerned about their library.

Many of the same recovery issues are addressed in the chapter on a library fire in Norwich, England. Both of these chapters show how important communication is during a disaster and its aftermath. By keeping staff and the community updated about progress and plans for the future, library administrators can focus energies and attention on the future, boosting morale and maintaining forward momentum. Regular communication also fosters a sense of concern and goodwill within the community, both of which are valuable assets to a library in crisis. Disaster Management for Libraries and Archives, while not as essential as Disaster Response and Planning for Libraries, is a valuable complement to it. This book provides a variety of perspectives on some of the issues involved in planning and reacting to different disaster that may befall one’s institution.

Neither of these books explicitly discusses the September 11, 2001, tragedy in detail (Matthews and Feather do deal with the destruction of libraries during the war in the Balkans), but it remains the specter at the feast. These events, like the Oklahoma City bombing and other acts of destruction, are grim reminders that we all live in an age with the ever present possibility of disaster. Man can be as pernicious as fire, flood, or earthquake. As unpleasant as disaster can be to contemplate, these books serve to remind all of us that the alternative of willful ignorance or unreasoning optimism can be even more dangerous.—Dan Forrest (dan.forrest@uku.edu), Western Kentucky University, Bowling Green


The International Conference on Authority Control: Definition and International Experiences was held in Florence, Italy, in February 2003. It brought together many respected experts from Europe and the United States for a review of the current state of the art in authority control. The proceedings were originally published in Italian, and this volume represents the English version with a few additional papers solicited by the editors.1 Almost half the papers were contributed by Italians. There have been a number of works published on authority control in the last two or three decades, but most have focused on the practical aspects of authority work in libraries. This is the first broad and comprehensive overview of the field since the Library and Information Technology Association (LITA) institutes in 1979.2 More than forty contributions are brought together to cover every aspect of authority control today, from international standards-setting developments to a variety of local and specialized projects that incorporate some aspect of authority control.

The proceedings open with an address by Michael Gorman, who was also part of the 1979 institutes. In his usual curmudgeonly style, he gives an overview of the concepts of authority control and a critique of metadata schemas such as the Dublin Core. He argues that such metadata should be either abandoned or brought up to the standard of traditional cataloging norms.

The rest of the proceedings are divided into five sections. The first is called “State of the Art and New Theoretical Perspectives.” Barbara Tillett, who has been so instrumental in the world of authority control for many years, provides a valuable historical review of the last quarter century and elucidates current developments in the field, such as the Functional Requirements for Bibliographic Records (FRBR), changes in the concept of Universal Bibliographic Control (UBC), and the Virtual International Authority File. Arlene Taylor reports on a survey of teachers to study how authority control is taught in North American schools of library and information science. The results show general agreement on the importance of authority control, but few indications that students are learning much about it amid the other subjects competing for their attention.

The second, third, and fourth sections form the heart of the book and will have perhaps the broadest interest and value. The full range of standards and activities around the world is described, in most cases by experts who are directly involved in the respective institutions and projects. The second section is called “Standards, Exchange Formats, Metadata.” Gloria Cerbai Ammannati describes the efforts of the Bibliografie Nazionale Italiana to impose some kind of authority control on its records. Marie-France Plassard describes the work of the International Federation of Library Associations and Institutions (IFLA) with regard to authority control, and Glenn Patton discusses IFLA’s Functional Requirements and Numbering of Authority Records (FRANAR) model. Pino Buizza explores how the concepts of authority control have evolved from the days of the Paris Principles, and Alberto Petrucci argues for greater attention to the relationships between
authors and works, in the spirit of FRBR. Murtha Baca demonstrates how the concepts of authority control have been entering the world of art and museums, especially through the efforts of the Getty Research Institute, while Mirna Willer's paper outlines the development of IFLA's UNIMARC authorities format.

The third section is titled "Authority Control for Names and Works." The first two papers illustrate how the world of archives is discovering the power of authority control. Archives are moving away from a model where there was a one-to-one correspondence between an archival collection and its creator to one where "more than one creator can be linked to one archive and, conversely, that more than one archival fonds can be linked to one creator" (189). This means that information about creators of archives can be stored separately from the description of the archives and shared among institutions, much as libraries have long done, but archives need to keep much more information about those creators than libraries keep about names in their catalogs. Stefano Vitali describes the International Standard Archival Authority Record for Corporate Bodies, Persons, and Families (ISAAAR(CPF)), and Daniel Pitti delineates the Encoded Archival Context (EAC), an XML-based implementation of ISAAAR(CPF). Jutta Weber reports on the Linking and Exploring Authority Files project, which aims to share and combine authority files from a number of European libraries. Various attempts to subject the names of printers, publishers, and booksellers of early printed books to authority control are the topic of Lorenzo Baldacchini's paper, and Richard Smiraglia argues for increased authority control over works.

"Authority Control for Subjects" is the title of the fourth section. The papers in this section examine the SACO Program; Multilingual Access to Subjects, which links English, French, and German subject heading systems; Faceted Application of Subject Terminology, which is an OCLC project; and the new Soggettario, a subject thesaurus for Italian libraries.

The final section is "Authority Control Experiences and Projects." Twenty papers report on various projects that attempt to implement some kind of authority control or develop an authority file. Some of them are limited to a particular library or area. Many of the reports are from Italy, but there are others from France, Germany, the United Kingdom, the United States, and China.

This book represents a compilation of virtually everything that is known and much of what is in development in the field of authority control at the beginning of the twenty-first century. It testifies to the fact that in a time when keyword searching and googlization seem to be irresistible forces, the importance of authority control in organizing the information universe is being increasingly recognized. The papers are well-written and, though many of them were presumably translated or written by non-native speakers, they are presented in a smooth and colloquial English.—John Hostage (hostage@law.harvard.edu), Harvard Law School.

References


Brief Reviews


For most librarians, members of a profession dedicated to helping others, security is usually something to be discussed in whispers or, better yet, left to somebody else. Unfortunately, this attitude leads to problems when the inevitable occurs and a situation requiring quick and correct action develops. It is always better to have put some thought into procedures before the fact than to worry about what one should have done after the fact. Case studies provide opportunities for discussion and reflection without real world consequences, and this collection of case studies on library security is an excellent tool for any librarian who may someday have to face some of the situations delineated here (all of us).

To give the cases described in this book more immediacy, the author has created a community, library system, and cast of characters to set them in. The effect is that of a collection of short stories. An additional innovation is that they are reported conversationally, in the form of memos, telephone calls, and even e-mails. This is generally quite effective, although it can be occasionally distracting when the reader is more interested in how the characters react than in pondering a more appropriate response by their own library.

The author has thoughtfully given attention to newer security concerns as well as the more traditional ones like book theft and disruptive patron behavior. Computer hackers and offensive Web sites are examined as are some more implausible sci-fi issues. The author has not ignored the community-relations aspects of library security either; for example, how the public and the library board might react to new policies and problems. Case Studies in Library Security will provide plenty of food for thought for any public service librarian, even one with no direct security

This qualitative approach into the process of assigning subject headings gives an inside look into the actual thought process and highlights the inherent difficulty of the procedure. The book is based on Šauperl’s doctoral thesis at the University of North Carolina at Chapel Hill, and consists of seven chapters, a bibliography, and an index.

Data were collected between October and December 1998 using questionnaire, think aloud, follow-up discussion, and timeline interview methods. The same format was used to report each subject’s responses: a brief description of the environment and the cataloger’s primary responsibilities, data obtained from each subject, and a summary of the person’s style. The sample size included twelve catalogers from three large academic libraries. From this group six were observed while choosing subject headings, and the remaining six were merely interviewed about the process they normally use when choosing subject headings. Šauperl interjected seventeen terms she had gathered from the observation experiences into the dialog with the interviewed participants in order to strengthen her findings between the two groups.

Subject determination is viewed from the perspective of very personal experiences of the twelve practicing catalogers in the study. Textbooks often discuss a step-by-step process describing methods of assigning subject headings, so what sets this book apart is the inside look at the analysis process of practicing catalogers and particular thought patterns present before the final subject headings are chosen and entered into the cataloging record.

Šauperl not only examines each response, but also cross-references the participant’s experiences. She discusses similarities and differences broken down into three categories: examination of the book and subject identification, searching for subject headings, and classification. The final two chapters describe a hypothetical example of the subject determination process based on a synthesis of the overall results discussed in chapter five. The book ends with discussion of relationships between her results and previous research.

A variety of concepts and methods not typically covered in cataloging textbooks are explored, such as note taking, revising and rethinking choices, and utilizing multiple online and print tools. Clearly, this book should make an excellent supplement for anyone taking a cataloging course or otherwise interested in exploring these processes.—Deana Groves (deana.groves@wku.edu), Western Kentucky University, Bowling Green
Index

Volume 49 2005
Compiled by Edward Swanson

General Procedures Used in Compiling the Index
The following types of entries are included:
  a. authors—of articles, reviews, and letters
  b. titles—of articles and of articles about which letters were published
  c. subjects—of articles and of books reviewed

Subject entries for individuals and corporate bodies are identified by “(about)”; letters are identified by “(c).” Reviews are indexed by name of reviewer and by subject of the work reviewed, identified by “(r).” They are also listed by title under the heading “Books reviewed.”


Paging of Volume 49:
Pages 1–68 = Number 1 (January)
Pages 69–144 = Number 2 (April)
Pages 145–220 = Number 3 (July)
Pages 221–292 = Number 4 (October)

Numerals–A

“2004 ALCTS President’s Program: ALA Annual Conference, 28 June 2004, Orlando, Florida” 80–89
academic libraries: book selling in, 276–83; journal usage in, 19–26+; productivity standards in, 40–48; use of student workers, 27–31
acquisition of library materials: Amazon.com as vendor, 204–9
Ahrberg, Janet H.: 123–36
Alibris: 276–83
Aliprand, Joan M.: 243–49
Allegheny College: 49–56
Amazon.com: in library acquisitions, 204–9
“Ahrberg, Janet H.” 123–36
Alibris: 276–83
Aliprand, Joan M.: 243–49
Allegheny College: 49–56
Amazon.com: in library acquisitions, 204–9
“Analog People for Digital Dreams: Staffing and Educational Considerations for Cataloging and Metadata Professionals” 14–18, 148 (c)
“Andrew Marvell and Satchel Paige in Baghdad” 82–86
Arcand, Janet: 107–22
archival materials: preservation of, see preservation of archival materials archives: disaster management, 285–86 (r)
articles in journals, see journals—articles
Association for Library Collections & Technical Services: Annual report, 225–26; President’s Program, 2004: 80–89
Association for Library Collections & Technical Services, Cataloging and Classification Section, Subject Analysis Committee: 154–66
authority control: 286–87 (r)
authority records: multilanguage, 243–49; multiscript, 243–49
B
Banush, David: 190–203
benchmarks, see productivity standards
“Beyond Subject Headings: A Structured Information Retrieval Tool for Interdisciplinary Fields” 266–75
Black, Steve: 19–26+ blogs, see Weblogs
book selling: in academic libraries: 276–83; online, 276–83
Books reviewed
Authority Control in Organizing and Accessing Information: Definition and International Experience (Taylor and Tillett, eds.): 286–87
Cataloging and Classification for Library Technicians, 2d ed. (Kao): 67–68
Cataloging the Web: Metadata, AACR2, and MARC21 (Jones, Ahronheim, and Crawford, eds.): 139–40
Digitizing Collections: Strategic Issues for the Information Manager (Hughes): 65–66
Disaster Management for Libraries and Archives (Matthews and Feather, eds.): 285–86
Disaster Response and Planning for Libraries (Kahn): 285–86
Education for Cataloging and the Organization of Information: Pitfalls and the Pendulum (Hill, ed.): 143–44
Essential Classification (Broughton): 219–20
Fundamentals of Collection Development and Management (Johnson): 57–58
Historical Aspects of Cataloging and Classification (Joachim, ed.): 60–61
Humanizing Information Technology (Warner) 59–60

Information Architecture: Designing Information Environments for Purpose (Gilchrist and Mahon, eds.): 140–41

Innovative Redesign and Reorganization of Library Technical Services: Paths for the Future and Case Studies (Eden, ed.): 217–18

The Internet Under the Hood: An Introduction to Network Technologies for Information Professionals (Molyneux): 137

Introduction to Technical Services (Evans, Intner, and Wehie): 67–68

Knowledge Organization and Classification in International Information Retrieval (Williamson and Beghtol, eds.): 62–65

The Kovacs Guide to Electronic Library Collection Development: Essential Core Subject Collections, Selection Criteria, and Guidelines (Kovacs and Robinson): 137–39

Library Collection Assessment through Statistical Sampling (Baird): 284–85

Managing Preservation for Libraries and Archives (Feather, ed.): 141–43


Subject Determination during the Cataloging Process (Saupel): 288

The Title-Page: Its Early Development, 1460–1514 (Smith) 67

Bowen, Jennifer: 175–88

Boydstun, Jeanne M. K.: 250–65

Brown, Karen E. K.: 90–106

Calhoun, Karen: 217–18 (r)

Carrico, Steven B.: 276–83
catalogers: skill sets, 14–18; supply and demand, 250–65; training of, 14–18, training of, 143–44 (r)
cataloging: codes, see cataloging codes; history, 60–661 (r); of special collections, 49–56; standards, 40–48; use of student workers, 27–31; of Weblogs, 7–13
cataloging codes: congresses, 218–19 (r)“Cataloging the Special Collections of Allegheny College” 49–56
censorship: 3+
Charbonneau, Michael D.: 40–48
classification of library materials: 123–36; 62–65 (r), 219–20 (r); history, 60–61 (r)
collection development: 57–58 (r); 137–39 (r)
collection management: 57–58 (r)
“A Comparative Study of Amazon.com As a Library Book and Media Vendor” 204–9
competencies: of technical services librarians, 167–74
continuing resources: application of Functional Requirements for Bibliographic Records to, 227–42; see also serial publications
Cornell University Library: 190–203
cost studies: serials acquisitions, 107–22
Crawford, Gillian: 79 (c)
cultural memory: preservation of, 80–82, 82–86, 86–89
“Current and Emerging Challenges for the Future of Library and Archival Preservation” 33–39

D
Davis, Hilary: 284–85 (r)
Davis, Philip M.: 72–78, 150–53
Denda, Kayo: 266–75
Dewey Decimal Classification: 123–36
Diedrichs, Carol Pitts: 225–26; port., 225
digital libraries: 66–67 (r); preservation of, 58–59 (r)
digitizing: of library materials, 65–66 (r)
disaster planning: 285–86 (r)
“Editorial” 3+, 71, 147, 224
electronic materials: 137–39 (r); cataloging of, 14–18; electronic serials: aggregations of, access to: 190–203; cataloging of, 190–203
Emerald Group Publishing Limited: 79 (c), 150–53 (c); 72–78 (about), 148–53 (about)
Ernck, Linda: 210–16
“Factors Influencing Competency Perceptions and Expectations of Technical Services Administrators” 167–74
“Floating Bibs and Orphan Bar Codes: Benefits of an Inventory at a Small College” 210–16
Forrest, Dan: 285–86 (r), 287–88 (r)
Fowler, David C.: 107–22
FRBR, see Functional Requirements for Bibliographic Records
“FRBR: Coming Soon To Your Library?” 175–88
“The FRBR Model As Applied to Continuing Resources” 227–42
full-text journal articles: use of, in academic libraries, 19–26+
Functional Requirements for Bibliographic Records: 175–88; and continuing resources, 227–42
G
Gatti, Timothy H.: 27–31
Gray, Barry: 49–56
Greenberg, Douglas: 82–86
Gregory, Vicki L.: 59–60 (r), 137 (r)
Groves, Deana: 288 (r)
H
Hearn, Stephen: 218–19 (r)
Hill, Janet Swan: 14–18
Holley, Robert P.: 57–58 (r)
Horn, Marguerite E. (Maggie): 67–68 (r)
Hostage, John: 286–87 (r)
Hutt, Arwen: 58–59 (r), 60–61 (r)
I
IFLA Meeting of Experts on an International Cataloging Code: 218–19 (r)
“Impact of Full Text on Print Journal Use at a Liberal Arts College” 19–26+
information retrieval: 266–75
information services: online, 61–62 (r)
information technology: 59–60 (r), 140–41 (r)
International Federation of Library Associations and Institutions, see also entries beginning with IFLA
Internet: 137 (r)
inventories: of library materials, 210–16
Ivey, Bill: 86–89
J
Jackson, James M. 66–67 (r)
Johnson, Peggy: 3+, 71, 147, 224; ports.: 3, 71, 147, 224
Jones, Ed: 227–42
journals: articles, publication of, in multiple journals, 72–78, 148–50; use of,
in academic libraries, 19–26+

Keith, Howard: 150–53
knowledge organization and management: 62–65
Kurth, Martin: 190–203

Knowlton, Steven: 148 (c)

K

Pajerek, Jean: 190–203

preservation of archival materials: affect of technological developments on, 32–39; management of, 141–43 (r)

Pajerek, Jean: 190–203

subject cataloging: 288 (r); alternative methods, 266–75

online information services: history, 61–62 (r)

ontology: 266–75

Orcutt, Darby: 67 (r)

Orkiszewski, Paul: 204–9

R

Quam, Eileen: 140–41 (r)

Rehabilitating Killer Serials: An Automated Strategy for Maintaining E-journal Metadata” 190–203

Riley, Jenn: 65–55 (r)

Riva, Pat: 5–6 (c)

Rupp, Nathan: 7–13

Schottlaender, Brian E. C.: 80–82

“Scripts, Languages, and Authority Control” 243–49

Seikel, Michele: 123–36

cataloging, 40–48

subject headings: references, 154–66

subject cataloging: 288 (r); alternative methods, 266–75

subject headings: references, 154–66

“Supply and Demand for Catalogers: Present and Future” 250–65


T


technical services: 217–18 (r)
technical services librarians: competencies, 167–74; expectations of, 167–74; training of, 143–44 (r); see also catalogers

technology: in preservation of library materials, 32–39

Teper, Thomas H.: 32–39

Tillett, Barbara: 4–5 (c)
title pages: history, 67 (r)

U

Unicode: in authority records, 243–49

University of Florida, Smather Library: 276–83

“Use of General Preservation Assessments: Process” 90–106

“Utilization of Students as Cataloging Assistants at Carnegie Category 1 Institution Libraries” 27–32

W

Web sites, see World Wide Web

Weblogs: cataloging of, 7–13; in library collections, 7–13

“Why Do You Still Use Dewey?: Academic Libraries That Continue with Dewey Decimal Classification” 123–36

women’s studies: subject analysis, 266–75

Wool, Gregory J.: 143–44 (r)

“World Enough, and Time—Libraries As Agents of Cultural Memory: Introduction to the 2004 ALCTS President’s Program, June 28, Orlando, Florida” 80–82

World Wide Web: cataloging of, 139–40 (r); see also Weblogs

WWW, see World Wide Web
From Catalog to Gateway: Charting a Course for Future Access  
*Edited by Bill Sleeman*

Developed as guidelines regarding the form and function of the catalog in its several formats, including issues arising from the structure of the catalog, filing order, authority control, record content, minimum level cataloging, retrospective conversion, command structure, search strategy, and record display. ALCTS, expected release date: September 2005, ISBN: 0-8389-8326-X.

Knowledge without Boundaries: Organizing Information for the Future  
*Edited by Michael A. Chopey, with introduction by Sally C. Tseng*

Libraries have expanded their role as knowledge managers and librarians need to be aware of metadata standards that are being integrated into library portals, which will precipitate cataloging rule revisions. Presents current projects that impact library methods and changes and trends in cataloging. ALCTS, expected release date: October 2005.

Community, Collaboration and Collections: The Writings of Ross Atkinson  
*Edited by Robert Alan and Bonnie MacEwan, with an introduction by Sarah Thomas*

For more than two decades Ross Atkinson has written insightfully and articulately about libraries and the changing character of library collections. This work consists of a selection of Atkinson’s most significant publications and is accompanied by an eloquent introduction by Sarah Thomas. ALCTS, expected release date: January 2006.

Cataloging Correctly for Kids, 4th ed.  
*Edited by Sheila Intner*


Managing Electronic Resources: Contemporary Problems and Emerging Issues  
*Edited by Pamela Blu and Cindy Hepfer*

As electronic resources evolve and mature, the need for effective management options is critical. The papers in this publication, a number of which were first presented at the 2003 and 2004 Midwinter Symposia on managing electronic resources, describe present conditions and prospective options and offer librarians practical suggestions for dealing with electronic resources. ALCTS, expected release date: October 2005.