

The Future of Cataloging: A Survey of Trends and Issues

By Cynthia Boeke

Summary: Current topics in library literature include the impact of multiple metadata formats on traditional cataloging and the need for them to be interoperable with Machine Readable Catalog (MARC) records and incorporated into library catalogs. In addition, many articles describe how new protocols, standards and technologies are allowing libraries to introduce innovative services using such metadata within their catalogs. A survey of catalogers was conducted to determine whether these or other issues were deemed the most important to the future of the profession. The respondents ranked highly the issue of the manifold metadata formats and standards, and their effect on today's MARC-based catalogs. They also expressed deep concern about the current system of attracting new librarians to the occupation, the ability of library schools to provide adequate training, and the willingness of libraries to continue providing sufficient staffing and funding for cataloging departments. Many of them highlighted the Functional Requirements for Bibliographic Records (FRBR) as an important initiative that will change the way resources are cataloged, and described future records as being enriched with additional information. Each of these four themes represents an area for more detailed scholarly investigation.

The Metadata Issue: Although it would be impossible to review all literature relating to cataloging, an informal subject review of the Library Literature database, *Cataloging & Classification Quarterly*, and topical cataloging web sites listed in Appendix A reveals a

large concentration of writings relating to metadata, interoperability, and web cataloging. Many web resources and web-based digital collections are being cataloged with extensible mark-up language (XML)-based metadata standards (Tennant, “Bibliographic Metadata”). However, these new metadata standards typically contain fewer elements than the fields found in the current MARC 21 format, and often are not married to the consistent set of cataloging rules that provide prescribed styles, punctuation and authority control, such as those described in the Anglo-American Cataloging Rules 2 (AACR2) (Gorman). The proliferation of XML-based metadata standards in general, and the increasing popularity of the Dublin Core in particular, is leading to inoperable cataloging records that require development of crosswalks to translate fields and elements between various metadata standards (Lightle and Ridgway). Moreover, since the majority of libraries’ catalogs are based on shared records in MARC 21 format using AACR2 rules, there is a growing sense that catalogers must accommodate records utilizing different metadata standards if a unified system of bibliographic control and common cataloging records is to remain a feature of future libraries (Tennant, “Building”).

A controversial aspect of the metadata issue is the view of MARC 21 superiority to emerging metadata standards, since the former often contains many more fields and much more detailed information. “Some believe that the future belongs to metadata—this is hard to believe given that its best-known example, the Dublin Core is an ill-formulated subset of the MARC record” (Gorman 14). Others argue that MARC, created in the 1960s, is not optimized for today’s web environment, especially given the advent of flexible computer languages like XML. “Bibliographic records are being used in a variety of computer systems within libraries...,” says Tennant. “In many cases, MARC is not a

good fit for such systems, and the lack of a rich metadata infrastructure finds libraries making up solutions that may prevent them from building an integrated management system” (“Bibliographic Metadata,” 1).

With more resources being cataloged under a variety of metadata formats, catalogers need to incorporate multiple types of records, in addition to those in the traditional MARC/AAC 2 format, into their catalogs. “[W]e need to craft standards, software tools, and systems that can accept, manipulate, store, output, search, and display metadata from a wide variety of bibliographic or related standards (Tennant, “Building,” 1).” Indeed, a variety of metadata initiatives are underway in the library field, such as the Metadata Object and Description Schema (MODS) and the Metadata Encoding and Transmission Standard (METS) being developed by the Library of Congress. MODS is an abbreviated XML version of MARC 21, and METS an XML schema that can package multiple metadata records in different formats for a digital resource (Guenther and McCallum). OCLC, for its part, is developing Extended WorldCat (XWC), which accommodates XML-based MARC and Dublin Core records (Tennant, “Bibliographic Metadata,” 10).

Many new services are possible by using metadata in library catalogs. For example, the Dublin Core metadata standard has been widely adopted by digital libraries to catalog their digital resources. By using the Open Archives Initiative’s Protocol for Metadata Harvesting (OAI-PMH), these records are often made available for harvesting by service providers. In the future, OAI-PMH can be adapted to make these records directly available and searchable to users, as well as for a variety of other new applications (Van de Sompel, Young, and Hickey, 1). The CORES Resolution, agreed to

by many leading metadata standards organizations, is an initiative to identify metadata elements using Uniform Resource Identifiers (URIs). URIs, or short strings of characters that identify a resource, can be used to promote interoperability and universal identification of a work (Baker and Dekkers, 1). OpenURL, a syntax “designed to enable transportation of metadata and identifiers about reference works and their context from any information resource to a local link server,” is the basis of an increasingly popular set of services in libraries today (Hendricks, 1). By using OpenURL, libraries can link users who have found a resource in a catalog or database directly to the libraries’ holdings of that item.

With so many metadata formats coming online, some authors describe a sense of uncertainty that is facing the profession. “[W]e will be leaving the familiar shores of MARC and venturing out into an ocean where we must be able to deal with just about anything that comes our way” (Tennant, “Bibliographic Metadata,” 10).

Future of Cataloging Survey: A dramatic transformation is underway in the cataloging profession. The well-founded system of cooperative cataloging using the uniform MARC/AACR2 scheme for shared records is being fragmented by conflicting cataloging formats that, thanks to additional technical developments, are ushering in a plethora of pioneering services. To determine how high up this sea change ranked in the minds of the professionals who actually make the complex, original MARC/AACR2 cataloging records that are used throughout libraries around the world, I conducted a survey to elicit their views on the future of cataloging. Four questions on the future of cataloging, listed in Appendix B, were e-mailed to 61 catalogers. The survey recipients were selected from

the web sites listed in Appendix A or as a result of their writings or other professional activities. The pool was also segmented to represent as many facets of the cataloging profession as possible (listed in Appendix C). Fifteen catalogers, or 25% of the recipients, responded. The full text of their answers is found in Appendix D.

Not unexpectedly, the majority (80%) discussed issues relating to e-cataloging, metadata, interoperability and XML as being central in some way to the future of cataloging. Another common theme, mentioned by more than half the respondents, was concern for the training, staffing, and support of future catalogers and cataloging departments. An identical proportion, 53%, predicted FRBR would play an important role in future cataloging efforts. Many of the respondents described a future environment where cataloging records would be augmented with additional data and information. Although examples of their answers are contained in the following sections, readers will find a much richer and more multifaceted view of the future of cataloging by reading the complete set of responses at the end of this paper.

E-cataloging, Metadata and XML: The majority of respondents cited one or more aspects of e-cataloging as presenting the most important issue(s) facing cataloging and/or having a major effect on future cataloging.

The rapidly growing quantity of web and electronic resources that need to be selected, and then cataloged, for a library's collection, was highlighted by several respondents. "I think the two most important issues are connected with the cataloging of electronic documents and resources," says Michael Gorman, Dean of Library Services, California State University, Fresno. "The first is how do we work together [to] identify

the minority of such documents and resources that are worth cataloguing and preserving. The second is how do we work together, nationally and internationally, to catalogue and preserve those worthwhile documents and resources, using internationally agreed standards.” Glenn Patton, Director, WorldCat Content Management, OCLC Online Computer Library Center, Inc., believes the most important issue is “how to gain some degree of control of the vast amount of electronic information that is available and how to integrate traditional, print-based resources and electronic resources into a single, comprehensive catalog for users.”

The consequent pressure on cataloging departments was described by Mary S. Konkel, Assistant Professor, Head of Technical Services, College of DuPage. “The real major new issue over the past 5 years has been the influx of electronic resources which we want to add to our local online catalog to provide added value for our users,” she writes. “Electronic resources, whether they be e-books, e-journals, or web sites, demand even more time from our cataloging staff, and generally a higher level of staffing, who are web savvy.”

The impact of electronic resources in specific areas, such as sound recordings and resources for the visually impaired, was underscored by specialized catalogers. “The proliferation of electronic recorded sound formats and online resources and the bibliographic control of them is what I think will be an important issue to music catalogers,” says Michelle Koth, Catalog Librarian, Yale University Music Library. “We already deal with many different formats (and the various chapters in AACR 2). Now there are even more formats, some of which may not be tangible, in an area that has no bibliographic control.” According to Wendy Hall and Diane Farline, Catalogers, National

Library for the Blind, “The most important issue for NLB is how new formats can be accommodated in MARC 21. Visually impaired people are increasingly looking to new digital and electronic resources and these need to be cataloged in a consistent manner. Standards need to be flexible enough to accommodate new file formats but descriptive enough to provide the user with what they need.”

The role of MARC in a metadata-driven environment received a wide variety of reactions. Some clearly believe in the supremacy of MARC over other formats: “I would drop the present waste of time and money invested in ‘metadata’ schemes (such schemes are simply a minor subset of the MARC record applied by amateurs) and work on the applying real cataloguing standards...,” comments CSU’s Gorman. Daniel Starr, Manager of Bibliographic Operations, Thomas J. Watson Library, The Metropolitan Museum of Art, speaks of the “dumbing down” of cataloging by using less comprehensive formats like Dublin Core. “As soon as we started talking about metadata instead of cataloging, there was a vast drop off in quality. Of course, this is a bit of an exaggeration, but instead of allocating the resources necessary to continue cataloging things, whatever they are, there was a determination made if we dumb down cataloging, avoid MARC, use Dublin Core, we’ll solve the problem and it will allow us to catalog much more.”

At the other end of the spectrum, Roy Tennant, User Services Architect, California Digital Library, thinks “long-standing standards such as MARC and AACR2 are now inadequate and limiting. Catalogers must help the profession create a robust and flexible bibliographic metadata infrastructure that encompasses many more activities and purposes than cataloging has previously encompassed.”

Others envision an interoperable world where MARC will have its place. “Right now, digital libraries are popping up everywhere, and ways to catalog materials other than MARC are being developed,” says Billie Hackney, Head of Monograph Cataloging, Getty Research Institute. “Contrary to what Roy Tennant says, MARC is not dead; crosswalks between all of these new schemas are making it easier every day to integrate databases. Someday it will all be seamless. I hope!”

Several respondents describe the benefits of XML and call for its more rapid adoption into the cataloging infrastructure, a development that they believe will have a positive impact on the profession. “The development and deployment of XML is the single most important development to the cataloging profession, and the most important development to libraries in general since the Internet,” says California Digital Library’s Tennant.

“I would have all producers work with basic formats of schema-determined XML mark ups!” exclaims Gunilla Jonsson, Deputy National Librarian, Director, Department for Collection, Development & Documentation, Kungl. biblioteket, National Library of Sweden, when asked what she would do if she had a magic wand. “Regardless of whether the final product is a digital or a paper publication. (Everything is actually ‘born digital’ today, even if everything isn’t presented in digital form.) And I would have librarians involved in defining those schemas. If this was brought about, practically the complete record for the manifestation would be generated automatically. ... Librarians would execute their influence on the process at the start of it, rather than at the very end, like now, in most cases.”

Also noting the positive effects of XML on cataloging was Patrick Le Boeuf, curator at the National Library of France and chair of the FRBR Review Group in IFLA's Cataloging Section. "A quite marginal project called XOBIS, developed at the Lane Medical Library at Stanford University by Dick Miller and Kevin S. Clarke--this is the most original, innovative, revolutionary and promising view about cataloging I've ever heard of, and it shows what could be achieved in library catalogs thanks to XML."

Training, Staffing and Support: Many participants express fear that enough catalogers are being attracted to the cataloging sector of librarianship. "The lack of professional librarians who want to pursue a career in cataloging is the most important issue right now," says Cynthia M. Whitacre, Manager, Metadata Quality Dept., OCLC. "Why? Without catalogers, access to the bibliographic resources owned by libraries won't happen."

Not only do respondents worry about attracting new catalogers to the profession. They decry the amount and quality of cataloging training available in library schools today, and/or express apprehension about ongoing institutional and financial support for existing cataloging departments. "One important issue is the lack of catalogers. I divide that into two areas: the decline of interest in becoming a cataloger and the fact that it's not taught in library schools typically; and, more importantly, the lack of support institutionally for the existence and support of catalogers and cataloging as a crucial function of a library," says The Metropolitan Museum of Art's Starr.

"I consider the education and training of future catalogers to be critical," professes Getty Research Institute's Hackney. "During the past ten years, many library

schools ceased making 'organization of information' a required course. As a result, many library school students haven't had the opportunity to discover cataloging as a possible profession for them. Cataloging courses that do exist are often inadequate, inconsistent, or too difficult."

Respondents not only criticize the quality of library school cataloging training, but the poor image and negative attitudes of cataloging professors who turn students away from cataloging as a career option. "Those of us who do cataloging tend to really love it," says OCLC's Whitacre. "However, I learned cataloging and to love cataloging by doing, not in library school, mainly because the cataloging instructor there had such a negative attitude about teaching cataloging and just assumed none of us would be interested and taught it with that attitude. We need cataloging professors in library schools who radiate enthusiasm for cataloging and give students a sampling of the fun of the detective work that goes into being a good cataloger."

The concern over catalog training was international in scope. "Cataloging is less and less represented in courses (at least in France), whilst it should be more and more developed," says National Library of France's Le Boeuf. "A student recently said to me: 'The catalog stands at the core of all library services, why does it not stand at the core of a library curator's formal training?'"

The rapid adoption of keyword searching is one reason given for the lack of ongoing support for cataloging departments. "Some administrators feel that the 'Amazon.com' keyword-searching approach is all they need for their catalogs anymore," says Robert B. Freeborn, Music/AV Cataloging Librarian and Associate Librarian, The

Pennsylvania State University. “Keyword searching is fine as long you know exactly what you want, but it isn't a cure-all.”

Another theme is the “graying” of the current generation of catalogers and whether or not they will be replaced when they retire. “I think one of the most important issues facing us over the near term is the aging of the profession generally and of catalogers in particular,” says David Banush, Head, Bibliographic Control Services, Central Technical Services, Cornell University Library. “Within five years, I expect a significant number of senior catalogers to retire. Given current budgets and changing priorities in many libraries, it is almost certain that they will not be replaced, at least not with MLS-holding librarians.”

According to Banush, future contractions in staffing and funding will lead to a decrease in high-quality original cataloging. “Highly polished original records, elaborately annotated in strict accordance with AACR2, will become prohibitively expensive for many libraries,” he explains. “Standards like the PCC core record and practices such as minimal level cataloging, particularly for materials whose potential use is deemed to be of quite low, will be used more widely as cataloging departments try to deal with the great pressures of large numbers of receipts and reduced staffing.”

Functional Requirements for Bibliographic Records: More than half the respondents cited FRBR as having an important influence on cataloging, often describing it as the most seminal development underway in the profession. “I think we are just beginning to see potential effects of the IFLA Functional Requirements for Bibliographic Records

(FRBR) on cataloging practices and on how catalogs work,” says OCLC’s Patton. “This conceptual model will have a profound effect.”

“FRBR will change and is changing the way results will be organized and displayed in online catalogs,” adds OCLC’s Whitacre. “FRBR has created lots of excitement throughout the cataloging world, since it helps to collocate resources in a way that makes sense for patrons’ usage.”

Dr. Barbara B. Tillett, Chief, Cataloging Policy & Support Office, Library of Congress describes “FRBR and its follow-on conceptual models: FRAR- authority records, and a future FRS subjects) and the concept of a ‘Virtual International Authority File’” as the most seminal development in the cataloging profession. “These are influencing such things as the updated Paris Principles (IFLA's draft Statement of International Cataloging Principles), revisions of the world's cataloging codes (including AACR3), and system designs (RedLightGreen, OCLC's Fiction Finder, XISBN, and their new design for WorldCat, etc. Tie those together with better automated systems and integration with the Semantic Web, and we would change current cataloging to enable automatic capturing of ‘transcribed information,’ switching the focus of the human component of cataloging to making bibliographic relationships that machines cannot recognize and assigning controlled vocabularies for precision of searching. The other essential data elements (metadata, or attributes) would be automatically provided by future systems with a quick verification by a human/cataloger.”

Matthew Wise, Music Cataloger, New York University Libraries, details current efforts that are beginning to make FRBR a reality. “I believe that the greatest change that we will be seeing in our library catalogs during the next five years is a move away from

the concept of the catalog as just a sum of its individual records toward a concept in which the catalog is seen as a relational database,” he elaborates. “We are already seeing early proposals for this sort of re-conceptualization in the writings of Barbara Tillett, Sherry Vellucci, Richard Smiraglia, and, of course, Tom Delsey in his FRBR report. VTLS, with its integrated library system iPortal, has been attempting to put the concept into practice by offering ‘FRBRized’ results displays that graphically show hierarchical relationships between works, expressions, and manifestations.”

Others, like the National Library of Sweden’s Jonsson, place FRBR in the context of today’s digital environment. “FRBR has emerged as a consequence of the new environment for bibliographic databases and library catalogues, that is, as a response to the digital catalogue,” she comments. “It does aspire to cater for all kinds of materials, and I think the model is strong enough to develop into doing that, but I don't think that it quite succeeds in doing this yet. What FRBR does bring about is a much better understanding of what cataloguing should achieve, and of authority work of all kinds, as a foundation for more efficient ways of organising and presenting the records in a bibliographic database to the users, and for better ways of navigating through those databases.”

Some catalogers, however, are concerned about the real-life implementation of FRBR. “With all the hoopla about FRBR, I would like to say that the FRBR's ideas are the most important development,” remarks Yale Music Library’s Koth. “However, I am anxious about FRBR, because what I've seen, some of the changes to AACR2 Chapter 25 will make uniform titles possibly even more confusing to users--the exact opposite of FRBR's goals.”

Future Cataloging Records: When imagining how a catalog record will look in five years, many respondents describe existing MARC content that will be accommodated or displayed more efficiently and/or new information that will be added to current MARC records. “I think catalog records of the future will provide access to cover art, book reviews, more complete summaries, TOCs, author bios, etc.,” says OCLC’s Whitacre.

The continuing preponderance of MARC in the cataloging profession is also mentioned in many of their responses. “I believe that the MARC record will still be the dominant framework standard and AACR2, LCSH, etc., will still be the dominant content standards,” says CSU’s Gorman, “though there will be added enriched content (contents, annotations, etc.) derived from commercial sources such as Amazon.com and, god help us, Google.”

“I don't think the MARC format will disappear, the library universe has too much invested in it,” agrees DuPage’s Konkel. “The OCLC Dublin Core may be used more extensively to assist in electronic resource cataloging. What we will see even more is the incorporation of much more international and foreign language contributions to our bibliographic utilities like OCLC, Worldcat and RLIN. We will see more vendor data being contributed as well.”

The current reliance on MARC is the reason California Digital Library’s Tennant believes so little change will occur. “I don’t expect a great deal to be different within five years, since I am skeptical about how fast the profession will move,” he forecasts. “What I hope will have happened is that we have developed a much richer set of bibliographic metadata tools, policies, and procedures....”

Several respondents foresee new workflows away from catalogers into the hands of vendors or by machines. “[A]t ALA in January, I saw a presentation about a program that would harvest information from web sites and create the basic description and URL in a MARC record,” recounts Getty Research Institute’s Hackney. “Shrinking budgets and the lack of resources will encourage these kinds of efforts.”

“What we will see is more and more cataloging done and provided by vendors,” foretells The Metropolitan Museum of Art’s Starr. “Copy cataloging is an attempt to avoid having to catalog something multiple times in multiple libraries. If you take that one step further back in the process of publishing, distributing and acquiring materials—if the vendors catalog resources—that will eliminate the need for any kind of duplicate effort in cataloging.”

Some catalogers hope that information hidden in today’s MARC records will finally be utilized more effectively. “Currently the MARC format conveys a great wealth of information which is not readily accessible to our users (e.g., many of the 0XX fields),” says Penn State’s Freeborn. “Hopefully a future OPAC system will be able to utilize this information to the benefit of our users, but I’m afraid that’s probably a lot farther off than 5 years.”

Others point out user demand for new types of information in catalog records as a force that will compel change in cataloging records. “The availability of table of contents data, book summaries and reviews, and other external metadata on the Web, as well as ‘competition’ from online booksellers’ Web sites, will increase pressure on libraries to enhance their MARC records,” says Cornell’s Banush. “Users will become increasingly frustrated at the relative dearth of information provided by a catalog record when

compared to (say) an Amazon.com entry. Also, as more volumes in large research collections are moved off-site, the consequent restrictions on browsing may mean that users demand such services for older and less frequently used materials. Libraries will thus need to find ways to add these materials as quickly and inexpensively as possible to bibliographic records.”

The influence of Amazon.com is also mentioned by the National Library for the Blind’s Hall and Farline as having an impact on catalog records: “Catalogues might also take inspiration from the book trade (e.g. Amazon) and include audio visual material in its records, such as book covers, audio excerpts as well as customizing its own records with reader reviews, links to other resources, e.g. ‘what to read next books.’”

Other information will be available in catalog records, thanks to the digital world, predicts National Library of Sweden’s Jonsson. “I think we will still have records for manifestations as the basic record, which we can never do without,” she predicts. “This record, however, will contain much more information than today--if it is a record for a digital publication it will carry much technical data, about the file formats and different style sheets available, links to image or sound files that belong with this particular manifestation and other kinds of administrative and preservation data that the ordinary cataloguer is not concerned with.

“Different presentation displays will be utilized,” she continues, “depending on the user and the user needs, and on the conditions of access. This manifestation record will also carry links to a number of authority records of different kinds, and, of course, information from those records will also be utilized in presentation displays in different ways.”

On the penultimate end of the scale, the National Library of France's Le Boeuf presents a vision of what a future cataloging record could be: "no more ISBDs nor ISBD punctuation (just a listing of required data elements); no more MARC formats (XML-based formats instead--not just MARC encapsulated in XML tags, but a genuine XML-based format); 'intelligent' catalogs with interlinked records and more 'navigable' hotlinks within the catalog; records for works, not just for publications of works; connections between authority files and the Semantic Web; more collaboration between libraries and museums, through the use of common conceptual models; and a widespread recognition that catalogs are (or should be) high-precision scientific tools."

Areas for Future Study: The four themes repeated in the informal cataloging survey each serve as topics for more formal study. The issues related to metadata and e-cataloging are well-covered in library literature. However, surveys of professional catalogers eliciting opinions on how XML-based metadata formats can operate seamlessly within current catalogs would provide useful suggestions on how the transition from MARC/AACR2-based catalogs to catalogs with multiple record formats can (or cannot) be achieved. Another seminal topic, namely, inadequate cataloger staffing and training, warrants further scholarly investigation and formal discussion in library literature, since in many ways the future of cataloging hinges upon this matter. The two other issues--FRBR and the format of enriched cataloging records--would also benefit from official surveys that clarify the goals and potential impact of FRBR, and describe more fully how future cataloging records, with increased information, can improve librarians' ability to better meet user needs.

Appendix A: Cataloging Web Sites Used to Find Survey Members

Art Libraries Society of North America Home Page: <<http://www.arlisna.org/>>

BIBCO: <<http://www.loc.gov/catdir/pcc/bibco.html>>

Cataloging: <<http://www.loc.gov/catdir/>>

CONSER: <<http://www.loc.gov/acq/conser/>>

Music Library Association: <<http://www.musiclibraryassoc.org/>>

NACO: <<http://www.loc.gov/catdir/pcc/naco.html>>

OCLC Research: <<http://www.oclc.org/research/default.htm>>

Program for Cooperative Cataloging: <<http://www.loc.gov/catdir/pcc/>>

SACO: <<http://www.loc.gov/catdir/pcc/saco.html>>

Visual Resources Association: <<http://www.vraweb.org>>

Appendix B: Future of Cataloging Survey Questions

1) What do you think is the most important issue facing the catalog profession (or your specific area of cataloging) right now, and why is it so important?

2) If you had a magic wand, what would you change in the way resources in your sector are cataloged today or what would you change in the way the profession is structured?

3) What is the most seminal development underway in your sector of the profession, and how is it changing the way resources will be cataloged in the future?

4) In five years, how do you predict a catalog record will be different from what we are used to today, and what new information will it provide?

Appendix C: Facets of Cataloging Represented in Survey Selection

(Number of catalogers sent survey in parenthesis)

Part 1: Cataloging by Type of Material

Art (4)
Audio-Visuals (5)
Maps (1)
Monographs (6)
Music (2)
Serials (8)
Special Materials (7)

Part 2: Organizations, General, and Research*

American Library Association (3)
The British Library (1)
Cataloging, General (6)
Cataloging, Research (3)
CONSER (2)
Databases, Vendors (2)
MARC (4)
NACO (1)
National Library of Canada (1)
National Library of Wales (1)
OCLC (2)
Research Libraries Group (1)
U.S. Government Printing Office (1)

* *Library of Congress representatives are mixed throughout the categories.*

Appendix D: Full-Text of Survey Responses

David Banush, Head, Bibliographic Control Services, Central Technical Services, Cornell University Library

What do you think is the most important issue facing the catalog profession (or your specific area of cataloging) right now, and why is it so important?

It's very difficult to identify one single topic; the important issues are many and multifaceted. But I think one of the most important issues facing us over the near term is the aging of the profession generally and of catalogers in particular. Within five years, I expect a significant number of senior catalogers to retire. Given current budgets and changing priorities in many libraries, it is almost certain that they will not be replaced, at least not with MLS-holding librarians. Despite talk that often leads one to suspect otherwise, I do not believe that print materials will be vanishing over the next 15-20 years. And while I do believe that the volume of printed materials will decrease, the number of unique titles may actually increase, requiring more original cataloging effort. That means we will have a large scale challenge in handling the materials and in training those new staff we are able to hire. Recruiting to the field, with its low status and low pay, will also be difficult, especially for those staff who will not be classified as "professional." It's possible that technological developments may alleviate some of the need for human mediation of printed library resources, but those developments are still some time off, if they indeed arrive. For the foreseeable future, people will still need, and need to perform, cataloging.

We will almost certainly see an increased reliance on contract cataloging services (outsourcing) as a result of the retirements, budget pressures and other changes. It will be important for librarians to maintain the standards by which materials are described and organized for effective discovery, even if librarians are not necessarily going to be applying the standards themselves, but only managing those who do. Indeed, cataloging will probably be moving closer to the acquisitions model, where a relatively small number of MLS librarians (one or two, say) oversee a department composed of non-MLS staff. As a result, cataloging leaders will have to become more savvy as managers. The profession, including the MLS programs, may need to put a greater emphasis on management training for librarians as a result.

In five years, how do you predict a catalog record will be different from what we are used to today, and what new information will it provide?

Two contradictory but simultaneous trends will be affecting what a cataloging record looks like in the near future. On the one hand, the decreasing number of staff handling printed materials, taken with a steady or even increased volume of materials requiring original cataloging, will put even greater strain on staff to become more productive. That

will necessarily dictate some combination of increased automation and decreased human effort. Thus there will be a trend toward more abbreviated cataloging and toward using automation to generate (or augment) records wherever possible. Highly polished original records, elaborately annotated in strict accordance with AACR2, will become prohibitively expensive for many libraries. Standards like the PCC core record and practices such as minimal level cataloging, particularly for materials whose potential use is deemed to be of quite low, will be used more widely as cataloging departments try to deal with the great pressures of large numbers of receipts and reduced staffing.

At the same time, the availability of table of contents data, book summaries and reviews, and other external metadata on the Web, as well as "competition" from online booksellers' Web sites, will increase pressure on libraries to enhance their MARC records. Users will become increasingly frustrated at the relative dearth of information provided by a catalog record when compared to (say) an Amazon.com entry. Also, as more volumes in large research collections are moved off-site, the consequent restrictions on browsing may mean that users demand such services for older and less frequently used materials. Libraries will thus need to find ways to add these materials as quickly and inexpensively as possible to bibliographic records. Again, automation and outsourcing will probably play significant roles in accomplishing that aim. Business savvy and information technology management skills will be critical in enabling cataloging departments to meet these goals.

Robert B. Freeborn, Music/AV Cataloging Librarian and Associate Librarian, The Pennsylvania State University

What do you think is the most important issue facing the catalog profession (or your specific area of cataloging) right now, and why is it so important?

One important issue that keeps reoccurring is the continuing existence of local cataloging departments. Some administrators feel that the "Amazon.com" keyword-searching approach is all they need for their catalogs anymore. Keyword searching is fine as long you know exactly what you want, but it isn't a cure-all. When one is unsure of what they're exactly looking for, then working with a controlled thesaurus (such as LCSH) can help them to focus their search. Another thing that keyword searching won't automatically provide is an authoritative listing of every work by a certain person or organization. When correctly established, authority control helps users to find a great wealth of information that they might have missed if they'd simply used keyword searching (by way of example, take a look at your own catalog and see how many ways "Peter Ilyich Tchaikovsky" is spelled).

If you had a magic wand, what would you change in the way resources in your sector are cataloged today or what would you change in the way the profession is structured?

In terms of the former, a couple things spring to mind. First, cataloging departments can always use more staffing. I believe that our department is fortunate in our staff's high level of competency, but we really need more of them to handle the mass of backlogs and ever-increasing rush requests. Second, it would be great to have an OPAC (online public access catalog) system that really works for tech services, public services and users alike. Right now each of us has to deal with so many limitations that no one is satisfied.

What is the most seminal development underway in your sector of the profession, and how is it changing the way resources will be cataloged in the future?

I think it has to be FRBR (Functional Requirements for Bibliographic Records). In a talk at the 2003 Music Library Association annual conference, Jennifer Bowen from the Eastman School of Music described FRBR as a "conceptual model for thinking about how users use bibliographic information" that "relates bibliographic data to user tasks (i.e., find, identify, select, obtain)." As I understand it, much of AACR3 will incorporate FRBR concepts. Therefore, every cataloger should prepare themselves by finding out all they can on FRBR and its entities (e.g., work, expression, manifestation, item).

In five years, how do you predict a catalog record will be different from what we are used to today, and what new information will it provide?

I'm not sure that a future catalog record will look much different from its present-day counterpart, at least from the cataloger's standpoint. Currently the MARC format conveys a great wealth of information which is not readily accessible to our users (e.g., many of the 0XX fields). Hopefully a future OPAC system will be able to utilize this information to the benefit of our users, but I'm afraid that's probably a lot farther off than 5 years. Perhaps we'll see an amalgamation of the MARC format with another metadata standard such as Dublin Core or EAD (Encoded Archival Description); especially with the rise of FRBR.

**Michael Gorman, Dean of Library Services, California State University, Fresno;
Editor AACR2, 1978 and 1988 and author Concise AACR2 (all three editions)**

What do you think is the most important issue facing the catalog profession (or your specific area of cataloging) right now, and why is it so important?

I have been a library administrator for the past 25+ years but I am a lapsed cataloguer and have kept up an interest in cataloguing and cataloguing standards. I think the two most important issues are connected with the cataloguing of electronic documents and resources. The first is how do we work together [to] identify the minority of such documents and resources that are worth cataloguing and preserving. The second is how do we work together, nationally and internationally, to catalogue and preserve those worthwhile documents and resources, using internationally agreed standards.

If you had a magic wand, what would you change in the way resources in your sector are cataloged today or what would you change in the way the profession is structured?

I would drop the present waste of time and money invested in "metadata" schemes (such schemes are simply a minor subset of the MARC record applied by amateurs) and work on the applying real cataloguing standards as in the previous answer.

What is the most seminal development underway in your sector of the profession, and how is it changing the way resources will be cataloged in the future?

The major development in academic libraries is the underfunding of cataloguing departments leading to a diminution of the effort to achieve Universal Bibliographic Control.

In five years, how do you predict a catalog record will be different from what we are used to today, and what new information will it provide?

I believe that the MARC record will still be the dominant framework standard and AACR2, LCSH, etc., will still be the dominant content standards, though there will be added enriched content (contents, annotations, etc.) derived from commercial sources such as Amazon.com and, god help us, Google.

Billie Hackney, Head of Monograph Cataloging, Getty Research Institute

What do you think is the most important issue facing the catalog profession (or your specific area of cataloging) right now, and why is it so important?

I consider the education and training of future catalogers to be critical. There are good teachers and trainers out there, but there aren't enough of them. Training in library schools is often inadequate, and every library seems to train their catalogers in a different way. This issue is often discussed on AUTOCAT.

During the past ten years, many library schools ceased making "organization of information" a required course. As a result, many library school students haven't had the opportunity to discover cataloging as a possible profession for them. Cataloging courses that do exist are often inadequate, inconsistent, or too difficult -- almost certainly because there is way too much information to cover, and each teacher has to make choices. Some focus too much on theory, some too much on hands-on experience, and many professors don't work in the profession and are not up on the latest rules. These factors, along with the "graying" of librarianship, make good catalogers hard to find.

I went to library school in 1996/1997; I had already been working in a cataloging department for six years, and I knew I wanted to be a professional cataloger. I was not

encouraged. People told me outright that catalogers would no longer be needed in a few years, and the general perception of cataloging as a profession was negative. The required cataloging course I took was so unnecessarily difficult and demanding that many of my classmates were turned off of cataloging forever. This is not the way to recruit much needed new people into what I find to be a challenging and satisfying profession.

If you had a magic wand, what would you change in the way resources in your sector are cataloged today or what would you change in the way the profession is structured?

One thing we desperately need is for all of our standard cataloging references to include MARC coding (especially AACR2). It's frustrating for people learning cataloging to have to put content and coding together on their own.

Another thing that confuses patrons is how the format and type of material is all over the record, and the coding in the 008 and leader is often either incomplete or redundant. For example, we have a code "g" in the 008 type of record for projected graphic, [videorecording] in the 245\$h, "videocassette" in the 300 ... but you have to go down to the 538 to see that what you have is "VHS." If a piece has multiple languages, the first language code is in the 008 but the rest are in the 041, and we sometimes need to put in a 546 field to describe the language situation if it's too complex. It would be wonderful if there were just one place for this information.

I would also really like to see subject fields move away from strings and facets. It seems redundant to add a form/genre term to each subject heading when you could just add it once in a form/genre field. Computers should be able to do this kind of coordinated searching for the patron and hopefully will someday.

As far as how the profession is structured, it's often difficult to determine the level of an applicant's cataloging skills. Many people in IT take tests, acquire certificates of completion, and move up to higher levels. I've often wondered if some kind of certificate system in cataloging might be helpful.

What is the most seminal development underway in your sector of the profession, and how is it changing the way resources will be cataloged in the future?

Right now, digital libraries are popping up everywhere, and ways to catalog materials other than MARC are being developed. Contrary to what Roy Tennant says, MARC is not dead; crosswalks between all of these new schemas are making it easier every day to integrate databases. Someday it will all be seamless. I hope!

In five years, how do you predict a catalog record will be different from what we are used to today, and what new information will it provide?

There will be many more records that did not start their existence in MARC. There may even be many records created by machine; at ALA in January, I saw a presentation about a program that would harvest information from web sites and create the basic description

and URL in a MARC record. Shrinking budgets and the lack of resources will encourage these kinds of efforts.

One thing non-catalogers rarely understand is the uniform title. FRBR (Functional Requirements for Bibliographic Records) will make the uniform title more useful.

Wendy Hall and Diane Farline, Cataloguers, National Library for the Blind

What do you think is the most important issue facing the catalog profession (or your specific area of cataloging) right now, and why is it so important?

The most important issue for NLB is how new formats can be accommodated in MARC21. Visually impaired people are increasingly looking to new digital and electronic resources and these need to be catalogued in a consistent manner. Standards need to be flexible enough to accommodate new file formats but descriptive enough to provide the user with what they need. Revealweb has worked to expand the Holdings 007 field to include information about DAISY files and audio described videos and additional descriptive coding for tactile, audio and large print formats.

If you had a magic wand, what would you change in the way resources in your sector are cataloged today or what would you change in the way the profession is structured?

NLB is a registered charity and in an ideal world would be funded by statutory funding, either through Public Libraries or the British Library.

What is the most seminal development underway in your sector of the profession, and how is it changing the way resources will be cataloged in the future?

The development of new digital and electronic formats will have the biggest impact. NLB's library management system does not currently hold hypertext links at the holdings level. This needs to be developed so that electronic resources can be described at the holdings level in the same way as other formats. Currency of links, usage statistics and security issues also need to be addressed.

In five years, how do you predict a catalog record will be different from what we are used to today, and what new information will it provide?

There will be a greater range of formats available and therefore records will have to hold this information in more depth. As more catalogues become part of union and consortium catalogues descriptive information about the organisation holding a resource will become more important.

Catalogues might also take inspiration from the book trade (e.g. amazon) and include audio visual material in its records, such as book covers, audio excerpts as well as customising its own records with reader reviews, links to other resources e.g. “what to read next” books.

Gunilla Jonsson, Deputy National Librarian, Director, Department for Collection, Development & Documentation, Kungl. biblioteket, National Library of Sweden

What do you think is the most important issue facing the catalog profession (or your specific area of cataloging) right now, and why is it so important?

[T]he development of automatic and semi automatic tools to capture bibliographic data directly from digital publications and to organise the already vast and growing amount of digital resources. -- This means a much closer communication and co-operation between libraries and producers, and it is already obvious that this also has a spin-off effect on the work flow for the traditional material published on paper (still by far the majority of manifestations that libraries handle). Why is it important? Because there simply are not, and never will be, enough cataloguers in the world to handle the output of digital resources by our old, manual routines. I know that some librarians (especially, prolific American librarians) argue that we should only care about that which is of sufficiently "high value", however you define that. Even so, you do need some better way to sort that out than by looking through the web sites of well known publishers or institutions. Anyway, a national library cannot take that attitude, we have to find some way to organise roughly, even if we do not necessarily catalogue everything.

If you had a magic wand, what would you change in the way resources in your sector are cataloged today or what would you change in the way the profession is structured?

I would have all producers work with basic formats of schema-determined XML mark ups! Regardless of whether the final product is a digital or a paper publication. (Everything is actually "born digital" today, even if everything isn't presented in digital form.) And I would have librarians involved in defining those schemas. If this was brought about, practically the complete record for the manifestation would be generated automatically. Records would still have to be checked, at least at random, to assure that they meet required quality criteria, and maybe there would also still be a certain amount of coded information that libraries would wish to add that couldn't always be automatically generated. Librarians would execute their influence on the process at the start of it, rather than at the very end, like now, in most cases.

What is the most seminal development underway in your sector of the profession, and how is it changing the way resources will be cataloged in the future?

I think, in a way, I have already answered that question. I see it in the way publishing changes, and the emergence of digital publishing is the most crucial development,

because it changes the publishing environment and the way the material is acquired, collected, catalogued, accessed and made available. In short, I could maybe have answered, the Internet. -- I can guess that you maybe wanted me to answer the existence of FRBR and the influence that model has on the international cataloguing discussion and on new practical implementations of ways to use bibliographic databases. I do see FRBR as immensely important, but it is certainly second to the publishing environment at large, that is, the context in which we work. FRBR has emerged as a consequence of the new environment for bibliographic databases and library catalogues, that is, as a response to the digital catalogue. It does aspire to cater for all kinds of materials, and I think the model is strong enough to develop into doing that, but I don't think that it quite succeeds in doing this yet. What FRBR does bring about is a much better understanding of what cataloguing should achieve, and of authority work of all kinds, as a foundation for more efficient ways of organising and presenting the records in a bibliographic database to the users, and for better ways of navigating through those databases.

In five years, how do you predict a catalog record will be different from what we are used to today, and what new information will it provide?

[A] Danish politician of the 19th century once said, "Predicting is difficult, especially about the future". I'll try, however. I think we will still have records for manifestations as the basic record, which we can never do without. This record, however, will contain much more information than today -- if it is a record for a digital publication it will carry much technical data, about the file formats and different style sheets available, links to image or sound files that belong with this particular manifestation and other kinds of administrative and preservation data that the ordinary cataloguer is not concerned with. Different presentation displays will be utilized, depending on the user and the user needs, and on the conditions of access. This manifestation record will also carry links to a number of authority records of different kinds, and, of course, information from those records will also be utilized in presentation displays in different ways. Librarians will, like today, spend most of their time on elaborating authority information, but instead of repeating and repeating the same or similar strings in single records, they will spend their best time building a variety of authority files and mapping or linking between different authority files (from a national to an international, e.g.). All these authority files (here, the magic wand is in action again) will be available for use even on the web, and, hopefully, at least some web producers will take advantage of them for name forms and subject information.

In many cases, the record will also be the way to access the resource itself, and thus the "library shelf" is actually integrated in the record, if you see what I mean. -- This is in fact not the future, it is what we have already for digital publications, but I expect this to increase considerably during the coming five years.

Mary S. Konkell, Assistant Professor, Head of Technical Services,

College of DuPage

What do you think is the most important issue facing the catalog profession (or your specific area of cataloging) right now, and why is it so important?

I don't think that the issues have changed over the years at all. Our number one goal is to provide the best public service possible to our users by getting the materials on the shelf as quickly as possible. Trying to keep abreast of current/new acquisitions and balancing that with gift materials (and depending upon the library you are in, gifts are a tremendous addition to your backlog or not a major issue). Losing positions to the direct public service areas of the library i.e. Reference and instruction are things we have been grappling with for years. The real major new issue over the past 5 years has been the influx of electronic resources which we want to add to our local online catalog to provide added value for our users. Electronic resources, whether they be ebooks, ejournals, or web sites, demand even more time from our cataloging staff, and generally a higher level of staffing, who are web savvy.

If you had a magic wand, what would you change in the way resources in your sector are cataloged today or what would you change in the way the profession is structured?

I am quite content with the resources available to assist me in the Cataloging field. I have been a cataloger and cataloging supervisor for 18+ years. Oclc, online library of congress tools, the tried and true paper reference tools i.e. Lc schedules, lcris, texts, etc., our local system, and the myriad of outsourcing vendor, as well as our own book vendors can provide assistance with marc records, physical processing, electronic ordering, etc.--- if you need to make use of these services. As a faculty librarian in each of the institutions i have worked in, i have had the good fortune to share in faculty governance, participate in campus committees, have equal stature on library committees and in library decision-making. Being a primarily back room worker has not in any way hampered my ability to professionally develop nor contribute. If i had a magic wand, it would be to gain additional staffing for technical services, but not if it would mean in Place of a reference or instruction librarian. I would want it all! I would much rather handle materials in house than outsource. In the long run, it is cheaper, faster, and tailor made.

What is the most seminal development underway in your sector of the profession, and how is it changing the way resources will be cataloged in the future?

I think i briefly mentioned already that electronic resources are the newest challenge to cataloging, requiring talented staff savvy in the electronic arena, who are willing to work with collection managers in identifying the best resources to "add value" to the online catalog.

In five years, how do you predict a catalog record will be different from what we are used to today, and what new information will it provide?

I don't think the marc format will disappear, the library universe has too much invested in it. The oclc dublin core may be used more extensively to assist in electronic resource cataloging. What we will see even more is the incorporation of much more international and foreign language contributions to our bibliographic utilities like oclc worldcat and rlin. We will see more vendor data being contributed as well. While it will make these databases richer, it will also provide some challenges in mining records. Authority control will be even more critical and see be another aspect of cataloging that requires staffing unless you opt to use vendor provided services. We will also see our online catalog vendors capable of producing non-roman alphabet records.

Michelle Koth, Catalog Librarian, Yale University Music Library

What do you think is the most important issue facing the catalog profession (or your specific area of cataloging) right now, and why is it so important?

The proliferation of electronic recorded sound formats and online resources and the bibliographic control of them is what I think will be an important issue to music catalogers. We already deal with many different formats (and the various chapters in AACR2). Now there are even more formats, some of which may not be tangible, in an area that has no bibliographic control.

If you had a magic wand, what would you change in the way resources in your sector are cataloged today or what would you change in the way the profession is structured?

If I had a magic wand, I would globally change all the headings and call numbers that I think are difficult for users to understand.

For example, some subject headings are so complex that I wonder how users can ever figure them out. See my webpage on assigning subject headings for choral music: <http://www.library.yale.edu/cataloging/music/darnchor.htm>. Other subject headings are so broad that they are useless.

The music section of LC Classification was about a century ago and is insufficient for much of the music composed in the meantime. Wouldn't it be nice to have a magic wand to add more specific class numbers to accommodate new types of music and then retrospectively assign them AND change the call numbers on all the items on the shelf and move them to their new places?

What is the most seminal development underway in your sector of the profession, and how is it changing the way resources will be cataloged in the future?

With all the hoopla about FRBR, I would like to say that the FRBR's ideas are the most important development. However, music catalogers have been applying many of FRBR's

recommendations since before AACR2. However, I am anxious about FRBR, because what I've seen, some of the changes to AACR2 Chapter 25 will make uniform titles possibly even more confusing to users- the exact opposite of FRBR's goals.

In five years, how do you predict a catalog record will be different from what we are used to today, and what new information will it provide?

I wonder if we will still use ISBD punctuation. We've carried the "card" format over to the OPAC, but now individual libraries have so much control over how bibliographic records display in the OPAC.

As far as music materials go, we will probably have a wider range of terminology to describe the various formats in the physical description area. I assume, with the implementation of FRBR, uniform titles will include more information to include data about edition, editor, etc. (see above).

Patrick Le Boeuf, curator at the National Library of France; also chair of the FRBR Review Group within IFLA's Cataloging Section, and chair of the WorkingGroup on dialogue between the FRBR model and the CRM model for museums,affiliated to the FRBR Review Group; also information coordinator and editor for the IFLA Cataloging Section

What do you think is the most important issue facing the catalog profession (or your specific area of cataloging) right now, and why is it so important?

There are many important issues facing the catalog profession. Just to name a few:
- Formal training. Cataloging is less and less represented in courses (at least in France), whilst it should be more and more developed. A student recently said to me: "The catalog stands at the core of all library services, why does it not stand at the core of a library curator's formal training?"
- The challenge of electronic resources.
- The limitations of MARC formats. They should be replaced with something else (based on XML), but that would cost much money and change habits: these are two obstacles that cannot be easily dismissed.

If you had a magic wand, what would you change in the way resources in your sector are cataloged today or what would you change in the way the profession is structured?

The "rule of three" would be abolished; more attention would be devoted to the identification of works and the description (and contextualization) of content (Lubetzky's thought should be at the core of all library systems!); catalogs would contain more links and would be more easily navigated; there would be less emphasis on printed textual materials in cataloging rules, so that "non-book materials" could be more accurately

described, following rules of their own. These are but dreams, of course; all of that would be too expensive to be fulfilled.

What is the most seminal development underway in your sector of the profession, and how is it changing the way resources will be cataloged in the future?

There are two most seminal developments underway in the field of cataloging:

- The modeling effort, with FRBR and FRANAR
- The effort towards a "globalization" in cataloging, with the planned series of meetings called IME ICC (IFLA Meetings of Experts for an International Cataloging Code)

Two other developments are perhaps less "seminal", but might prove important too:

- The project of a Virtual International Authority File (VIAF) advocated by Barbara Tillet from the Library of Congress
- A quite marginal project called XOBIS, developed at the Lane Medical Library at Stanford University by Dick Miller and Kevin S. Clarke: this is the most original, innovative, revolutionary and promising view about cataloging I've ever heard of, and it shows what could be achieved in library catalogs thanks to XML.

In five years, how do you predict a catalog record will be different from what we are used to today, and what new information will it provide?

Five years is too short for a prediction. From a merely technical viewpoint, much is possible indeed; but once again (see Answer #1), economical constraints and the psychological aspects of habits vs. innovation are huge obstacles to a rapid development. What I dream of: no more ISBDs nor ISBD punctuation (just a listing of required data elements); no more MARC formats (XML-based formats instead -- not just MARC encapsulated in XML tags, but a genuine XML-based format); "intelligent" catalogs with interlinked records and more "navigable" hotlinks within the catalog; records for works, not just for publications of works; connections between authority files and the Semantic Web; more collaboration between libraries and museums, through the use of common conceptual models; and a widespread recognition that catalogs are (or should be) high-precision scientific tools. What reality presumably will be: there certainly won't be huge changes. Unless perhaps catalogers just disappear, and bibliographic records are automatically created through ONIX. Or unless perhaps library managers impose unqualified Dublin Core for everything, as it is far less expensive.

Glenn Patton, Director, WorldCat Content Management, OCLC Online Computer Library Center, Inc.

What do you think is the most important issue facing the catalog profession (or your specific area of cataloging) right now, and why is it so important?

GP: How to gain some degree of control of the vast amount of electronic information that is available and how to integrate traditional, print-based resources and electronic resources into a single, comprehensive catalog for users.

If you had a magic wand, what would you change in the way resources in your sector are cataloged today or what would you change in the way the profession is structured?

GP: I'd use my magic wand to insure that electronic resources included basic metadata that could be extracted to form a basic bibliographic description.

What is the most seminal development underway in your sector of the profession, and how is it changing the way resources will be cataloged in the future?

GP: I think we are just beginning to see potential effects of the IFLA Functional Requirements for Bibliographic Records (FRBR) on cataloging practices and on how catalogs work. This conceptual model will have a profound effect.

In five years, how do you predict a catalog record will be different from what we are used to today, and what new information will it provide?

GP: Because of the influence of the FRBR model, I think bibliographic records will include more uniform titles as "organizing elements".

Daniel Starr, Manager of Bibliographic Operations, Thomas J. Watson Library, The Metropolitan Museum of Art (Phone Interview 03/08/04)

What do you think is the most important issue facing the catalog profession (or your specific area of cataloging) right now, and why is it so important?

One important issue is the lack of catalogers. I divide that into two areas: the decline of interest in becoming a cataloger and the fact that it's not taught in library schools typically; and, more importantly, the lack of support institutionally for the existence and support of catalogers and cataloging as a crucial function of a library. One specific example I see happening in the profession in general is the widespread complaint that no one is doing original cataloging anymore. Everyone is waiting for someone else to do it so they can copy catalog it. I'm all for copy cataloging -- we try to do as much as possible, but at some point someone has to do the original cataloging.

What is the most seminal development underway in your sector of the profession, and how is it changing the way resources will be cataloged in the future?

In general, the dumbing down of cataloging. As soon as we started talking about metadata instead of cataloging, there was a vast drop off in quality. Of course, this is a bit of an exaggeration, but instead of allocating the resources necessary to continue

cataloging things, whatever they are, there was a determination made if we dumb down cataloging, avoid MARC, use Dublin Core, we'll solve the problem and it will allow us to catalog much more. It's true — there are many more resources being described of all types, including visual images and web sites, but I think the problem that is not visible is that it ultimately shifts the work elsewhere. Anytime that you're doing reference or trying to find one of these resources without adequate cataloging, it becomes much harder or impossible to find.

In five years, how do you predict a catalog record will be different from what we are used to today, and what new information will it provide?

What we will see is more and more cataloging done and provided by vendors. Copy cataloging is an attempt to avoid having to catalog something multiple times in multiple libraries. If you take that one step further back in the process of publishing, distributing and acquiring materials -- if the vendors catalog resources -- that will eliminate the need for any kind of duplicate effort in cataloging. Vendor cataloging is adequate, but often not what we are used to seeing or expect to see, and I think that is going to be another trend. We're going to have to make do with worse and worse cataloging. At the same time, if we knew the books we purchased from vendors came with good cataloging records -- because we will always have material that no one else has -- our catalogers can spend their time creating original records for those items.

● * * * * *

●

Roy Tennant, User Services Architect, California Digital Library

What do you think is the most important issue facing the catalog profession (or your specific area of cataloging) right now, and why is it so important?

The most important issue facing the cataloging profession is to entirely reconstruct what catalogers do to meet the challenges and opportunities facing libraries today. Such principles as controlled vocabularies and authority control are more important than ever, but how catalogers go about applying such principles must be changed from the ground up. Long-standing standards such as MARC and AACR2 are now inadequate and limiting. Catalogers must help the profession create a robust and flexible bibliographic metadata infrastructure that encompasses many more activities and purposes than cataloging has previously encompassed. For more on this issue, I am attaching an article that is in press for Library Hi Tech.

If you had a magic wand, what would you change in the way resources in your sector are cataloged today or what would you change in the way the profession is structured?

See the attached article.

What is the most seminal development underway in your sector of the profession, and how is it changing the way resources will be cataloged in the future?

The development and deployment of XML is the single most important development to the cataloging profession, and the most important development to libraries in general since the Internet. It is changing cataloging by providing a mechanism by which bibliographic metadata can be more easily created, transmitted, and processed. By using XML, we have the opportunity to use mainstream tools created and used by a much wider array of companies and organizations, as well as any metadata they create to describe objects of interest to us.

In five years, how do you predict a catalog record will be different from what we are used to today, and what new information will it provide?

I don't expect a great deal to be different within five years, since I am skeptical about how fast the profession will move. What I hope will have happened is that we have developed a much richer set of bibliographic metadata tools, policies, and procedures along the line of what I describe in the attached article.

Dr. Barbara B. Tillett, Chief, Cataloging Policy & Support Office, Library of Congress

What is the most seminal development underway in your sector of the profession, and how is it changing the way resources will be cataloged in the future?

FRBR (Functional Requirements for Bibliographic Records - and its follow-on conceptual models: FRAR- authority records, and a future FRS subjects) and the concept of a "Virtual International Authority File." These are influencing such things as the updated Paris Principles (IFLA's draft Statement of International Cataloguing Principles), revisions of the world's cataloging codes (including AACR3), and system designs (RedLightGreen, OCLC's Fiction Finder, XISBN, and their new design for WorldCat, etc.). Tie those together with better automated systems and integration with the Semantic Web, and we would change current cataloging to enable automatic capturing of "transcribed information," switching the focus of the human component of cataloging to making bibliographic relationships that machines cannot recognize and assigning controlled vocabularies for precision of searching. The other essential data elements (metadata, or attributes) would be automatically provided by future systems with a quick verification by a human/cataloger.

**Matthew Wise, Music Cataloger, New York University Libraries; Past-Chair, Bibliographic Control Committee, Music Library Association
Voting Member, Committee on Cataloging: Description and Access, American Library Association**

In five years, how do you predict a catalog record will be different from what we are used to today, and what new information will it provide?

I believe that the greatest change that we will be seeing in our library catalogs during the next five years is a move away from the concept of the catalog as just a sum of its individual records toward a concept in which the catalog is seen as a relational database. We are already seeing early proposals for this sort of re-conceptualization in the writings of Barbara Tillett, Sherry Vellucci, Richard Smiraglia, and, of course, Tom Delsey in his FRBR report. VTLS, with its integrated library system iPortal, has been attempting to put the concept into practice by offering "FRBRized" results displays that graphically show hierarchical relationships between works, expressions, and manifestations. We're also seeing many newly-designed catalog interfaces that attempt to show relationships between those entities represented within the catalog and those entities which exist outside of the catalog, such as citation databases, book jacket images, book reviews, table of contents files, etc. Although it is too soon to predict how this new concept of the catalog will specifically influence the nature of individual catalog records, there are groups, such as the Format Variations Working Group of the Joint Steering Committee for the Revision of AACR (JSC), which are currently exploring these issues. Clearly, the recent decision of the JSC to begin work on a 3rd ed. of AACR will have a important impact upon this re-conceptualization.

Cynthia M. Whitacre, Manager, Metadata Quality Dept., OCLC

What do you think is the most important issue facing the catalog profession (or your specific area of cataloging) right now, and why is it so important?

The lack of professional librarians who want to pursue a career in cataloging is the most important issue right now. Why? Without catalogers, access to the bibliographic resources owned by libraries won't happen. Yes, less catalogers are needed in the age of shared cataloging and automation. But, they are still needed and necessary. Someone has to initially create the record that is then shared. And, if it is created at full level and correctly the first time, it saves all libraries time and effort in the long run.

If you had a magic wand, what would you change in the way resources in your sector are cataloged today or what would you change in the way the profession is structured?

Actually, I do have two magic wands in my office. They keep me amused but they don't seem to work on these big items! What I would change about the way the profession is structured is that I would change the education available for cataloging within library schools. Along with that, I would change the image of cataloging. Those of us who do cataloging tend to really love it. However, I learned cataloging and to love cataloging by doing, not in library school, mainly because the cataloging instructor there had such a negative attitude about teaching cataloging and just assumed none of us would be interested and taught it with that attitude. We need cataloging professors in library

schools who radiate enthusiasm for cataloging and give students a sampling of the fun of the detective work that goes into being a good cataloger. And, we need library schools to offer good solid cataloging courses as part of the fundamental curriculum, so that all MLS grads have a chance to understand and appreciate cataloging, even if they don't decide to pursue cataloging as their own calling.

What is the most seminal development underway in your sector of the profession, and how is it changing the way resources will be cataloged in the future?

I think FRBR (Functional Requirements for Bibliographic Records <http://www.ifla.org/VII/s13/frbr/frbr.htm>) is turning out to be one of the most influential developments in cataloging in a long time. FRBR is changing AACR2 in an evolutionary way right now. FRBR will change and is changing the way results will be organized and displayed in online catalogs. FRBR has created lots of excitement throughout the cataloging world, since it helps to collocate resources in a way that makes sense for patrons usage.

In five years, how do you predict a catalog record will be different from what we are used to today, and what new information will it provide?

I think catalog records of the future will provide access to cover art, book reviews, more complete summaries, tocs, author bios, etc. We're beginning to see this now. I don't think all this data has to be contained within the record itself, but links within the record can lead to this information. The question is, will library automation systems (integrated library systems) be able to manipulate and display the information that is available through the records? I have my doubts, since most of the systems now cannot mine the richness encoded within MARC presently.

Works and Resources Consulted

Art Libraries Society of North America Home Page. 5 Mar. 2004

<<http://www.arlisna.org/>>.

Baker, Thomas, and Makx Dekkers. "Identifying Metadata Elements with URIs." D-Lib

Magazine 9.7-8 (2003). 5 Mar. 2004 <

<http://www.dlib.org/dlib/july03/baker/07baker.html>>.

BIBCO. 2 Feb. 2004. Program for Cooperative Cataloging, Library of Congress. 5 Mar.

2004 <<http://www.loc.gov/catdir/pcc/bibco.html>>.

Cataloging. Library of Congress. 5 Mar. 2004 <<http://www.loc.gov/catdir/>>.

CONSER. 2 Mar. 2004. Program for Cooperative Cataloging, Library of Congress. 5

Mar. 2004 <<http://www.loc.gov/acq/conser/>>.

Gorman, Michael. "Cataloguing in an Electronic Age." Cataloging & Classification

Quarterly 36.3-4 (2003): 5-17.

Guenther, Rebecca, and Sally McCallum. Bulletin of the American Society for

Information Science and Technology 29.2 (2002-3): 12-15.

Hendricks, Arthur. "The Development of the NISO Committee AX's OpenURL

Standard." Information Technology and Libraries 22.3 (2003): 129-33.

International Federation of Library Associations. 5 Mar. 2004 <<http://www.ifla.org/>>.

Library Literature & Information Database. 2004. EBSCO Publishing. 1 Mar. 2004

<<http://www.lib.umd.edu> (click on databases and select alphabetically)>.

Lightle, Kimberly S., and Judith S. Ridgway. "Generation of XML Records across Multiple Metadata Standards." D-Lib Magazine 9.9 (2003). 5 Mar. 2004 <<http://www.dlib.org/dlib/september03/lightle/09lightle.html>>.

Music Library Association. 5 Mar. 2004 <<http://www.musiclibraryassoc.org/>>.

NACO. 12 Dec. 2003. Program for Cooperative Cataloging, Library of Congress. 5 Mar. 2004 <<http://www.loc.gov/catdir/pcc/naco.html>>.

OCLC Research. 5 Mar. 2004. <<http://www.oclc.org/research/default.htm>>.

Program for Cooperative Cataloging. 18 Dec. 2003. Library of Congress. 5 Mar. 2004 <<http://www.loc.gov/catdir/pcc/>>.

SACO. 17 Dec. 2003. Program for Cooperative Cataloging, Library of Congress. 5 Mar. 2004 <<http://www.loc.gov/catdir/pcc/saco.html>>.

Tennant, Roy. "A Bibliographic Metadata Infrastructure for the 21st Century." Draft ms, Mar. 2004.

Tennant, Roy. "Building a New Bibliographic Infrastructure." Library Journal 129.1 (2004). 5 Mar. 2004 <<http://www.libraryjournal.com/index.asp?layout=articleArchive&articleid=CA371079>>.

Van de Sompel, and , Jeffrey A. Young, and Thomas B. Hickey. "Using the OAI-PMH...Differently." D-Lib Magazine 9.7-8 (2003). 5 Mar. 2004 <<http://www.dlib.org/dlib/july03/young/07young.html>>.

Visual Resources Association. 5 Mar. 2004 <<http://www.vraweb.org>>.

