

ELECTRONIC RESOURCES 2002-2004

“What are we going to do about identifying and making accessible the valuable records of humanity that are only available in electronic form? How are we going to deal with the mutability and evanescence of those records? How are we going to preserve those resources and transmit them to posterity? We will only answer these questions if we employ wisdom and insight, are cognizant of the lessons of history, and work with the interests of all our users, present and future, in mind.” (Gorman 2003)

Introduction

The use of electronic resources in libraries has been growing at a steady rate for decades, but during the period covered in this essay, 2002-2004, the significance of electronic resources in libraries greatly expanded. The promise of the World Wide Web, first made available to the public in 1994, is beginning to be realized. Publishers are developing mature web-based content that libraries simply cannot do without. While the most prominent type of electronic resource discussed in the literature is e-journals, the literature is expanding both in breadth and in depth. A review of the literature reveals articles that discuss the cataloging of electronic resources in an abstract manner as well as articles that focus narrowly on particular practices at individual libraries. Research on direct access resources has virtually vanished, replaced by discussions of remote access electronic resources. This essay focuses on the cataloging of electronic resources in the tradition of the Anglo-American Cataloging Rules (AACR) and the use of the Machine Readable Cataloging (MARC) standard. Since there is a separate essay on metadata, an effort was made to avoid the topic, but in the contemporary literature these concepts increasingly intermingle. When metadata is discussed, it is in the context of AACR, MARC, and the traditions of cataloging in libraries.

Changes to cataloging rules, standards, and guidelines

Important changes to major cataloging rules, guidelines, and standards were introduced during the period covered by this essay. It is important to note these changes because much of the literature during this time was written in the context of, and in response to, these changes. Cataloging is a rule-based practice, so when the rules change, the impact on the profession is significant and tangible. Most importantly, the 2002 revision of the Anglo- American Cataloging Rules, 2nd Edition (AACR2) was published in the fall of 2002 (Curran 2003). Significant changes were made to chapters 9 (electronic resources), 12 (continuing resources), and 24 (headings for corporate bodies), all of which had impacts in the area of cataloging electronic resources (Curran 2002; Myer 2003). Chapter 12, which formerly covered serials, was relabeled “Continuing resources” and a major new mode of issuance, the integrating resource, was introduced (Parks and Shadle 2002; Curran 2003; Hawkins 2003). The rules for handling serial title changes were redesignated “major and minor changes” and updated to account for situations that typically occur with electronic resources (Parks and Shadle 2002).

Following the changes to AACR2, the Program for Cooperative Cataloging (PCC) updated its affected cataloging guides. The CONSER Cataloging Manual was updated in the fall of 2002

(Curran 2003). Updates were made to modules 16 (changes), 30 (direct access resources), and 31 (remote access resources). The CONSER Editing Guide was updated in early 2003. BIBCO published a guide titled "Integrating Resources: A Cataloging Manual" in August 2003.

Other major library agencies also published new guidelines affecting electronic resources. The Library of Congress published updated LCRIs in July and August of 2002 (Hawkins 2003). The Association of Library Collections and Technical Services (ALCTS) published "Differences Between/Changes Within," guidelines that address major and minor changes, in 2004.

Coordinating e-serial catalog access with web lists

The topic that generated the greatest amount of literature during the period was the effectiveness of cataloging electronic serials compared to alternate techniques, especially web lists. Briscoe, Selden, and Nyberg (2003) point out that while there are many justifications for providing journal title access through the catalog, libraries have other options now, including web lists of journal titles and federated search engines. Petrick (2004) sums up the situation well, saying "There seems to be no consensus as to whether records for remotely-accessible electronic resources should be in the library's online public access catalog (OPAC), if they should be in a separate database available from the library's home page, or if libraries should make other arrangements for making them available." Despite these new options, Cole (2003), Jones (2003), McCracken (2003), and Gatti and Miller (2004) strongly argue that e-serials should be cataloged. They all point out that not doing so would severely hinder patrons' ability to locate publications.

Because of the sheer numbers of electronic serials available, libraries are struggling to develop cataloging practices and policies to handle the workload (Murphy 2002, 2003). Aggregator databases in particular have greatly increased the number of journal titles available to libraries, but the dynamic and volatile nature of their content creates difficult obstacles for cataloging (Bland, Carstens, and Stoffan 2002; French 2002; Jones 2003). Many libraries are turning to automation to make the cataloging workflow more efficient; they have a dizzying array of options at their disposal. Four articles discuss techniques in which web lists are generated from the e-resource catalog records (Withers, Casson, and Shrimplin 2002; Parks and Shadle 2002; Kennedy 2004; Paul and Romaniuk 2004). Two articles describe techniques in which the opposite occurs: entries in a web list are used as a source of data to generate catalog records (Bland, Carstens, and Stoffan 2002; Sennema 2004). Two articles describe methods in which the library catalogs e-serials and maintains a web list while sharing data between the two (Hennig 2002; Johnson and Manoff 2003). Furthermore, vendors have begun supplying batches of catalog records in conjunction with A-Z list services (Bland, Carstens, and Stoffan 2002; Parks and Shadle 2002; French 2002; MacIntyre 2002). These services can help the library automate the maintenance of such records, but there are problems with quality control (McCracken 2003).

Single versus separate records for e-serials

The ease with which electronic information can duplicate other physical formats has led to a "multiple versions" problem (Kaplan 2004). Many electronic resources are manifestations of print works, whether facsimiles, reproductions, or simultaneously produced versions. Because of this, libraries must make cataloging decisions for electronic resources which are simply one of

many manifestations present in the collection. This problem has mostly been discussed in the context of serials (Bland, Carstens, and Stoffan 2002; Martin and Hoffman 2002; Murphy 2002; Giles 2003). Many libraries own electronic journals which are manifestations of resources they already own in print. In these situations, the library has to choose whether to add information about the electronic version on the print record (single record) or to create a separate record.

Furthermore, some electronic journals appear in multiple electronic manifestations. Because it is impractical for libraries to catalog each electronic manifestation separately, CONSER developed an “aggregator neutral” cataloging record (Curran 2003). Such records provide several benefits, including: reduction of the amount of time required to catalog serials; a more patron friendly display of records; and a harmonization of ISSN and CONSER practice. Their drawback is that since the aggregator neutral record seeks to cover all manifestations of a work, lots of provider-specific information is missing (Shadle 2004).

When analyzing the options for local cataloging policy, the consensus is that single records are preferred by patrons and reference librarians, but separate records are easier to update through automated means and are more accurate according to cataloging guidelines (Giles 2003; Hawkins 2003). While most libraries use either single records or aggregator neutral records, there are variations on these practices. SUNY Albany decided to delete its web list and catalog all print and electronic versions on one record. They are also supplementing access with SFX, a context-sensitive linking mechanism which can provide coverage and embargo information (Gatti and Miller 2004). Morris and Thomas (2002) argue that each electronic manifestation should be cataloged on a separate record. Dunham (2002) explores the possibility of improved OPAC displays to help alleviate the multiple version problem. Kaplan (2004) goes further by demonstrating a method that allows the OPAC to store records for individual manifestations for technical services staff, but merges the records on the fly so that patrons only see one record per title. This method has been implemented by the California Digital Library and New York’s Office of Library Information Services.

Integrating resources and integrated entry cataloging

Integrating resources are those resources for which changes are added to the existing resource without remaining discrete. Leister and Wakimoto (2004) provide a good introduction to integrating resources and the history behind the development of this new type of issuance. Two types of electronic integrating resources were defined in the 2002 revision of AACR2, namely updating websites and updating databases (Hawkins 2003). Since integrating resources do not maintain former bibliographic characteristics, a new entry convention called “integrating entry” was developed to manage title changes. In this type of cataloging, former bibliographic information is recorded on the existing catalog record, much like latest entry cataloging (Myer 2003). The MARC standard was changed to accommodate integrating resources, although implementation was delayed by major vendors and still has not been fully implemented (Caudwell 2004).

Cataloging non-serial electronic resources

Although the majority of the literature on electronic resources cataloging covers electronic serials, there is a significant body of literature on non-serial electronic resources. Bothman (2004) provides an overview of cataloging electronic books and contrasts the process with e-serials cataloging. Copeland (2002) discusses the difficulties of cataloging electronic books, especially rare editions. A manifestation of an electronic book may represent a new edition, a reproduction of a print edition, or a true facsimile of a print edition. Uniform titles can be used to identify and relate these various editions. Murphy (2003) discusses the problems related to cataloging digital representations of art, especially with providing subject access. Benedetti, Wu, and Hayes (2004) describe the procedures used at a medium-sized university library to catalog digital representations of art.

Cataloging workflow issues

The physical format and mode of access of remote electronic resources present new challenges for managing cataloging workflow. Hawkins and Shadle (2004) point out that many of the traditional functions, such as check-in, are radically different or nonexistent. Consequently, there is a growing body of literature on staffing, training, and workflow issues. Most authors address the issue in the context of a specific library (Boydston and Leysen 2002; Jones 2002). French (2002) discusses the dynamic nature of electronic resources, and the challenges of ongoing record maintenance. Because of these new methods, staff training is a significant issue. Hawkins (2003) discusses how the Serials Cooperative Cataloging Training Program (SCCTP) is working to develop training for the recent cataloging rule changes. Eden (2003) discusses examples of how digital initiatives are affecting the organization of cataloging departments. Park (2002) surveys library schools and determines that less than two-thirds of cataloging courses cover electronic resources. Hsieh-Yee (2004) evaluates the LIS landscape and determines that “more coverage of non-print resources, digital resources, and metadata related topics is needed.”

Martin and Hoffman (2002) survey libraries to determine cataloging practices for electronic resources. They discovered that most institutions favor a single-record approach over a multiple record approach, that the type of OPAC influences the rate at which electronic resources are cataloged, and that a lack of staff was the dominant obstacle to cataloging electronic resources. Because of a lack of national standards for cataloging aggregated databases, individual institutions must develop and rely on local cataloging policies. They suggest that machine-derived records acquired from vendors may be a possible solution to cataloging backlogs.

Electronic resource cataloging considered in the context of metadata

More and more, the traditional cataloging of electronic resources is seen as a subset of a broader (and growing) metadata practice. El-Sherbini and Klim (2004) argue that metadata includes “any kind of standardized descriptive information about resources” including library catalogs, implying that traditional cataloging is a subset of metadata. Gorman (2003) predicts that “metadata, as presently conceived, will evolve toward standardization ... and will be indistinguishable from real cataloging...” In a later article, he says “we should invest metadata schemes with the attributes of traditional bibliographic records” (Gorman 2004). Besides considering cataloging in and of itself, Gorman argues that cataloging electronic resources is

closely related to identifying the electronic resources that are worth cataloging and preserving those resources, two problems which have not been adequately solved.

Some authors have shown that bibliographic data can be exchanged between standards, especially between MARC and Dublin Core. Todd (2003) gives examples of using MARC/AACR2 as well as other metadata standards to catalog electronic resources at the National Library of New Zealand. He notes that crosswalks between standards are not exact. Surratt and Hill (2004) demonstrate a crosswalk from Dublin Core to MARC using a method that partially automates cataloging. Campbell and Fast (2004) argue that in the future, libraries may move away from cataloging web resources in favor of selecting resources and extracting bibliographic information from the resources themselves in a “semantic web” model.

Although the future of cataloging is by no means clear, a common theme runs through the literature: the practice of cataloging must adapt to new technology. Some are more pessimistic than others. For example, Weiss (2003) predicts that “no matter how fast cataloging rules and standards for electronic resources change, the changes may not be regarded as fast or flexible enough to keep pace with the future development of the Internet.” But the majority of authors are optimistic about the future of the practice. Although librarians deeply identify cataloging with the AACR2 and MARC, El-Sherbini and Klim (2004) argue that cataloging is the practice of description by any standard. No matter how cataloging develops, the organization of information will remain a fundamental human activity. “Cataloging” in this sense will certainly continue to be practiced in the future, and as Hawkins and Shadle (2004) optimistically put it, it is “Better to be part of the future than part of the past.”

Areas for future research

1. *The presentation of bibliographic information for electronic resources.* Parks and Shadle (2002) note the lack of standard presentation of bibliographic information for electronic resources. A particular problem is the inability of catalogs to effectively relate the electronic version of a resource to versions in other formats as well as other bibliographically related resources. Dunham (2002) emphasizes that user focus groups need to be a part of future studies in order to create user interfaces that are easy to read and interpret. A potential solution lies in the use of implementing the Functional Requirements of Bibliographic Records (FRBR) model.
2. *Challenges in cataloging electronic resources due to their changing nature.* Parks and Shadle (2002) as well as Gatti and Miller (2004) emphasize the difficulties of URL maintenance. While detecting title changes remains a problem (Murphy 2002), Hawkins (2002) notes that the problems go beyond mere title changes. Some titles disappear altogether, leaving orphaned catalog records behind. Furthermore, the distinction between serials and integrating resources is a “false dichotomy.” Many resources display characters of both (Hawkins and Shadle 2004). A potential area of study is how libraries are adapting their workflows to address these problems. One area to consider is the use of catalog-external metadata and services to keep bibliographic information up to date.

3. *Usage studies of electronic resources involving quantitative and qualitative analysis of cataloging versus other approaches.* There is a lack of fundamental information on how patrons access electronic resources (Boydston and Leysen 2002). Considering both the growth of electronic resources and the expense of cataloging, Cole (2003) argues that more research needs to be performed on the costs versus benefits of cataloging. Many authors point out that alternate methods of providing access, such as web lists, federated search engines, and context-sensitive linking services, are being developed and libraries must consider these methods as alternatives or supplements to cataloging (Morris and Thomas 2002; Giles 2003; Hawkins 2003; Johnson and Manoff 2003; Jones 2003; Sennema 2004).
4. *Evaluating MARC against other standards for exchanging bibliographic information.* When considering the future of electronic resource cataloging, many authors question whether the MARC standard is still the best format for storing and transmitting bibliographic information. Gorman (2003) illustrates this point by recalling the original purpose of the MARC record: "The structure of MARC is that of the catalogue card, when computer systems call for a different approach." Weiss (2003) observes that "The rapid expansion of the Internet...led some to question the usefulness not only of the cataloging rules, but also of the complex and cumbersome MARC record as a means of providing access to Internet resources." In a highly detailed analysis of its current state, Yee (2004) notes that there are many identified problems with the MARC record in the electronic environment. A potential area for research is comparing MARC with competing technologies, such as Dublin Core, MODS, or ONIX and considering how these technologies could be implemented into mainstream library services.

Works cited

- Benedetti, Susannah, Annie Wu, and Sherman Hayes. 2004. Art in a medium-sized university library: acquisition, cataloging, and access issues: challenges and opportunities. *Library Resources & Technical Services* 48 (2):144-54.
- Bland, Robert N., Timothy V. Carstens, and Mark A. Stoffan. 2002. Automation of aggregator title access with MARC processing. *Serials Review* 28 (2):108-12.
- Bothmann, Robert. 2004. Cataloging electronic books. *Library Resources & Technical Services* 48 (1):12-19.
- Boydston, J. M. K., and J. M. Leysen. 2002. Internet resources cataloging in ARL libraries: Staffing and access issues. *The Serials Librarian* 41 (3-4):127-145.
- Briscoe, Georgia, Karen Selden, and Cheryl Rae Nyberg. 2003. The catalog vs. the home page? best practices in connecting to online resources. *Law Library Journal* 95 (2):151-74.
- Campbell, D. G., and K. V. Fast. 2004. Academic libraries and the semantic web: What the future may hold for research-supporting library catalogues. *Journal of Academic Librarianship* 30 (5):382-390.

- Caudwell, James. 2004. Fluxion-structures: records for remote access electronic resources. *Art Libraries Journal* 29 (4):5-20.
- Cole, Jim. 2003. Impacts of the abandonment of catalog records for electronic serials. *The Serials Librarian* 45 (1):27-33.
- Copeland, Ann. 2002. Works and digital resources in the catalog: electronic versions of "Book of Urizen," "The Kelmscott Chaucer" and "Robinson Crusoe." *Cataloging & Classification Quarterly* 33 (3/4):161-80.
- Curran, Mary. 2002. Step one in formalizing the rules in AACR2 for cataloguing e-serials: Chapter 9 and the Anglo-American Cataloguing Rules Amendments 2001 package. *The Serials Librarian* 43 (1):25-30.
- . 2003. Formalizing the rules for cataloguing e-serials: Anglo-American Cataloguing Rules, 2nd Ed. 2002 Revision and CONSER Cataloging Manual 2002. *The Serials Librarian* 45 (2):17-25.
- Dunham, Barbara. 2002. Different formats: linking serial titles for display through bibliographic relationships. Is it possible? *Library Collections Acquisitions & Technical Services* 26 (1):3-17.
- Eden, Brad. 2003. Report on the ALCTS Heads of Cataloging Departments Discussion Group. American Library Association Midwinter Conference, Philadelphia, January 2003. *Technical Services Quarterly* 21 (2):76-9.
- El-Sherbini, Magda, and George Klim. 2004. Metadata and cataloging practices. *The Electronic Library* 22 (3):238-48.
- French, Patricia Sheldahl. 2002. Taming the aggregators: providing access to journals in aggregator databases. *The Serials Librarian* 42 (3/4):157-63.
- Gatti, Timothy, and Heather S. Miller. 2004. Finding a better trail through the journals forest. *The Serials Librarian* 46 (1/2):83-98.
- Giles, Vera. 2003. Single or multiple records for print and electronic serials titles: when less is more (more or less). *The Serials Librarian* 45 (1):35-45.
- Gorman, Michael. 2003. Cataloguing in an electronic age. *Cataloging & Classification Quarterly* 36 (3/4):5-17.
- . 2004. Authority control in the context of bibliographic control in the electronic environment. *Cataloging & Classification Quarterly* 38 (3/4):11-22.
- Hawkins, Les. 2002. E-serial titles that disappear. *Serials Review* 28 (3):222-4.
- . 2003. An Interview with Jean Hiron, CONSER Coordinator. *Serials Review* 29 (3):233-6.

- . 2003. Program for Cooperative Cataloging tools related to the 2002 Revision of AACR2. *Serials Review* 29 (1):40-2.
- Hawkins, Les, and Steve Shadle. 2004. Reflections on wrapping paper: random thoughts on AACR2 and electronic serials. *Serials Review* 30 (1):51-5.
- Hennig, Nicole. 2002. Improving access to e-journals and databases at the MIT Libraries: Building a database-backed Web site called "Vera." *The Serials Librarian* 41 (3-4):227-254.
- Hsieh-Yee, Ingrid. 2004. Cataloging and metadata education in North American LIS programs. *Library Resources & Technical Services* 48 (1):59-68.
- Johnson, Kay, and Maribeth Manoff. 2003. Report of the death of the catalog is greatly exaggerated: The e-journal access journey at the University of Tennessee. *The Serials Librarian* 44 (3/4):285-92.
- Jones, Wayne. 2002. How to do it not badly. *The Serials Librarian* 43 (2):17-20.
- . 2003. A personal mini-history of e-serials cataloging. *The Serials Librarian* 43 (3):21-4.
- Kaplan, Michael. 2004. Serial aggregations, multiple versions, and the virtual union catalog: The California Digital Library catalog, SUNY, and Ex Libris experiences. *The Serials Librarian* 46 (1/2):69-81.
- Kennedy, Peter. 2004. Dynamic web pages and the library catalogue. *The Electronic Library* 22 (6):480-6.
- Leister, Susan, and Jina Choi Wakimoto. 2004. Report on the ALCTS Electronic Resources Discussion Group Meeting. American Library Association Midwinter Meeting, San Diego, January 2004. *Technical Services Quarterly* 22 (2):70-4.
- MacIntyre, Ross. 2002. NESLI MARC records: an experiment in creating MARC records for e-journals. *The Serials Librarian* 41 (3/4):183-92.
- Martin, Charity K., and Paul S. Hoffman. 2002. Do we catalog or not? How research libraries provide bibliographic access to electronic journals in aggregated databases. *The Serials Librarian* 43 (1):61-77.
- McCracken, Peter. 2003. Beyond title lists: incorporating e-journals into the OPAC. *The Serials Librarian* 45 (3):101-8.
- Morris, Wayne, and Lynda Thomas. 2002. Single or separate OPAC records for e-journals: the Glamorgan perspective. *The Serials Librarian* 41 (3/4):97-109.
- Murphy, Amy. 2002. Cataloging electronic journals: a practical guide. *College & Undergraduate Libraries* 9 (1):81-95.

———. 2003. Cataloging as cartography: charting a course through the e-journal wilderness. *The Serials Librarian* 45 (3):109-14.

Murphy, James L. 2003. Link it or lump it: basic access strategies for digital art representation. *Journal of Library Administration* 39 (2/3):139-60.

Myer, Shelley A. 2003. AACR2 revisions and electronic resources: chapters 9 and 12: report on the Electronic Resources Discussion Group. *Serials Review* 29 (1):60-2.

Park, Taemin Kim. 2002. The integration of electronic resources into cataloging instruction in the LIS curriculum. *The Serials Librarian* 41 (3/4):57-72.

Parks, Bonnie and Steve Shadle. 2002. An interview with Steve Shadle. *Serials Review* 28 (4):321-6.

Paul, Kathryn, and Elena Romaniuk. 2004. Using the library's OPAC to dynamically generate webpages for e-journals. *The Serials Librarian* 46 (3/4):301-8.

Petrick, Joseph. 2004. The electronic library: responses from the State University of New York (SUNY). *OCLC Systems & Services* 20 (4):174-82.

Sennema, Greg. 2004. Our e-journal journey: where to next? *The Serials Librarian* 47 (3):35-43.

Shadle, Steve. 2004. The aggregator-neutral record: putting procedures into practice. *The Serials Librarian* 47 (1/2):139-52.

Surratt, Brian E., and Dustin Hill. 2004. ETD2MARC: A semiautomated workflow for cataloging electronic theses and dissertations. *Library Collections, Acquisitions, and Technical Services* 28 (2):205-23.

Todd, Chris. 2003. Metadata mayhem: cataloguing electronic resources in the National Library of New Zealand. *The Electronic Library* 21 (3):214-22.

Weiss, Amy K. 2003. Proliferating guidelines: a history and analysis of the cataloging of electronic resources. *Library Resources & Technical Services* 47 (4):171-87.

Withers, Rob, Rob Casson, and Aaron Shrimplin. 2002. Creating Web-based listings of electronic journals without creating extra work. *Library Collections Acquisitions & Technical Services* 26 (2):107-112.

Yee, Martha M. 2004. New perspectives on the shared cataloging environment and a MARC 21 shopping list. *Library Resources & Technical Services* 48 (3):165-178.

Prepared by:
Brian Surratt
Cataloging/Metadata Librarian
Rice University
besurratt@rice.edu