

# Year of Cataloging Research

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## Editorial

### Peggy Johnson



Our final issue of volume 54 begins with the annual report from Mary Case, 2009–10 president of the Association for Library Collections and Technical Services (ALCTS). I encourage you to read this summary of ALCTS's many activities and accomplishments.

Following the ALA Annual Conference this past summer, two members' terms on the *Library Resources and Technical Services (LRTS)* Editorial Board ended, and two people joined the board. I want to thank Mary Casserly (State University of New York-Albany) and Stephen J. Bosch (University of Arizona Library) for their service as two-term board members and dedicated paper reviewers. New members are Lori Terrill (University of Wyoming Libraries) as intern and Lynn N. Wiley (University of Illinois at Urbana-Champaign) as Acquisitions Section representative.

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*Library Resources & Technical Services* is the official journal of ALCTS. According to *Journal Citation Reports*, *LRTS* has a five-year impact

factor of 0.613. Our goal is to publish both research papers and thoughtful explorations of operational issues that have value and implications for other libraries, along with books reviews and editorials. We have recently posted two documents to help potential authors: Tips for Turning a Presentation into a Paper ([www.ala.org/ala/mgrps/divs/alcts/resources/lrts/authtips.cfm](http://www.ala.org/ala/mgrps/divs/alcts/resources/lrts/authtips.cfm)) and Elements of a Research Report ([www.ala.org/ala/mgrps/divs/alcts/resources/lrts/authrpt.cfm](http://www.ala.org/ala/mgrps/divs/alcts/resources/lrts/authrpt.cfm)). Additional resources available on the *LRTS* website are instructions for authors ([www.ala.org/ala/mgrps/divs/alcts/resources/lrts/authinst.cfm](http://www.ala.org/ala/mgrps/divs/alcts/resources/lrts/authinst.cfm)), FAQ for authors ([www.ala.org/ala/mgrps/divs/alcts/resources/lrts/authfaq.cfm](http://www.ala.org/ala/mgrps/divs/alcts/resources/lrts/authfaq.cfm)), and a list of suggested readings ([\[mgrps/divs/alcts/resources/lrts/authres.cfm\]\(http://www.ala.org/ala/mgrps/divs/alcts/resources/lrts/authres.cfm\)\). Manuscripts are submitted using our online editorial management system \(\[www.editorialmanager.com/lrts\]\(http://www.editorialmanager.com/lrts\)\). I encourage you to consider \*LRTS\* as your publishing venue.](http://www.ala.org/ala/</a></p></div><div data-bbox=)

### Erratum

"Approval Plan Profile Assessment in Two Large ARL Libraries," by Robert Alen, Tina E. Chrzastowski, Lisa German, and Lynn Wlley in the April 2010 issue contains errors on page 71. The caption for table 4 should be "Top Ten Subjects by Number of Circulations, with Use and Cost/Use Data" and the heading of the second column should be "Circulations." The sentence beginning the first full paragraph on this page should be "Table 4 shows the top ten subject disciplines by number of titles circulated at Penn State and UIUC."



# Association for Library Collections and Technical Services Annual Report 2009–10

By Mary Case, 2009–10 ALCTS President

This year's primary goal of the Association for Library Collections and Technical Services (ALCTS) has been "Creating Our Future" as we have continued our focus on reshaping the organization to meet the needs of those working in the rapidly changing fields of technical services, collections, and preservation. At both the division and section levels, we have sought to decrease the barriers to performance and increase the opportunities for participation. Our effort is all the more urgent in the face of economic challenges that demand we provide products and services of significant value to attract and retain members. While this is an ongoing task, we have made significant strides in a number of areas this year.

## Reshaping Our Organization

Member input gathered over the last several years through surveys, focus groups, and discussions led the ALCTS executive committee to conclude we need to reshape our organization. Our members expressed the following concerns:

- ALCTS no longer reflects the diversity of job functions performed by those employed in collections and technical services.
- Members are frustrated by competing and overlapping programming.
- Processes are slow and not always clear in part because of redundancy in governance.

The executive committee, with input from the board, worked this year to construct alternative organizational scenarios that we have now shared with the entire membership for comment. In developing the scenarios, we were looking at options to achieve the following goals:

- Members must be able to find a community of colleagues doing the same work or with similar interests.
- The structure and processes must be transparent.
- The structure must be flexible enough to respond quickly to emerging trends.
- The organization must provide opportunities for service and leadership.

We look forward to reviewing the feedback from the member survey and from the animated discussions at the 2010 ALA Annual Conference and plan to present a refined plan for a member vote sometime next year.

## Bylaws Changes

In the meantime, the division undertook a process to revise its bylaws so future changes resulting from reorganization would not be slowed by outdated and ambiguous documentation. While the Organization and Bylaws Committee accomplished most of its work in 2008–9 under the leadership of Dale Swensen, the bylaws were put to a membership vote in fall 2009. The new bylaws passed with an overwhelmingly positive vote.

## Expanding Continuing Education

While working toward a reorganization of the division, the executive committee recognized a need and an opportunity to address continuing-education issues. In-person workshops were no longer drawing an audience unless attached to a conference, members were expressing concerns about travel support from their institutions, and the multilayered education committee structure of the division and sections slowed the move of new ideas and products to market. We decided that a change to the education committee structure could move forward before changing the entire organization and might serve as a model for streamlining other product-driven committees, such as the publication committees.

To this end, the ALCTS board approved the dissolution of the ALCTS Education Committee and the creation of a new Continuing Education (CE) Committee that began work in summer 2009. Chaired by Pamela Bluh, this committee has quickly coordinated a robust program of Web courses and webinars that complement programming at conferences. Web courses, offered by ALCTS for several years now, continue to be popular. These four-week modules cover acquisitions, electronic resource acquisitions, collection development and management, and new this year, preservation. Under development are courses in collections assessment, cataloging, and serials. With the energetic shepherding of CE members, sixteen webinars were offered this year, almost tripling the number presented last year. These webinars covered institutional repositories, cataloging of unusual formats, metadata, disaster planning and response, among other topics. The popular e-forums begun last year by then President Dina Giambi now have a coordinator, Kristin Martin, who is an ex-officio member of the CE Committee. Generally held monthly, these e-mail conversations continue to attract members and nonmembers, with more than one thousand participants on the e-forum list. We are grateful to the many members who participate in CE by developing the content for webinars and Web courses, who suggest topics, and who participate in and evaluate these events. We look forward to the CE Committee's assessment of its first-year lessons learned and, in particular, how the liaison relationships with the sections have worked.

## Section Restructuring Initiatives

The division has not been alone in its focus on reshaping its structure. Several sections have been working to simplify their structures during the last several years. The Preservation and Reformatting Section (PARS) completed its transition this year to a slimmed down committee structure. Several topic-based committees were reconstituted as interest groups. The Collection Management and Development Section (CMDS) has decided to revise its mission and change its name to the Collection Management Section (CMS), which took effect after the 2010 Annual Conference. It has also reduced its committees from eight to six and converted three committees to interest groups. The Continuing Resources Section (CRS) has been streamlining by combining its Education Committee with its Research and Publications Committee. The new Education, Research, and Publications Coordinating Committee, with a new mission, will take effect with the 2010–11 appointments. The Council of Regional Groups (CRG), ALCTS's connection to its affiliate members, has proposed changing its status from a section-like structure to a division-level committee with a new name, Affiliate Relations Committee. We believe that the good work of CRG will be more visible and integrated with such a change.

## National Preservation Week

ALCTS and its sections have undertaken many other initiatives during this year. One of the highlights was the first national Preservation Week successfully launched May 9–15. Initiated by PARS, Preservation Week is a collaborative effort involving the American Library Association (ALA), the Library of Congress, the Institute of Museum and Library Services, the American Institute for Conservation of Historic and Artistic Works, Society of American Archivists, and Heritage Preservation. Local libraries and other institutions were encouraged to use Preservation Week to offer events, workshops, and resources to highlight the need for preservation while sharing expertise to help individuals and communities preserve personal and shared collections. A webpage ([www.ala.org/preservationweek](http://www.ala.org/preservationweek)) was developed to provide resources, post local activities and events (about thirty-five nationwide), and share participant stories. The ALA designed a poster and bookmark with the theme of the week "Pass it On," which were available for purchase by the 2010 ALA Midwinter Meeting. ALCTS events during the week included the pilot online course (Fundamentals of Preservation) and two free public webinars (Archival 101 and Mold Prevention and Remediation), together attracting more than seven hundred participants. Key participants in Preservation Week included the New Jersey State Library, Regional Alliance for Preservation, Federal Library and Information Center

Committee, and National Digital Information Infrastructure and Preservation Program. Corporate sponsorship included Gaylord Bros., FamilyArchives.com, Archival Products, and the HF Group. A program (Pass it On: National Preservation Week) at the 2010 Annual Conference and a PARS working group will ensure that knowledge and participation in Preservation Week grows over the years. Congratulations to PARS and Preservation Week Task Force Chair Jeanne Drewes.

### New Members and Emerging Leaders

With the initiative of both seasoned and new members alike, a New Members Interest Group was started this year. The group had its first formal meeting at the Midwinter Meeting under the energetic leadership of Keisha Manning and worked with the Membership and Leadership Development Committees to design the ALCTS 101 event at Annual Conference. We hope this new group will help new members find each other and learn about ALCTS at the same time.

ALCTS sponsored a participant in the ALA Emerging Leaders program again this year. Shilpa Rele (metadata librarian and the University of Miami) and her cohort chose an ALCTS proposal as their project. The group worked to help the Leadership Development Committee place content for new ALCTS leaders on the Web, using Web 2.0 technologies where appropriate. The group has solicited several brief videos from current ALCTS leaders to provide advice to their successors.

### Year of Cataloging Research

During the fall, the ALCTS board approved a resolution to declare 2010 the Year of Cataloging Research. The resolution emanated from the ALCTS task force working on implementing recommendations from *On the Record*, the final report of the Task Force for the Future of Bibliographic Control commissioned by LC. ALA Council approved the recommendation at the Midwinter Meeting. A new website (<http://faculty.washington.edu/acarlyle/yocr/index.htm>) provides information and resources. The Cataloging and Classification Section (CCS) presented programming to encourage more research.

### Awards

Among the many individuals honored by ALCTS this year at its annual award ceremony were Olivia Madison, dean of the

library at Iowa State University, recipient of the Margaret Mann Citation; Michele Cloonan, dean and professor of the Graduate School of Library and Information Science at Simmons College, recipient of the Banks/Harris Preservation Award; Peggy Johnson, associate university librarian for Access Services at the University of Minnesota, recipient of the Ross Atkinson Lifetime Achievement Award; and Kelley McGrath, cataloging and metadata services librarian at Ball State University, recipient of the Esther J. Piercy Award.

### Programs

ALCTS and its sections continued their tradition of offering many outstanding programs during the Midwinter Meeting and the Annual Conference. Programs addressed e-books, electronic resource management systems, Resource Description and Access (RDA), the strategic future of print collections, Preservation Week, converging metadata standards, social tagging, collection development in tough times, and many more. The President's Program at the Annual Conference featured Dr. Francine Berman, vice president for research at Rensselaer Polytechnic Institute, who spoke to an enthusiastic audience on the new role for libraries in shaping twenty-first-century research.

### Publications

ALCTS published a number of new works this year. *A Guide to Video Acquisitions* by Mary Laskowski will be available later in 2010. Available online is the *ALCTS/PARS Metadata Standards and Guidelines Relevant to Digital Audio* and chapter 1 of the book *Institutional Repositories: The Promises of Yesterday, the Promises of Tomorrow*. This book, edited by Pamela Bluh and Cindy Hepfer, is an experiment for ALCTS, with chapters being made available for free online as they are ready. The first chapter was written by Greg Tanabaum. Once all chapters have been published, a print volume will be available for purchase. ALCTS is introducing a new online series of white papers focused on issues in the profession intended to stimulate thinking and debate.

The activities cited above are only a snapshot of the many achievements of the committees, sections, and interest groups that make up ALCTS. I am honored to have been given the opportunity to meet and work with so many wonderful, dedicated individuals both within ALCTS, in the other ALA divisions, and in ALA. Thank you for the opportunity. I look forward to continued progress on our important agenda under the leadership of next year's president, Cynthia Whitaker.

# When Preservation Moves Off Campus

## Trends and Effective Practices in ARL Libraries

By Cathleen Martyniak

*Preservation librarians face both practical and fundamental challenges when moving preservation operations from the main library to an off campus location. Practical issues include transporting materials and staff safely and securely between facilities, hiring and retaining student employees, and communicating effectively between geographically dispersed library units. Fundamental concerns include how to continue providing high-quality services and maintain productivity in the remote location. The author conducted a survey of Association of Research Libraries preservation librarians who are discussing a potential move, planning to move, or have moved previously and analyzed the responses. This paper reports on findings from the survey and effective practices identified both in the survey and during follow-up interviews.*

When informed by library administration that they will be moving from the main library to an off campus location, preservation librarians can face a number of difficult issues. How do they transport books and journals back and forth safely between the library and the off campus location? Will they lose all their student workers? How do they continue to provide high-quality services to their users if they are so far away? How do they continue to collaborate and communicate with other staff at the main library? When the decision was made by library administration in 2008 to move the University of Florida Preservation Department from the main campus library to a book storage facility approximately four miles away, the author began to gather data regarding these and other concerns associated with moving a preservation operation away from the main library. The author surveyed 123 Association of Research Libraries (ARL) preservation librarians. Ninety-four librarians responded, 19 of whom had moved or were planning to move to an off-site location. The goals of the research reported in this paper are to gather data on the frequency and circumstances of preservation units moving off campus and the consequences of establishing these facilities. The data cover four areas: collection maintenance, security, employee recruitment and retention, and advantages and challenges. An additional objective was to develop a set of effective practices obtained from one-on-one interviews with preservation librarians who are located geographically distant from the main campus library. The author hopes that these proven solutions can alleviate some of the anxiety these moves cause for preservation librarians as well as support planning efforts for those units moving off-site in the future.

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Submitted December 13, 2009; returned to author December 29, 2009 with request to revise and resubmit; revised and resubmitted February 27, 2010, reviewed and accepted for publication.

## Literature Review

The author found no articles that directly addressed the relocation of a preservation unit away from the main campus library. Numerous articles have dealt with relocating other types of library units, either within their original building or geographically distant from the main library, both temporarily and permanently. Dickinson, Martin, and Mering discussed a temporary 1999 move of the University of Nebraska–Lincoln (UNL) Cataloging Department to a warehouse on the edge of town while the main Love Library was being renovated.<sup>1</sup> The authors, professional catalogers at UNL, examined the phenomenon of being located away from an institution's main collection. Their aim was to discover, by means of a questionnaire, the effect of such a move on the workflow of professional catalogers. They received fifteen responses from six institutions, three of which were ARL libraries. Required population parameters for respondents were catalogers who held masters degrees in library science and professional positions at university libraries with at least one branch. All of the cataloging operations moved between 1998 and 2001. Survey questions focused on details of the move, communication issues, workflow, and respondent job duties. The authors made numerous recommendations that they felt could positively affect the outcome of relocation, such as a reliable and carefully planned delivery system, early move planning, and a supportive administration.<sup>2</sup> Williams and colleagues outlined the challenges, changes, and opportunities they faced during a 2000 relocation of the Resource Services Department (RSD) at the University of Florida.<sup>3</sup> While the relocation of the RSD, which consisted of contributed cataloging, acquisitions, and central bibliographic services units, was within one building and not off campus, the staff of the department faced many of the same issues confronting those making a more significant geographical change. The authors discussed space planning, workflow interruptions, and the deeper issues of personal loss and other emotions engendered by such a move.

Olsgaard reported on a presentation by three librarians given at the 1999 Charleston Conference, in which they described moving their units and how they handled the challenges.<sup>4</sup> The first move discussed was within the same building at the University of Florida, the second was a temporary move out of the library during a major renovation at the Boston Athenaeum, and the third was a permanent relocation to an off-site facility at the Florida State University Libraries. Speakers touched on topics such as examination of workflows for potential improvements, the need to maintain services for patrons during the move, and the importance of communication with administration and the staff in the unit being moved. Two speakers provided lists of important considerations. Atkins and Hain Teper, at the University of Illinois at Urbana–Champaign, conducted a 2005 survey of ARL libraries assessing their current practices for planning

and managing moves of collections, staff, and services.<sup>5</sup> They gathered data on many topics including the frequency of large collection moves, how the collections are transported, and what kinds of requesting, delivery, and access mechanisms are established for the collections. While the focus of the article was on temporary moves of collections and the discussion regarding staff was minimal, preservation librarians would benefit from reading the Atkins and Hain Teper's article to provide context and perspective when faced with their own move.

The author identified one article that addressed designing a conservation treatment facility. Rowley and Hanthorn from Iowa State University focused on conservation functions, planning issues, and the planning process.<sup>6</sup> The authors did not address the challenges of a remote location, but their advice is pertinent to those planning a new conservation facility, regardless of where it is located.

While the topic of this paper is moving a preservation unit away from the main campus library, other related topics in the literature are relevant. Addressing staffing issues is central to the success of any library operation or organizational change. Williams and colleagues noted that relocating an entire department can be very difficult on employees.<sup>7</sup> Kelly provided insight into managing the important aspects of coordinating a team of geographically remote information specialists and suggested practical tips for those who may be part of a geographically dispersed team.<sup>8</sup> She discussed the importance of effective communication, including weekly e-mail updates, conference calls when appropriate, and face-to-face contact when feasible. She noted that the need for professional development opportunities continues regardless of where an employee is located. Ensuring access to training and workshops for off-site staff is important. She also addressed making appropriate use of new technologies and suggested video conferencing and team intranets. Siebrat, Hoegland, and Ernst acknowledged that even small levels of dispersion can affect team performance substantially.<sup>9</sup> They discussed the difficulties of collaboration across distance including communication problems, reduced trust, and an increased difficulty finding common ground. Using a survey, they compared the performance of dispersed versus collocated teams. While the teams that they surveyed were quite dispersed geographically, their findings are applicable to teams that are split between the main campus and an off-site facility, separated by ten miles or less. They discussed key lessons that can maximize performance, including "Don't underestimate the significance of small distances," "Emphasize teamwork skills," and "Promote self leadership."<sup>10</sup>

## Research Method

The author drafted the survey questions and vetted them

through the University of Florida Institutional Review Board during the spring of 2009. The Institutional Review Board determined that the protocol was exempt from review. The author selected an online survey tool, Survey Monkey, to gather the initial numerical data. The survey consisted of thirty-eight questions with 89 percent of the respondents needing to answer only twelve or fourteen questions because the survey used several skip logic questions. A typical skip logic question is “If you answered yes to question #5, please skip to question #22.” Survey questions were grouped into five categories: background, collection maintenance, security, employee recruitment and retention, and advantages and challenges. The author attempted to define the terminology to be used within the survey clearly and carefully. A preservation program, as described in the introduction to the 2006–7 ARL preservation statistics survey findings, is a distinct administrative unit, which is separately staffed, funded, and administered.<sup>11</sup> Those libraries that indicated they did not have a preservation program were deemed to have distributed preservation units. The phrase “main preservation unit” (MPU) was defined and used within the survey to denote the unit within the library responsible for the majority of preservation activities. The online survey instrument was pretested on a small group of preservation librarians to ensure that it worked correctly. The survey is presented in appendix A.

The author’s decision to focus the survey on ARL libraries was purposeful. While not all preservation units within the United States and Canada are located within an ARL member library, many ARL libraries do have preservation units. Most of these preservation units document their preservation activities each year via the ARL annual preservation statistics survey. This group of libraries with preservation expertise was readily identifiable and similar to the author’s home institution (also an ARL member), making comparison with the local operation easier. The author asked for and obtained contact information from the ARL for the 123 libraries who reported 2007–8 ARL preservation statistics. The author e-mailed each 2007–8 ARL preservation survey respondent in June 2009 to determine if that person was the correct person to fill out the preservation move survey. This e-mail message prenotified the individual that a survey was coming. Another benefit of this prenotification step, advocated by Dillman, was to confirm that the author had the correct person at the library to answer the survey.<sup>12</sup> In many cases, the name and address of the person to contact was changed to the local preservation administrator from an administrative assistant.

Three weeks later, the e-mail message containing the link to the survey was sent with a request to complete it. Initial response to the survey was 55 percent. The author was able to increase the response rate to 77 percent (97 out of 123) with a series of subsequent e-mail messages

and phone calls. The author completed hour-long follow-up phone calls with the librarians who indicated that their preservation unit already had moved off campus. These interviews allowed the author to clarify any questions from the survey as well as get more detailed information about the situation at that particular library. No follow-up interviews were conducted with libraries that had potential or planned moves. All individual survey data were held confidential. Finally, several respondents indicated that they did not want their library identified in the paper. Thus a set of alphabetic codes was devised to help identify and track relevant data for each library without naming any library specifically.

A significant amount of data was gathered during the course of the survey and the follow-up interviews. Only a portion of this information was required to discuss the circumstances, frequency, and consequences of preservation moves off campus and gather the list of effective practices developed by preservation librarians who are located geographically distant from the main campus library. The remainder of the collected data will not be analyzed in this paper.

## Findings and Analysis

Of the 123 individuals who received the survey, 97 started it during the four weeks that the survey was open. Of the 97 initial respondents who described the type of preservation department they had, 66 percent had a standalone preservation program while 33 percent had a distributed structure for carrying out preservation activities. Of those same respondents, 89 were from the United States and 8 were from Canada. No units in Canada had moved, although 1 Canadian library was planning a move. Three of the surveys were not completed successfully and thus those responses were not analyzed, leaving 94 valid responses. Of these, 75 had not moved, had no plans to move, and were not discussing the possibility of a move, resulting in a study group of 19 respondents.

Of the 19 libraries in the study group, 10 had moved their preservation departments off campus, in whole or in part, 4 had definite plans to move off campus, and 5 were discussing such a move. Information gathered from the 9 respondents who indicated that they were in discussions regarding a potential move off campus or had definite plans to move off campus will be examined first. The 10 respondents who indicated that they had already completed their moves will be discussed in the following section. With only 19 out of 94 respondents indicating that they did, will, or may move their preservation department off campus, the response group may be too small to report statistically valid results. The author believes, however, that the data gathered are “intentionally valid” because the survey and follow-up interviews adequately assess what the research intended to study.

**Survey Findings and Analysis of Potential, Planned, and Completed Moves**

Table 1 summarizes the 19 responses to survey questions regarding frequency and circumstances of potential, planned, and completed moves. Frequency relates to the timing of the potential, planned, or completed moves, while circumstances pertain to the reasons behind the moves. Respondents were allowed to select as many responses as appropriate for the circumstances question. One of the respondents who reported a potential move within two years mentioned that their library is conducting a preservation needs assessment to develop a stand-alone preservation department that will be consolidated from a currently distributed operation, with the possibility that this new unit would be located in an existing book storage facility. The other respondent who reported a potential move within two years reported that his preservation operation is currently in two locations: conservation work is located in an off campus book storage facility and preservation work is in the main campus library. His goal is to combine both operations at the storage facility.

One respondent planning a move within two years will be shifting a portion of her operations to a purpose-built facility immediately adjacent to the current library. Conservation and digitization will move to the new facility, while binding and shelf preparations will stay in the main library. The other respondent in this category will be splitting the preservation operations between three distinct and widely distributed physical locations. One respondent projecting a move more than two years from now reported that her unit will become part of a university-wide facility combining all preservation and conservation operations from the libraries and the museums on campus in approximately ten years. The second respondent planning a move more than

two years from now will be relocating the entire preservation operation to an off-site book storage facility approximately four miles from the main campus library in 2014.

Four preservation librarians indicated that they are definitely planning a move off campus, 2 in the next two years and 2 at least two years from now. Of the 5 respondents who indicated they are discussing a move, 2 are discussing this move within the next two years and 3 are considering a move two or more years from now. Nine of the 94 total respondents are in discussion of or actively planning for a preservation unit move off campus. The frequency of the completed moves also is noted. Ten moves were reported between 1998 and 2008, an average of 1 per year. While the author refrains from using the word “trend,” these data, along with the observations provided in the section on potential and planned moves off campus, suggest that movement of preservation departments away from the main library has been steady for a decade and could be increasing.

Examining the circumstances behind the 19 potential, planned, and completed preservation moves off campus can be informative because they outline comparable situations that other libraries could face in the future. Libraries will continue to address difficult space-allocation decisions in the coming decades. While respondents from only 3 of the 10 units that had completed a move off campus indicated that they moved to free campus space, 3 of the 4 units actively planning a move indicated this as one of the reasons they are doing so. During the follow-up interview, one preservation librarian said, “Campus space planning is changing and libraries are not entitled to central campus space. Each unit pays for their own space and libraries will be charged [for their space] by the square foot.”

All 5 libraries discussing a potential move of their preservation unit off campus are planning to move to a purpose-built facility. Five of the 9 potential or planned moves are

**Table 1.** Frequency and Circumstances of Potential, Planned, and Completed Moves Off Campus

	Frequency (When will/might they move?)		Circumstances (Why will/might they move?)					
	0 to 2 years	2 or more years from now	Free up main campus space	Consolidate one or more operations	Move preservation/ conservation opera- tions to a purpose- built facility	Move noncore operations off site	Loss of current facility	
Discussing a poten- tial move (N = 5)	2	3	1	4	5	1	1	
Planning a move (N = 4)	2	2	3	1	3	0	0	
Completed move (N = 10)	Frequency (When did they move?)			Circumstances (Why did they move?)*				
	0 to 2 ago	2 to 5 ago	5 or more ago	Free up main cam- pus space	Consolidate one or more operations	Move preservation/ conservation opera- tions to a purpose- built facility	Move noncore operations off site	Major renovations in cur- rent facility
	1	3	6	3	1	4	2	3

\* More than one reason possible

intended to consolidate 2 or more preservation operations. In some instances the move off campus was or will be caused by a renovation of the current facility. Unfortunately, the survey failed to clarify whether the 9 potential or planned moves were permanent or temporary. The temporary nature of 2 units' moves off campus became clear during the follow-up interviews.

Despite the small sample size, some observations can be made about the frequency and move circumstances data that were gathered. These observations could be helpful to readers who are currently discussing a move of their preservation units and even for those librarians who have not yet had to consider the possibility of moving their units off campus. When faced with a challenge, many libraries look to comparable libraries that have faced similar difficult situations, were successful, and can serve as models.

### Findings and Analysis of Data for Preservation Units Moved Off Campus

#### Background Information on the 10 Off Campus Preservation Units

Ten respondents had moved their preservation operations away from the main library prior to completing this survey. Because these respondents had completed their moves and had firsthand knowledge of the consequences of establishing off campus facilities for preservation functions, the author conducted follow-up interviews. Topics addressed in these interviews expanded on the survey categories of background, collection maintenance, security, employee recruitment and retention, and advantages and challenges. These interviews supported the additional objective of the research: to collect effective practices in the survey categories that would be

made available via this paper to provide guidance to other preservation units as they plan for a move off campus.

Each library had a specific circumstance surrounding its particular move. Of the 10 who reported a move off campus, two clarified that those moves had been temporary. Library E moved its standalone preservation unit off campus more than five years ago. However, due to budget cuts over time that diminished the number of staff assigned to preservation, the unit was disbanded, remaining were staff moved back to the main library, and all preservation functions were distributed across the libraries. The preservation unit at library D moved to several rooms in the administration building of the theatre department while the main library was renovated and moved back into the main library after the construction was complete. For the purposes of this research, these 2 participants reported how their preservation operations functioned while located off campus. Summary data for these 10 respondents' preservation units and libraries are presented in appendix B.

Nine of the MPUs that moved away from the main campus library are (or were, in the case of an MPU that moved on a temporary basis) collocated with a book storage facility. Libraries may locate a MPU close to a large collection of library materials for several reasons. The location may be in a new facility in which space for a MPU can be purpose-built, being close to a large legacy collection may be advantageous, or the off-site library facility may simply be cheaper in terms of cost per square foot.

The MPU was defined as the unit within the library responsible for the majority of preservation-related functions. This definition was provided in the survey. The 10 possible preservation functions listed in question 7 were determined by the author after examining numerous preservation unit websites. Table 2 indicates that many activities traditionally associated with MPUs are being handled outside that main

**Table 2.** Responsibility for Preservation Functions ( $N = 10$ )

Function	Main preservation unit	Other unit	Not applicable; function not performed
Commercial library binding	7	3	0
Book repair (care of the circulating collections)	9	1	0
Conservation (care for materials in special collections)	8	2	0
HVAC monitoring	5	5	0
Disaster preparedness, response, and recovery	8	1	1
Digital preservation	3	7	0
Physical processing (may include affixing barcodes, tattletape, call numbers, stamps)	4	6	0
Shelving	2	8	0
Education and training/advocacy	9	1	0
Scanning/digitization	2	8	0

**Table 3.** Physical Location of Preservation Functions (N = 10)

Function	Main library	Off site, not located with collections	Off site, located with collections	Mix of on campus and off site locations
Commercial library binding	3	0	5	2
Book repair (care of the circulating collections)	2	1	6	1
Conservation (care for materials in Special Collections)	0	2	5	3
HVAC monitoring	4	0	4	2
Disaster preparedness, response and recovery	3	0	5	2
Digital preservation	3	0	3	4
Physical processing (may include affixing barcodes, tattletape, call numbers, stamps)	4	0	5	1
Education and training/advocacy	2	1	4	3
Scanning/digitization	4	0	4	2

unit. These include monitoring humidity, ventilation, and air conditioning (HVAC), commercial library binding, physical processing, shelving, and scanning and digitization. Library units outside the MPU that handle traditional preservation functions include acquisitions, facilities, library information technology, imaging center, technical services, special collections, and the digital library. Whether these activities are being handled outside the MPU because of the move off campus or for other reasons is not clear.

Table 3 contains information regarding the physical location of many preservation-related operations. Included is information on preservation support for both circulating and special collections materials. Follow-up interview questions about location for the 10 preservation librarians whose units had moved off campus covered topics such as security, timeliness, efficiencies, care and handling while collections were being transported, and the implications of these on collection management and security.

#### Collection Maintenance

Another topic of concern for preservation staff faced with relocation is the effect the move would have on the types of preservation-related services (identified as “collection maintenance” in the survey) offered to the library system. Responses to survey question 20 on types of services provided to the library for various preservation functions after moving off campus are listed in table 4. The information provided by the 10 respondents suggests that the collection maintenance services provided when a preservation unit moves off campus remains unchanged for most functions.

#### Security and Transportation Considerations

Although an ever-increasing percentage of library materials

is now purchased or available in electronic format, the number of print volumes that must be managed physically each day by human hands is still significant in many ARL member libraries. New and previously acquired materials move between all areas of the library, from the mail room to acquisitions, from acquisitions to cataloging, from cataloging to preservation, from preservation to the stacks, and from the stacks or special collections directly to preservation. One of the main concerns faced by preservation departments that are geographically distant from the main campus is transferring materials safely between multiple locations. The movement of circulating and special collections materials is discussed below.

#### *Security and Transportation Considerations for Circulating Collections*

Transporting large quantities of circulating collection materials safely and efficiently can be a challenge particularly in the typical multibranch structure common in ARL organizations. Damaged materials sent to a conservation unit for repair, newly purchased materials heading to a preservation unit for treatment before being shelved, and loose periodical issues sent for commercial binding are just three of the categories of circulating collections that require intralibrary transportation.

Although reduced in recent years because of the move to electronic journals and the poor economy, the amount of personnel and fiscal resources dedicated to commercial library binding operations still can be considerable. Seven of the commercial library binding operations reported to the main preservation unit; the remaining 3 reported elsewhere. Of the 7 MPUs that are directly responsible for commercial binding operations, 5 reported that they process binding at their off-site facility, 2 reported placement of

**Table 4.** Extent to Which Levels of Services Have Changed ( $N = 10$ )

Function	Increased	Decreased	Stayed the same	No applicable; function not performed
Commercial library binding	0	1	9	0
Book repair (care of the circulating collections)	0	2	8	0
Conservation (care for materials in Special Collections)	2	0	7	1
HVAC monitoring	0	0	9	1
Disaster preparedness, response and recovery	2	1	7	0
Digital preservation	3	0	5	2
Physical processing (may include affixing barcodes, tattletape, call numbers, stamps)	0	1	9	0
Education and training/advocacy	2	2	6	0
Scanning/digitization	2	0	7	1

their commercial binding operation at the main library, and I split the work between the main building and the off-site facility. Several of the questions asked during the follow-up interviews focused on the implications of having the loose periodical issues at the main library while the staff performing the majority of the binding operations may be located at the off-site facility.

The commercial binding workflows at all 10 libraries that indicated their preservation department was located off-site were different but with enough similarities to begin to gather a set of effective practices for distributed binding operations. The 7 MPUs who exercised administrative authority over their commercial binding operations each had a slightly different workflow in place. In 5 libraries, nonpreservation staff in the main library pulled, packed, and transported periodical materials to the off-site facility for processing by preservation staff. Library I had one preservation staff member who was located at the main library and was responsible for both pulling and processing. Library D, a unit that moved off-site on a temporary basis, assigned preservation staff to work on campus two days per week pulling loose periodicals and damaged monographic materials and work the other three days at the off campus facility performing the remaining processing. Damaged circulating monographs needing treatment were generally boxed by access services staff at the main library and shipped to the off-site facility. In 4 instances, the acquisitions or cataloging departments or both were located in the off-site facility with the preservation unit, so that newly acquired or cataloged monographs needing conservation or binding could be retrieved by preservation staff using book trucks.

The amount of library materials that needs to be transported between the main library and the off-site facility before and after commercial binding can be considerable. The preservation officer from library H indicated that his

staff used plastic totes with nonlocking hinged lids to move loose periodicals from the main library to the commercial library binding operation and to move newly bound periodicals back to the main campus. The problem of storing hundreds of plastic shipping totes between shipments was a significant issue for his department. When asked if he could use book trucks, he reported that the loading docks at both the main library and the off-site facility were not covered and materials had gotten wet while being removed from the library delivery van during rain. He decided that while the totes were difficult to store when not in use, the safety of the materials was too important to compromise. He also noted that slow turnaround time of materials coming back from the bindery to be reshelved could be a public service issue and that using the totes was faster than using book trucks with either bungee cords or stretch plastic wrap.

While one library placed loose periodicals on book trucks, wrapped them in stretch wrap, and rolled the trucks into and out of a shuttle van under the control of the library, other libraries used plastic, hinged-lid totes, usually to protect the volumes from rain, snow, or sleet damage. In summary, binding workflows for the 7 movers who are organizationally responsible for their libraries' commercial binding operations tend to use nonpreservation staff to pull the loose issues and send them to the off-site facility for processing by preservation staff. Most used hinged-lid plastic totes.

#### *Security and Transportation Considerations for Special Collections Materials*

Data in table 3 indicate that in all cases conservation services for special collections materials are located away from the main library. Moving materials needing any level of preservation treatment between the main library and the off-site facility can be a major workflow and resource issue.

Unlike circulating materials, security for rare and valuable items is vital. In many instances, the amount of resources expended to transport special collections materials safely between the main library and the off-site facility is tremendous. Discussions during the follow-up interviews on moving these materials focused on two areas: (1) the kinds of housing used to pack the materials in order to protect them during the transfer process and (2) how the materials, once packed for transport, were moved.

Appropriate housing of special collections materials during transport depends on the materials themselves. Materials can range from regular book-like materials to huge rolled maps and blueprints. One library used a variety of totes, boxes, and padded bags depending on materials being transported. In another, the preservation officer traveled to the main campus and packed the material using bubble wrap and double-walled cardboard boxes, if asked by the collection manager. Another library did not provide special packing materials for transporting special collections materials and used regular cardboard boxes, while another wrapped rare and unique materials in bubble wrap and placed the items in locking plastic bins. The rest of the respondents stated that packaging for transport depended on the item and was decided on a case-by-case basis.

Once packaged, the special collections materials need to be transported from the main library to the off-site facility and returned after treatment. Based on the follow-up interviews, transportation options for rare materials generally fall into three categories: a shuttle service, a personal vehicle, or a mix of both. The preservation department at library B is located in the same facility as the regional depository. Staff transfer materials, both circulating and special, in a shuttle operated by the library twice a day. The van is driven either by preservation or depository staff or, rarely, students. At library G, normal special collections materials are moved by a shuttle operated by the university on a thirty-minute route connecting libraries. If collection managers are particularly concerned about an item they call the preservation librarian, and she meets the van personally to bring materials directly to preservation rather than having the item delivered to the off-site facility mailroom. However, if an item is especially valuable, the associate dean for Technical Services will hand-carry the item to the off-site facility in his personal car.

Library J has a long-standing special collections transfer policy. According to the policy, two people in a personal car transport rare materials between the main library and off-site facility. One must remain with the item at all times. Usually one is the relevant collection manager and the other is a conservation staff member. The preservation officer indicated that this can be a hardship for her staff and she has tried to revise the policy, but at this time the policy is still enforced. Materials going to the preservation department at library H are transported via a regularly scheduled shuttle operated

by the library or the personal car of the selector. Finally, at library F, where the off-site facility is only a ten minute walk from the main library, collection managers will drive or walk to deliver rare books or manuscripts needing treatment.

Library A had a unique system to transport rare materials between the main building and the off-site facility, which was more than thirty minutes away due to distance and traffic patterns. The preservation librarian instituted a "Rare Book Run" every Wednesday as requested by the selector. As long as enough notice was given by the selector, a two-driver shuttle associated with the parent organization would drive to campus, pick up the materials from the administration office, and bring them directly to the preservation department. If in any given week no selector requested a pickup, the run was not held. If it was raining and a pickup had been scheduled, the run was cancelled and automatically rescheduled for the next week. The system has been in place for several years and works very well.

During these interviews, the author learned that as the value, size, and complexity of the materials to be transferred increased, the special collections transfer policies became more focused and specific. Effective practice in this area seems to be a mix of shuttles operated by the library and personal cars, particularly depending on the rarity and value of the materials needing treatment.

Numerous other factors discussed during interviews affected the collection maintenance and security of those 10 preservation units that moved off-site. The desire to carefully track the physical location of materials, especially rare and valuable items, was strong when materials had to travel outside of the main library building. Of the 8 preservation librarians who responded to the survey questions regarding how special collections materials are moving between the main library and the off-site preservation facility, 7 indicated that an online method, usually the integrated library system, was used to track the movement of the materials. One used paper forms.

Also discussed was the amount of material damaged or lost during the transfer process. While no preservation librarian reported anything being damaged during transfer, several did concede that loss of collections was inevitable because of the large volume of the work moving into and out of their facilities. The interviewed librarians did not have data on lost or misplaced materials.

During the interviews, respondents made the following observations about collection maintenance and security:

- The library (or parent institution) insurance policy should cover the movement of materials in personal cars.
- Having oversized doors throughout the off campus facility is valuable for ease of moving materials on pallets.

- Ensuring that a large freeze dryer or a walk-in freezer available in the off campus facility to facilitate treatment of wet or moldy materials is desirable.
- Ready access to the best loading dock possible is essential.

#### Staff Recruitment and Retention

Another major concern of the author upon learning of her unit's planned move off-site was the effect it would have on her staff and student workforce. Many preservation departments depend heavily on student labor to support and back up their fulltime staff. Question 27, "Is hiring student labor harder, easier, or the same now that you are located off campus?" aimed to address this concern. Of the 9 respondents who answered the question, 5 indicated it was harder, 3 indicated that it was the same, and 1 reported that hiring students was easier because the pay rate for students was so much higher off campus. Many student employees work for short shifts, perhaps two hours or less, during their school day. If they now have to walk an extra fifteen minutes or take a twenty-minute round-trip shuttle ride to get to work, their availability could change dramatically. The assistant dean for Collections and Access at 1 library reported that her library has some trouble recruiting students because they needed to have a car to get to the depository where the preservation unit was located. Another preservation librarian noted that, while her unit is not located near the main library, it is near a residential neighborhood heavily populated by students. A significant percent of her student workers live very close to her facility. For the two years that library D was off campus, the preservation librarian employed a fairly nontraditional student worker structure. He wrote,

We started altering the schedules of our student worker contingent a couple of semesters before we departed campus. We went from fifteen students working short shifts in Shelf Preparation, Commercial Binding, and Conservation to just three or four working longer shifts. They specialized less in one of those three areas so that they could be shared. Minimum shifts were three hours, but some would work eight-hour shifts a day or two a week when schedules allowed.

The preservation librarian at another library wrote,

We are now one mile from the main campus, about a five minute drive, plus parking. There is a metro train, which the students can ride for free with a pass (but requires a five minute walk up at the main campus end to get to and from the train) as well as some shuttles. To just walk between the two

campuses takes about fifteen minutes. We don't get the "in between class" students much anymore (like we used to when on the main campus). Students tend to work fewer hours/week, although there are exceptions. Also, it is our observation that students try to schedule longer shifts because we are at a distance. Often this is not convenient for us. A number of students will not consider taking a job here at our end [of the campus] because of the distance.

Pay rate was also a key factor in student worker availability and retention. Question 28 asked if pay rates for students were the same or higher after the move off campus. Of the 9 respondents, 5 indicated that pay levels remained the same while 4 reported that they increased their student pay rate in response to difficulties filling student positions once off campus. Typical increases were between \$1 and \$2 per hour. Staff at 1 library decided to abandon the practice of hiring student workers entirely. Three preservation departments located on campuses that also had library schools had no trouble getting student workers, particularly for their conservation lab, because many library school students wanted to gain experience in the preservation department.

Transportation of staff and students also is a tremendously important issue. Staff and students at the 10 off-site preservation departments employed a variety of transportation methods, including personal cars, shuttles, walking, bikes, and public transportation. The main aspect of transportation discussed during the interviews was getting both staff and student employees back and forth between locations in a timely manner. Walking in pleasant weather was mentioned as a frequent choice for off-site facilities that were one mile or less from the main library. If the distance was not too great, bicycling was an option for both staff and students. When asked how preservation department staff members traveled to the main library during the work day, 7 reported that they used their personal cars. Many interviewees mentioned that while parking at the facility was relatively easy, parking a personal car on campus could be difficult. Several respondents indicated that when they parked their personal cars on campus, they used a special parking pass provided to them by library administration.

Having a shuttle bus, generally under the authority of the library, was frequently mentioned as a popular option for transporting both staff and student workers between the main library and the off-site facility. Having the shuttle operated by the library allows for the best possible use by library employees, particularly in the areas of frequency of the shuttle and the placement of the stops. Obviously, having the library operate the shuttle has significant implications, cost being the main issue. The preservation librarian at library H was on a committee that set up the shuttle system, and he noted that during off-peak times, carrying one library

staff member one way could cost as much as \$12. In many instances, the library shuttle transports people and collection materials at the same time. In 2 instances where the preservation unit and the book storage facility were in the same building, preservation staff could easily “catch a ride” back to the main library in the van used by depository staff to move materials back and forth.

In the area of employee recruitment and retention for off-site facilities, some effective practices are emerging. Those preservation departments moving off campus might consider raising their standard wage by at least \$1 to attract a sufficient labor pool. They also might think about the implications of having fewer workers who each work more hours per shift. If a discussion regarding the implications of operating a library shuttle service between the facility and the main library has not already begun, the preservation librarian might want to suggest that such a conversation be added to the planning agenda.

#### Advantages and Challenges

All 10 units that had moved off-site indicated significant advantages with this change. These advantages included a cleaner, larger space than previously occupied; a space better suited to preservation functions, particularly for conservation; a quieter space with fewer disruptions; closer working relationships either within preservation or with other occupants of the off-site facility; and easier access to parking. The preservation librarian at library H indicated that his staff loved being off campus. Several respondents noted that close physical proximity to other technical services departments, particularly cataloging and acquisitions, was beneficial. The amount of interactions between these 3 units can be significant, and being able to discuss a matter face-to-face can be very helpful. The location of cataloging and acquisitions units, compared to preservation, was discussed by 9 of the 10 respondents that had moved. Four preservation departments were not located in the same facility as cataloging and acquisitions unit, while 5 were collocated with these units in the same off campus building.

Another advantage all 8 preservation departments that moved off campus permanently enjoyed was proximity to their book storage facility. Several respondents noted that being in or near the book storage facility allowed for quick and easy review of a significant portion of their collection. The preservation librarian at library J noted, “We are on the spot for issues that develop in the remote storage stacks.” The librarian at library F felt that because much of library administration and staff is at the main campus, the opportunities for individual initiative are greater.

One of the last topics covered in the follow-up interviews was the challenge of communication with staff at the main library. Eight of the 9 respondents in this section noted lack

of visibility as an issue, more than half selected the “out of the loop” response, and one-third noted a drop in planned and impromptu tours of the department. Below are quotes that are pertinent to communication challenges:

- “It was easy to lose the connection to the main library.”
- “It was easy to be out of mind.”
- “Lost the politics of meeting people in the hallway.”
- “Takes much more effort and planning to attend meetings.”
- “Less opportunity for quick, in-the-hall consultations or instant solutions to small problems.”

While acknowledging the seriousness of these issues, respondents offered numerous possible solutions. Five of the respondents felt that increased use of face-to-face meetings could counteract some of the communication problems faced by off-site preservation departments. Other options included using more conference calls, making more of an effort to have main library staff visit the preservation unit, and using Web 2.0 technologies. One preservation librarian posted a quarterly report of activities within the unit and updated a department blog weekly. Several respondents indicated that they made a concerted effort to attend informal functions at the main library, such as forums and brown bag lunches, which they might not have attended if they worked in the main library. One librarian made a point to bring the entire preservation staff to two or three library events a year. He mentioned that while he traveled to the main library at least three times a week, some of his staff rarely did. He felt that walking in as a group of eight people left a memorable and positive impression on others at the events.

Several respondents indicated that schedules for standing meetings at the main library often were shifted to allow attendees from off-site locations to arrive or leave according to the shuttle schedule. One librarian observed that “travel time between lab and main campus creates much wasted time in the day.” She highly recommended that, if possible, the preservation unit keep a small foothold at the main library. She had a desk with a computer and a phone in the main library where she could sit and work while waiting for the shuttle. Others mentioned that time that otherwise might be wasted waiting for and riding on shuttles can be used wisely if one always carries some professional reading along or checks work e-mail on a Web-enabled phone.

Other challenges were noted by respondents during the follow-up calls. The senior associate dean for the libraries at one library mentioned that “the interactions between the preservation group and library selectors were difficult since selectors didn’t have the time to visit the facility.” This issue also was noted by another preservation librarian. This library solved the reluctance of selectors to travel off-site by establishing and obtaining selector approval of a brittle book

retention policy and set of selection criteria applied by preservation staff on all brittle books. Selectors were no longer asked for their retention decision for each individual title.

### Effective Practices

Through follow-up interviews with the 10 respondents who had either temporarily or permanently moved off campus, a set of effective practices for preservation departments located off campus emerged:

- Safely transporting circulating collection materials between the main library and the off-site preservation department using a system of plastic totes with hinged lids materialized as a consensus of effective practice.
- Commercial library binding operations can be located effectively in more than one location, with nonpreservation staff gathering loose issues on campus and sending them to the off-site location, where they are processed by preservation staff.
- Effective practice in the area of transporting special collections materials is a combination of shuttles operated by the libraries and personal cars, with significant selector oversight, depending on the rarity and value of the materials needing treatment. No effective practices emerged regarding the housing of special materials during transportation. Most housing decisions were made on a case-by-case basis.
- Paying student workers between \$1 and \$2 more per hour to work in the preservation department, cross-training, and changing shift lengths can help with hiring and retention.
- Regularly scheduled transportation options, usually a library-operated shuttle service, allows for timely travel between library facilities and helps maintain professional working relationships.
- Respondents strongly advocated “staying in the loop” by regularly attending campus meetings, going to informal functions such as brown bag lunches, and using Web 2.0 technologies.

### Areas for Further Study and Conclusions

The author advocates conducting this or a similar survey again in ten years to determine if ARL preservation departments are continuing to move off-site, if sufficient time has passed to establish best practices in the field of off campus preservation unit operations, and the effect, if any, that library space planning efforts have on preservation units. A related future study might survey ARL libraries about which operations, if any, had moved off campus, why they were moved, and what

the effects of the move were on services.

The two research objectives of this paper were to gather and present findings of a survey on the frequency, circumstances, and consequences of moving preservation departments away from the main campus library and offer effective practices that could inform others who are faced with operating a geographically distant preservation department. Data on the frequency of potential, planned, and completed moves suggest that the rate of preservation units moving off campus has held steady and is possibly increasing. Circumstances surrounding off campus moves centered around freeing up main campus space, consolidating operations, and moving to a purpose-built facility.

The survey data suggest that moving a preservation unit off campus has consequences, including issues of security, transportation, and employee recruitment and retention, which need to be carefully and thoughtfully addressed. While advantages and challenges to being away from the main library were noted, the 10 preservation departments who completed a permanent off-site move were able to work through the challenges using effective practices while keeping the quantity of work produced by the unit relatively stable. This is welcome news for those preservation librarians who are actively planning or in discussion of a potential move, as well as for those preservation librarians who may face an off campus move in the future.

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## Appendix A. Survey of Informed Consent

1. \*PLEASE READ THIS CONSENT DOCUMENT CAREFULLY BEFORE YOU DECIDE TO PARTICIPATE IN THIS STUDY.

### UNIVERSITY OF FLORIDA INFORMED CONSENT STATEMENT

When Preservation moves off campus survey

We invite you to participate in a study designed to gather data on the possibility and frequency of moves off campus of library preservation departments and the consequences of establishing these facilities on collection maintenance, security, employee recruitment and retention, and communication. The data will be analyzed to identify trends so that relevant findings may assist in departmental moves in the future. The outcomes of this research may be applicable to other technical services functions that are moved off campus such as cataloging and acquisitions.

This study consists of completing a short survey which will take approximately 15 minutes. Approximately 100 librarians associated with the ARL preservation functions will be surveyed.

The responses to the survey will be kept completely confidential to the extent provided by law. All responses are accessed solely by the researchers involved in this study. Your responses will only be used for purposes directly pertaining to this study. Your responses are not accessible by other participants in the study.

Your participation is completely voluntary; there is no penalty for non-participation. Further, you may withdraw from the study at any time without consequence. There is no compensation to you for participating in the study. There are no anticipated physical, psychological or economic risks or benefits associated with participation in this study.

If you have any questions or comments about this research, please contact: Principal Investigator: Cathy Martyniak, Library Preservation, Room 7, Smathers Library East, Phone: (352) 273-2830, email [cmook@ufl.edu](mailto:cmook@ufl.edu).

For questions or comments about the research participants' rights, please contact: UFIRB Office, P.O. Box 112250, University of Florida, Gainesville, FL 32611-2250, Phone (352) 392-0433

I have read the procedure described above, and I voluntarily agree to participate in this research study.

- Agree  
 Disagree

2. \*Name of person filling out the survey? \_\_\_\_\_
3. \*Title of person filling out the survey? \_\_\_\_\_
4. \*Name of College/University/Library that employs you? \_\_\_\_\_
5. May we contact you for follow-up information if necessary? If so please provide an email address or a telephone number here. \_\_\_\_\_
6. \*Please describe preservation activities at your library
- \_\_\_\_ Preservation activities at our library, such as commercial library binding or conservation/book repair, are coordinated by a distinct Preservation administrative unit that is separately staffed, funded and administered. This structure would traditionally be called a Preservation Department or a Preservation Unit.
- \_\_\_\_ There is no stand alone preservation unit at our library. Preservation activities at our library, such as commercial library binding or conservation/book repair, are coordinated by a unit other than a Preservation unit. For instance, the commercial library binding operation is managed by Acquisitions staff or book repair is managed by Special Collections staff.
- \_\_\_\_ Little to no preservation activities, such as commercial library binding or book repair, are undertaken at our library.

For the purposes of this survey, the phrase main preservation unit will be used to denote the unit within the library responsible for the majority of preservation activities.

7. \*Which unit is responsible for which preservation functions at your library?

	Main Preservation Unit	Other Unit	Not applicable; we do not perform that function at this library
Commercial Library Binding			
Book Repair (care of the circulating collections)			
Conservation (care for materials in Special Collections)			
HVAC monitoring			
Disaster preparedness, response and recovery			
Digital Preservation			
Physical Processing (may include affixing barcodes, tattletapes and call number, stamping)			
Shelving			
Education and Training/Advocacy			
Scanning/Digitization			
If "Other Unit" selected for any above, please describe here:			

8. Size of print collection for which the main preservation unit is responsible?  
 Up to 500,000 bound volumes  
 500,001 to 2 million bound volumes  
 2 million to 5 million bound volumes  
 Over 5 million bound volumes
9. Annual budget for all preservation functions, regardless of which unit within the library performs them?  
 Less than \$50,000  
 \$50,001 to \$150,000  
 \$150,001 to \$500,000  
 Over \$500,001
10. Number of FTE staff in the main preservation unit? (Please include both professional and support staff.)  
 1-2  
 3-4  
 5-6  
 7 or more
11. \*Physical location of main preservation unit?  
 Library on main campus  
 Off site facility with no book storage  
 Off site facility with significant amounts of book storage  
 Other (please describe) \_\_\_\_\_
12. \*The main preservation unit \_\_\_\_\_.  
 Moved in the past from main campus to an off campus location, in whole or in part  
 Has definite plans to move  
 Is in discussion of a move in the future  
 Has no plans to move
13. \*When will/might the main preservation unit move?  
 0 to 2 years  
 2 or more years

14. \*Why was/is this move planned? (Please select all that apply.)
- Financial savings
  - Free up main campus space
  - Consolidate more than one preservation/conservation operation
  - Move preservation/conservation services to better/purposefully designed facility
  - Part of movement of all non-core library functions to off site locations
  - Loss of current facility
  - Major renovations in current facility
  - Other (please describe) \_\_\_\_\_
15. \*Has the main preservation unit, in whole or in part, moved off campus?
- Yes
  - No
16. \*When did your main preservation unit move?
- 0 to 2 years ago
  - 2 to 5 years ago
  - More than 5 years ago
17. \*Did the entire main preservation unit move off campus?
- Yes
  - No
18. Current physical placement of preservation functions:

	Main Library	Off site with no books	Off site with books	Mix of on campus and off site	Not applicable, we do not perform that function at this library
Commercial Library Binding					
Book Repair (circulating collections)					
Conservation (Special Collections care)					
HVAC monitoring					
Disaster preparedness, response and recovery					
Digital Preservation					
Physical Processing (affixing barcodes, tattletapes and call number, stamping)					
Education and Training/Advocacy					
Scanning/Digitization					

19. What percent of the staff assigned to the main preservation unit moved off campus?
- 100%
  - 50 to 99%
  - 0% to 49%
20. The level of services provided to the library for the following preservation functions have \_\_\_\_\_ since the move. (Please limit your answers to changes caused by the move.)

	Increased	Decreased	Stayed the Same	Not Applicable
Commercial Library Binding				
Book Repair (circulating collections)				
Conservation (Special Collections care)				
HVAC monitoring				
Disaster preparedness, response and recovery				
Digital Preservation				
Physical Processing (affixing barcodes, tattletapes and call number, stamping)				
Education and Training/Advocacy				
Scanning/Digitization				

21. \*Do rare, unique and valuable library materials move back and forth between the main library and the preservation off site facility?  
 Yes  
 No
22. Briefly, how are the materials packaged for shipment?  
 \_\_\_\_\_
23. How are the materials transported? (Please select all that apply.)  
 Library vehicle  
 Personal vehicle  
 Other (please describe) \_\_\_\_\_
24. Who drives the vehicle used to transport rare materials? (Please select all that apply.)  
 Preservation staff member  
 Non-preservation staff member  
 Other (please describe) \_\_\_\_\_
25. How are the materials tracked?  
 Loaned to Preservation/Conservation in integrated library system  
 Loaned to Special collection/Rare Books in integrated library system  
 They are not tracked  
 Other (please describe) \_\_\_\_\_
26. \*Have any items in your collection been lost or sustained significant damage as a result of being transported?  
 No  
 Yes (please describe) \_\_\_\_\_
27. Since moving off campus, is hiring and retention of student workers:  
 Harder  
 Easier  
 The same  
 If you selected harder or easier above, can you please describe why here?  
 \_\_\_\_\_
28. In order to retain student workers, do you find you need to pay them:  
 The same as main campus  
 More (If more, please describe how much more.)
29. Regarding dependability (i.e., Attendance) of student workers: Are they \_\_\_\_\_ then when they worked on campus?  
 More dependable  
 Less dependable  
 About the same level of dependability
30. How does your staff get to the main preservation unit? (Please select all that apply.)  
 Drive their own car  
 Use public transportation  
 Use library shuttle  
 Walk  
 Other (please describe) \_\_\_\_\_
31. How do your student workers get to the main preservation unit? (Please select all that apply.)  
 Drive their own car  
 Use public transportation  
 Use library shuttle  
 Walk  
 Other (please describe) \_\_\_\_\_
32. Is there parking available at your off site location?  
 Yes  
 No

33. If main preservation unit staff need to go to main campus, how do they get there? (Please select all that apply.)
- Drive their own car
  - Use public transportation
  - Use library shuttle
  - Walk
  - Other (please describe) \_\_\_\_\_
34. Are there any advantages to having your main preservation unit located off campus?
- Yes
  - No
  - If yes, please describe. \_\_\_\_\_
35. Please list any challenges the main preservation unit has faced due to the move off campus. (Please select all that apply.)
- Lack of visibility
  - Felt forgotten
  - No longer in the loop
  - Lack of consultation
  - Not as many drop in or planned tours, so not as much publicity for the Department
  - Other (please describe) \_\_\_\_\_
36. If the main preservation unit was faced with communication issues after the move, how were they resolved? (Please select all that apply.)
- Communication was not an issue after the move
  - Increased use of conference calls
  - Inviting others to come to Preservation for more visits
  - Video conferencing
  - Increased frequency of face to face meetings on campus
  - Other (please describe) \_\_\_\_\_
37. Do you feel your role as an advocate for preservation has changed since you moved off campus?
- More successful as an advocate for preservation of the collections
  - Less successful as an advocate for preservation of the collections
  - About the same
38. Is there anything else about your off campus move experience that would be helpful for the surveyor to know?

Thank you for participating in our survey. I appreciate your time and energy.

Cathy Martyniak  
cathy@uflib.ufl.edu

## Appendix B. Summary Data for Main Preservation Units (MPU) that Moved Off Campus

Library code	A	B	C	D	E	F	G	H	I	J
Preservation department type	Stand alone	Stand alone	Distributed	Stand alone	Stand alone	Stand alone	Stand alone	Stand alone	Stand alone	Stand alone
Collection size (millions)*	1.5	2.9	3.6	3.9	4.1	4.2	5.6	6.3	8.7	9.1
Annual preservation budget (U.S. dollars)	50,001 to 150,000	150,001 to 500,000	50,001 to 150,000	\$150,001 to \$500,000	No response available	50,001 to 150,000	150,001 to 500,000	Over 500,001	Over 500,001	Over 500,001
Number of staff within preservation unit	1-2	3-4	3-4	5-6	1-2	3-4	5-6	7 or more	7 or more	7 or more
MPU collocated with book storage	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes, from 2006-09 No, from 2009 on	Yes	Yes
Year of move	2008	1998	1999	2004	2000	2001	2002	2006	2002	2005
Distance to main campus library (miles)	10	5	12	2	1	1	3	2	2	.75
Location of preservation functions	All off site	All off site	Split	All off site	All off site	All off site	All off site	All off site	Split	All off site
Notes	MPU was ½ mile from library from 1970s to 2008		Special collections conservation lab located in off-site facility with books	Temporary move due to renovation of main library	Preservation unit was disbanded and off-site location now used only for books	Major renovation of main library, preservation unit moved off site		Major renovation, 2006-09 with books, 2nd move, no books	Binding at main, two conservation locations	Some off site since 1982, all off site now

\* Martha Kryllidou and Les Bland., eds., *ARL Preservation Statistics 2006-2007* (Washington, D.C.: Association of Research Libraries, 2009), [www.arl.org/bm-oc/pres07.pdf](http://www.arl.org/bm-oc/pres07.pdf) (accessed Feb. 7, 2010).

# Divination and the State

## Classifying Technical Texts in Han China

By Hur-Li Lee

*Aiming at diversification and expansion of classification research, this in-depth study examines one of the six main classes in a two-thousand-year-old Chinese library catalog, the Seven Epitomes (Qilue 七略). The target class, the Epitome of Divination and Numbers, represents a group of divination manuals that are further divided into six subcategories. Through a contextualized analysis of the Epitome itself and other related texts, the study identifies a number of classificatory principles at work. The scope of the Epitome was evidently determined by government functions rather than objective observations of similarities and differences between topics represented in the library collection. In other words, the Epitome included technical manuals, as opposed to philosophical writings, collected by the offices in charge of divination in the imperial government. The study also examines the order between divisions and between individual texts within the Epitome. Further, the nature of the Epitome and its association with two modern-day concepts, science and religion, are clarified in the appropriate cultural and historical context. The final section discusses the significance of the current study and offers suggestions for future classification research.*

Ancient writings in China were used for communication not only among human beings but also between human beings and spirits. In fact, communication with spirits was probably even more important to the early development of written records

—Tsuen-Hsueh Tsien, *Written on Bamboo and Silk*<sup>1</sup>

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Submitted April 8, 2010; tentatively accepted, pending modest revision May 24, 2010; revised and resubmitted June 1, 2010, and accepted for publication.

I would like to thank Dr. Wen-Chin Lan of National Taiwan University for his contribution to the overall research project from which this paper derives. He also provided the estimates in both tables. These estimates are the results of a highly scholarly endeavor because of the history and the current state of the *Seven Epitomes*.

Research has shown that people in different cultures often categorize similar objects and concepts in drastically different ways.<sup>2</sup> These differences in categorization reflect people's diverse world views and understandably affect their information seeking and use in significant and substantive ways. What does it mean to librarians who serve increasingly diverse user groups? Presumably, an information system, such as the library catalog, with a classification structure that is based on a singular cultural perspective, is no longer adequate, attesting a genuine need to expand and enrich classification theory in terms of its cultural multiplicity. Beginning with such a broad goal, this paper investigates a classification system embodying a standpoint distant from what is currently familiar to most librarians, both culturally and chronologically. More specifically, the study focuses on classification of a particular group of technical writings that belonged to one of the six main classes in an ancient Chinese classification—the scheme applied in the *Seven Epitomes* (Qilue 七略), the first documented library catalog in China more than

two thousand years ago.<sup>3</sup> I choose this topic for a thorough analysis after considering three factors. First, little research on classification of technical writings in the Chinese tradition has appeared, and the target class (the fifth Epitome) was one of the three classes in the *Seven Epitomes* devoted to technical writings. Second, texts belonging to this group are said to have originated from some of the oldest writings that served a central communication function between human beings and spirits in an early society. Third, this class covered topics that mixed methodical observation with mantric practices, drawing much criticism and contempt from the twentieth century onward.<sup>4</sup> An investigation of the chosen class thus provides an opportunity for in-depth research into an area in early Chinese classification that is the least systematically analyzed and the most misunderstood. The goal of this study is to contribute to diversification and expansion of classification research by examining an early classification system within the context in which it was created.

The rest of the paper begins with a three-part discussion of the literature: background and makeup of the *Seven Epitomes* and the class on divination that was chosen for this study, research on the chosen class, and challenges presented by the texts. The subsequent section will identify the principles underlying the chosen class, the Epitome of Divination and Numbers. Due to the alienness of the classification and its culture to present-day readers, a section is added as a bridge to help clarify two related key concepts (namely, science and religion) in the appropriate historical context. The paper concludes with a deliberation of the significance of its findings in classification research and with suggestions for further research.

## Related Literature

### The *Seven Epitomes* and Its Epitome of Divination and Numbers

The current study targets the Epitome of Divination and Numbers, one of the six main classes in the *Seven Epitomes*, known as the first classified library catalog in imperial China (see table 1 for the six classes). The Epitome of Divination and Numbers (*shushulue* 術數略) included a group of divination manuals written before the Common Era. For convenience, the class is called the “Epitome of Divination” throughout this paper. Table 2 displays the Epitome of Divination’s six divisions and the estimated numbers of titles and volumes in individual divisions.

The catalog was one of the two bibliographic tools produced at the conclusion of a collation project commissioned by the throne in 26 BCE to develop and organize the imperial library collection in the Former Han Dynasty (202 BCE–9 CE). The project was described in its preface:

Emperor Cheng . . . summoned the Imperial Household Grandee Liu Xiang to check the canons, their commentaries, the masters, lyric verse, and rhapsodies; the Commandant of Infantry Ren Hong to check the military writings; the Grand Historian/Astrologer Yi Xiang [*sic*] to check [writings on] numbers and divination . . . and the Attendant Physician Li Zhuguo to check [writings on] formulae and techniques. (Translated by Lewis; bracketed inserts in the original translation).<sup>5</sup>

Lasting for about a quarter of a century, this monumental project began a Chinese tradition that many succeeding dynasties followed. Liu Xiang 劉向 (79–8 BCE), a renowned classicist scholar, was the first principal on the project to lead a team of scholars, including his son Liu Xin 劉歆 (53 BCE–23 CE) and specialists working on the project for almost twenty years. After Xiang’s death, Xin continued and completed the work in a few years. During the project, Liu Xiang composed a résumé, sometimes quite lengthy and detailed, for each collated and finalized book as a report to the emperor. Each résumé variably contained bibliographic information, the history of a work, information about its author, the process of collating a work, and

**Table 1.** The *Seven Epitomes*’ Six Main Classes and Their Division and Volume Counts

Epitome	# Divisions	# Volumes
The Six Arts 六藝略	9	2,987
The Masters 諸子略	10	4,583
Lyrics & Rhapsodies 詩賦略	5	1,313
Military Texts 兵書略	4	1,207
Divination & Numbers 術數略	6	2,558
Formulae & Techniques 方技略	4	862
Total	38	13,510

**Table 2.** Title and Volume Counts in the Epitome of Divination by Division

Division	# Titles*	# Volumes
Patterns of Heaven 天文	22	419
Chronology 曆譜	18	566
Five Phases 五行	31	654
Milfoil and Turtle Shell 著龜	15	485
Diverse Prognostications 雜占	18	312
System of Forms 形法	6	122
Total	110	2,558

\* Only one out of the 110 titles is extant.

often a critical annotation. All the résumés, the last few by Xin, were later gathered, possibly by Xin, into a collection entitled the *Separate Résumés* (*Bielu* 別錄) after the collation project was over. It is said that at the time, Xin felt the need for a more convenient tool to assist with organization of the library collection.<sup>6</sup> He thus created the *Seven Epitomes* to include abbreviated résumés and a six-part classification scheme. The reason that the catalog was not titled the *Six Epitomes* was that it indeed contained seven epitomes. Not shown in any extant sources, the very first epitome is said not to represent a class. In fact, a popular belief by bibliographers is that the first epitome (the Collective Epitome) was a collection of introductions to the entire catalog and to its individual classes and divisions.<sup>7</sup>

Regrettably both of these two bibliographic tools are no longer extant. The *Seven Epitomes* is generally believed to have disappeared around the end of the Tang Dynasty (618–907 CE).<sup>8</sup> Most scholars, however, concur that the “Bibliographic Treatise” of the *History of the Former Han Dynasty* (hereafter, “Han Treatise” for short), composed by Ban Gu 班固 in the first century CE, is an abridgement of the *Seven Epitomes*, with a significant amount of information in the original annotations removed.<sup>9</sup> Some of those were incorporated into other chapters of the *History of the Former Han Dynasty*, and the others were replaced with a brief note referring to the same information in an earlier work, the *Records of the Grand Historian* by Sima Qian 司馬遷.<sup>10</sup> Ban Gu also added a number of entries and relocated a few to different divisions, with clear notes, in the Han Treatise. However, the affected entries were only a small fraction of the total entries. The notes explaining the additions and relocations are a basis for estimating title and volume numbers in individual divisions of the *Seven Epitomes*. The original classificatory structure, its six classes and divisions, and the vast majority of the entries, although shortened, remained intact.

### Research on the Epitome of Divination

Ideally, research on a classification scheme begins with the classification itself and its author’s writings that elucidate its composition and theoretical foundation. The *Seven Epitomes* is a challenging case for researchers because it has not been seen for more than a thousand years and its author Liu Xin left no writings about it or its classification. Furthermore, it seemed to be of little consequence in scholarship as its abridgement, the Han Treatise, served as a satisfactory substitute for it. Not until the Qing Dynasty (1644–1912) did it reemerge when ten bibliographers individually attempted a reconstruction of the catalog, basing it on the Han Treatise with the addition of some fragments of the catalog cited in other sources.<sup>11</sup> These reconstructions have in turn led to some revived interest in studying the *Seven Epitomes* itself.

Nonetheless, writings on both the *Seven Epitomes* and the Han Treatise are equally relevant to the study of either because of the great similarities between the two.

As a whole, the literature about the *Seven Epitomes* pays limited attention to the theoretical underpinnings of the classification in question. A large portion of the writings on the classification is descriptive and at times interpretive, embedded as a minor component in a full-length treatise on or a brief introduction to the catalog.<sup>12</sup> Among those studies focusing on one or a few aspects of the classification, most either consider the entire scheme without breaking down to individual classes or examine only one of the first two classes, the Epitome of the Six Arts and the Epitome of the Masters.<sup>13</sup> The other four “lesser” classes have individually received very little coverage in the literature. For example, Xu, in a well-researched book published in 2009, discusses the intellectual foundation of the classification in the *Seven Epitomes*, class by class.<sup>14</sup> He gives only two points relating to the Epitome of the Divination: texts on divination were important in the Han Dynasty, and the contents of these texts were fraught with superstitions. Neither one relates to issues of classification. Contrary to this superficial treatment of the Epitome of Divination, his discussion and analysis of the Epitome of the Six Arts is much longer and includes, to name just three topics linked directly to classification, why the Epitome of the Six Arts was placed at the top of the classificatory structure, why the *Book of Changes* was placed as the lead of the Six Arts, and why the *Book of Filial Piety* was included in the Epitome of the Six Arts.

The only scholar who has articulated a number of classification issues concerning the Epitome of Divination is Zuo.<sup>15</sup> He is not the first scholar to present these arguments. Nevertheless, his book is exceptional in taking a systematic and original approach to considering these issues. Three of the arguments he makes are noteworthy:

- A widely perceived dichotomy of knowledge in early China separated the learning of *dao* 道 (the “Way” of living and thinking) from the learning of *qi* 器 (the vessel or the skills for practical uses). Texts in the first two classes of the *Seven Epitomes* pertained to the teachings of *dao* while texts in the last two classes belonged to the latter.
- The Epitome of Divination was subdivided by object of study. This approach to classification was unusual in the Chinese bibliographic tradition in which subject of study (meaning author) and geography were more common criteria for subcategorization.
- The order of the divisions in this class was “from Heaven to Earth,” and that is why the divisions for astrology and chronology came first and the division pertaining to “siting,” or “geomancy,” was placed at the end of the class.

All three assertions will be individually examined in the following analysis.

While not directly focusing on the principles behind the classification, literature that sheds light on the nature of individual topics relating to divination provides useful information for studying the target class.<sup>16</sup> Recent scholarship on a large number of divination manuals discovered in archeological sites during the last century is also invaluable.<sup>17</sup> Although none of the 109 missing titles in the catalog's Epitome of Divination have been found, scores of excavated texts represent divination manuals in a wide range of topics, thus offering actual textual examples for what might be cited in the *Seven Epitomes*.

To date, classification research in the West has yet to turn attention to the Chinese tradition. This does not mean, however, that traditional Chinese bibliographic classification is totally unknown outside of China. Anglophonic scholars of the so-called Confucian canon, for example, frequently cite the *Seven Epitomes*, especially its view toward the Classics (the most valuable and the oldest of all texts) as expressed in its main and sectional introductions and treatment of the Classics in the classification. One example of this is Jensen's *Manufacturing Confucianism: Chinese Traditions and Universal Civilization*.<sup>18</sup> From time to time, sinologists interested in early Chinese intellectual developments reference the *Seven Epitomes*, critiquing its categorization of either the masters or texts in technical classes.<sup>19</sup> Their main goal is not to investigate the classification itself. Instead, they compare Liu Xin's opinion with others' or present arguments against his way of classifying philosophers and texts. The results of this scholarship, while profitable in intellectual history, make no advancement in classification research.

#### Data Sources for the Current Study

Research on the *Seven Epitomes* presents two major concerns. First, researchers must be cognizant of the fact that the catalog is not available in its original form. The prolonged time lapses between the initial creation of the catalog and the present time (two thousand years) and between its disappearance and its recent reconstructions (almost a thousand years) no doubt increase difficulties in the study of this ancient work. From the twentieth century onward, researchers have relied on one of the reconstructions assembled by Qing scholars. Among its various reconstructed versions, the one by Yao Zhenzong at the end of the nineteenth century is known to be the most comprehensive and the closest to the original in terms of format and arrangement; the current study bases its analysis on a recent republication of this version, edited and supplemented by Deng.<sup>20</sup>

Second, the *Seven Epitomes*, like the majority of its successors, did not come with a handbook that provided explanations of its principles and classificatory structure.

Any attempt to study it needs to supplement the catalog itself with other data sources to arrive at useful insights—data sources to contextualize the catalog to avoid being historically and culturally insensitive. Contextual information that is of particular importance to this study includes an extensive knowledge of the language used, intellectual developments and the written and technical culture in early China, the Han government, and the personal background of Liu Xin, the cataloger and classificationist. Scholarship of archeologists and intellectual historians specializing in early China accumulated in the last few decades is also highly illuminating because it presents improved knowledge of early Chinese culture on the basis of newly excavated evidence and more rigorous research methods.

Such an archaic library classification presents great challenges to researchers. To achieve a thorough understanding of the entire scheme, one must perform detailed analyses of the scheme and its individual components with a multifaceted approach. The current study takes a snapshot of one of its main classes, reserving the rest for future research.

## Classificatory Principles

### A Class Defined by Government Offices

The introduction to the Epitome of Divination began thus: "Numbers and divination (*shushu* 數術) were the responsibilities of the Ming Tang, Xihe, astrologers and augurs."<sup>21</sup> This statement referred to the duties performed by several government offices and officials, both real and legendary, in earlier times. Besides the epitome being considered, the catalog linked a number of other categories of texts to particular government offices of the past. This was not the result of a random or thoughtless decision. Two reasons may explain why the catalog presented a parallel between the structure of books and the structure of the state apparatus.

First, for centuries writing was only accessible to a small group of people in their official capacities. None of the extant texts dated before Confucius (551–479 BCE) were private writings.<sup>22</sup> During the Shang and Western Zhou Dynasties (1766–771 BCE), the government gradually added various offices for handling increasingly diverse affairs. The emerging specializations within the government also meant specialized texts composed and maintained by each agency, a practice very much in effect through the Former Han Dynasty even as private individuals became involved in their own writing activities.<sup>23</sup> In Liu Xin's time, traditional textual specializations perceived to have originated from the idealized government structure still showed significant relevance and utility, especially in the eyes of classicists like Liu.

Second, the *Seven Epitomes* was an official government document. Its creation was a direct result of a collation

project commenced by the throne to organize the imperial library collection. Apparently, the library was built to serve the emperor who often needed to consult written records in his running of the empire.<sup>24</sup> Many Chinese bibliographers believe that the catalog's six main classes were not an invention of Liu Xin.<sup>25</sup> From the outset of the collation project, the work was divided among the collators (all of whom were government officials) according to their scholarly reputation and expertise in government (see the above quoted preface to the *Seven Epitomes*). Thus continuing the same structure in arranging the library collection—writings of a technical nature in particular—by bureaucratic specialty was both logical and pragmatic for the cataloger.<sup>26</sup>

### A Class of Divination

The epitome under study included six divisions, all pertaining to technical knowledge and skills of divination (table 2). The translation of the divisions' names and their contents poses many difficulties. Among the six divisions' names, the translation of the fifth division *zazhan* 雜占 as "Diverse Prognostications" is probably most disputable. I will explain the reason for choosing this translation in a later section, "Ordering of and Within Divisions." Regarding the contents of the individual divisions, all descriptions are more or less educated guesses because only one of all texts in the class is known to have survived. Fortunately archeological discoveries in recent decades have given an enormous amount of data that contribute to a significant improvement of the overall understanding in this area. The next section will discuss some of them in context. Below are the six divisions.<sup>27</sup>

1. Patterns of Heaven or *tianwen* 天文 (including astrology/astronomy, meteoromancy) "is used to arrange in order the twenty-eight 'mansions' [translator's note: i.e., the twenty-eight Chinese constellations] and note the progressions of the five planets and of the sun and the moon, so as to record thereby the manifestations of fortune and misfortune. It is in this way that the Sage-king conducts government. The *I* [i.e., *Book of Changes*] says: 'Looking at the signs in the heavens, one thereby ascertains the changes of the seasons.'<sup>28</sup>
2. Chronology or *lipu* 曆譜 (including calendars, related astrological and hemerological calculations, related mathematics, and genealogical tables of kings and feudal lords) "serve[s] to arrange the positions of the four seasons in order, to adjust the times of the equinoxes and solstices, and to note the concordance of the periods of the sun, moon, and five planets, so as thereby to examine into the actualities of cold and heat, life and death. Therefore the Sage-king must keep the almanac in proper order, so as to define the clothing and

color regulations of the Three Systems. Furthermore, by his investigations, he knows the times of the conjunctions of the five planets and the sun and moon, while through his arts, the miseries of calamities and the happiness of prosperity all appear manifest." The *Oxford English Dictionary (OED)* defines chronology as "The science of computing and adjusting time or periods of time, and of recording and arranging events in the order of time."<sup>29</sup> Being broader than its common usage referring to only historical chronology (i.e., the second part of the definition), this *OED* definition is a better representation of this division. The first part of the definition is sometimes called technical chronology.

3. Five Phases or *wuxing* 五行 (including various systems of numerological calculation modeling on divinations in the above two divisions): "The Five Elements [another translation of the Five Phases] are the corporeal essences of the Five Constant Virtues. . . . If one's personal appearance, speech, vision, hearing and thought lose their proper order, the Five Elements will fall into confusion and changes will arise in the five planets. For these all proceed from the numbers connected with the almanac, and are divisions of one thing (i.e., of the movements of the Five Elements). Their laws all arise from the revolutions of the Five Powers (i.e., Elements), and if they are extended to their farthest stretch, there is nothing (in the universe) which they will not reach to."
4. Milfoil and Turtle Shell or *shigui* 著龜 (divinations by milfoil stalks and turtle shells) "are used by the Sages. The *Shu* [i.e., *Book of Documents*] says: 'When you have doubts about any great matter, consult the tortoise shell and divination stalks' . . . And the *I* says: 'For making certain of good and bad fortune and accomplishing things requiring strenuous effort, there is nothing better than the divination plants and tortoise shell'; 'Therefore, when the Superior Man is about to do something or carry out some action, he asks, making his enquiry in words. They receive his order, and the answer comes as the echo's response.'<sup>30</sup>
5. Diverse Prognostications or *zazhan* 雜占 (including oneiromancy, demonology, incantation, and exorcism) "serve to keep records of the phenomena of various things and to observe the manifestations of good and evil. . . . These various methods of divination are not all of one kind, but that of the dream is most important."<sup>31</sup> My interpretation of this summary differs somewhat from the quoted translation. See the discussion below under "Ordering of and Within Divisions."
6. System of forms or *xingfa* 形法 (including siting and physiognomy) "deals with general statements about

the influencing forces in the entire nine provinces, in order to erect a walled city, its outer wall, a house or a hut. In this system of forms, the measurement and number of the bones of men and of the six domestic animals (the horse, ox, pig, sheep, dog and fowl); also the containing capacities of vessels; are examined, so as to find out whether their sound and matter are noble or mean, and are of good or evil omen. This is like the pitch-pipes, each of which, according to whether it is long or short, produces its own special sound. This is not because of the existence of divine beings, but is the natural result of their own measurement."<sup>32</sup>

Why did divination occupy one of the six main classes in the *Seven Epitomes*? And why was it recognized or accepted by Liu Xin as one of the three categories of technical writings? To understand the importance of divination in early China, we must look back in history.

According to historical records and excavated artifacts, mantic practices began in China thousands of years ago.<sup>33</sup> Recorded information about divination from earliest times showed a wide range of purposes for divination—those related to agriculture, governing, war, and many day-to-day activities. Both the Shang and Western Zhou courts conducted elaborate rituals in divination. At court, divination was not only a way to give advice for mundane activities but also a strategy for legitimizing and perpetuating the ruling of the royal house. As such, diviners were able to hold high positions and tremendous power in the government; in some cases, the king was the diviner. Gradually the kingdom further developed and bureaucracy expanded. Divination also grew in its complexity and required extensive training, giving rise to specialized offices and officials such as astrologers and augurs.

From about the eighth century BCE onward, the central government began to weaken, rigid social institutions loosened, and literacy spread. As a result, the next five hundred years (approximately corresponding to the Spring and Autumn era and the Warring States era) came to be known as the most creative period in Chinese intellectual history. Rationalized thinking emerged and developed into a number of philosophical approaches to considering central human concerns that became the new elite knowledge. Traditional technical knowledge (divination and medicine, for example) that was mostly passed down from father to son, on the other hand, lost its prestige. Divination nonetheless had its place in the Han government. While no longer at the top level of the administration, the Prefect Grand Astrologer, the most technically trained post in the Han according to Bielenstein, and the Prefect Grand Augur, assisted by their subordinates, continued their divinatory functions for the empire.<sup>34</sup> Liu Xin compiled the *Seven Epitomes* in this context. Because divination had been central to the state for hundreds of years

and divination manuals existed in a large number (110 titles and 2,558 chapters in the *Seven Epitomes*; see table 1), the importance of divination in the text culture of the Han was unquestionable.

### Being “Technical”

The distinction between philosophical and technical texts was a significant one in the *Seven Epitomes*. As Zuo points out, the *Seven Epitomes* dichotomized all texts in the imperial library into two camps: texts speaking to the Way (*dao*) and texts of a technical nature.<sup>35</sup> The latter comprised three classes including the Epitome of Divination. In effect, the collation project that resulted in the *Seven Epitomes* had a labor division that also reflected this dichotomization. The preface to the *Seven Epitomes*, believed to be written by Liu Xin, indicated that the emperor placed the collation of philosophical and literary texts in the hands of a scholar/official and the collation of technical texts in the hands of three other officials with distinct technical specialties.<sup>36</sup>

In view of this dichotomy, the reason for some texts on divination being placed in classes other than the Epitome of Divination becomes clear. The *Book of Changes*, for example, was all about divination, but it was considered one of the six Classics and was included in the Epitome of the Six Arts because of its theoretical nature. On the contrary, the texts on *yin-yang* and the Five Phases in the Epitome of Divination got separated from the writings by the *yin-yang* masters (a division in the Epitome of the Masters) because the former were applied to techniques of divination and the latter were entirely philosophical.<sup>37</sup>

### Classification by Object of Interest

In describing the traditional Chinese classification of knowledge, Zuo asserts that it was classified chiefly by the person undertaking the study and geography instead of the object or topic of study.<sup>38</sup> The *Seven Epitomes*, he concedes, was an exception because three of its main classes consisted of technical writings, each of which centered on an object of interest: military arts, divination, and medicine. His assertion lacks accuracy (a worthy topic for a future study); however, he is correct in saying that the last three classes are focused on three objects of interest. As pointed out previously, the bureaucratic structure influenced the formation of the three technical classes in the *Seven Epitomes*. The classificationist Liu Xin did not set out to study the knowledge universe deductively or inductively so that concepts, things, events, and so on could be grouped in relation to their innate similarities or differences—the latter a Western approach to classification.<sup>39</sup> In other words, a state bureaucracy provided a framework for the work and thinking in the collation and cataloging project so that the objects of interest applied to

categorizing the technical books came straight out of that framework. Although calling them “disciplines” in the narrow sense by which disciplines are understood today would be inappropriate, these three textual categories demonstrated specialties entailing highly trained technical skills that had served the ruling class exclusively. The six divisions under the Epitome of Divination clearly exhibit how objects of interest determined the divisions as well:

- Patterns of Heaven: elements and phenomena in the sky
- Chronology: calendars and genealogical tables
- Five Phases: application of the *yin-yang* and Five Phases theories to divinations modeling on the above two groups
- Milfoil and Turtle Shell: divinations by milfoil stalks and turtle shells
- Diverse Prognostications: an assortment of divinations based on events, activities, and phenomena without physical forms
- System of Forms: divinations based on interpreting forms of the land and of some physical things

These represented six broad types of divination. The *Seven Epitomes* itself did not further associate these divisions with particular government organs.

#### Ordering of and Within Divisions

One of the first principles of classification is ordering.<sup>40</sup> A clear order underlying the entire scheme is especially crucial in traditional Chinese bibliographic classification. A consensus among Chinese scholars stresses that value (or importance) of a category and age of a work were two major factors that determined the order of the classes and divisions in the *Seven Epitomes*.<sup>41</sup> The best examples are the placements of the Classics in the foremost class and “*ru* classicists” (儒家) (known in the West as Confucians whose teachings were the most valuable among the masters) as the lead division in the Epitome of the Masters. Classicist values dominated decision making in this regard. The same criterion also resulted in the prioritization of the three nontechnical classes over the three technical ones because of a long-held classicist belief in favoring the philosophical over the technical. Technical texts in the *Seven Epitomes* were so unimportant, especially after the Han, that almost all of them were allowed to disappear. Only one out of the 110 titles in the Epitome of Divination and one out of the thirty-six titles in the Epitome of Formulae and Techniques have survived. Within the Epitome of Divination, one can detect the effect of the value factor on the arrangement of the divisions despite the lack of explanations by the classificationist. Unfortunately, few clues are available for the age

or authorship of most texts in this class, making the verification of whether the age of a work was a factor in ordering the divisions difficult.

Observation of the sky and making of the calendar, according to experts of early Chinese culture, were of great importance to the imperial government because of their application to political affairs and utility for legitimization of a ruling house; carrying out these activities in private during certain times was even illegal.<sup>42</sup> This particular way of thinking is the very essence of classicist thought, as reflected in Heaven’s preeminence in the “Trinity” (i.e., Heaven, Earth, and Man) of the moral universe depicted in the *Book of Changes*.<sup>43</sup> When looking closely, the prioritization of astro-calendrical practices over the other types of divination in the epitome is evident in that Patterns of Heaven and Chronology occupied the first two divisions. Not coincidentally, the person named by Emperor Cheng to lead the collation of divination texts was the director of the Han office (i.e., Prefect Grand Astrologer) who was charged with observing the sky, keeping records of those observations, and performing functions related to the official calendar.<sup>44</sup>

Ranganathan’s “Principle of Later-in-Time” for arranging arrays (or subclasses) seems applicable to the order between Patterns of Heaven and Chronology.<sup>45</sup> The introduction to Patterns of Heaven stated, “Looking at the signs in the heavens, one thereby ascertains the changes of the seasons.”<sup>46</sup> Because ascertaining seasonal changes, along with other calculations of time, was part of chronological work, Liu Xin logically placed Chronology after Patterns of Heaven. Similarly, Ranganathan’s “Principle of Later-in-Evolution” is useful for explaining the placement of Five Phases to be the third division because the types of divination in Five Phases used methods or tools imitating the observed patterns (in the sky, seasons, and so on) that belonged to the first two divisions.

Among the rest in the remaining three divisions, divination by milfoil stalks and turtle shells stood out. The summary of this division unwaveringly linked these types of divination to the legendary sages while no such connection was made to other mantic practices in the last two divisions. Based on the text, milfoil and turtle shell divinations were more important than oneiromancy, demonology, exorcism, and divinations by form according to the assessment of the classificationist. This judged importance led to a decision to place Milfoil and Turtle Shell before Diverse Prognostications and System of Forms. Other reasons made milfoil and turtle shell divinations more prestigious. On the one hand, the most important Classic, the *Book of Changes*, was originally a manual of divination by milfoil stalks.<sup>47</sup> On the other hand, turtle shells used in divination had to be of certain sizes, signifying their age and thus their prognosticative power, and in turn divination by this means was exclusively used in central state functions.<sup>48</sup> The associations with

a Classic and with state rituals provided elevated prestige to these types of divination.

To date, no reasonable explanations have been proposed for the order of the last two divisions in the Epitome. The problem appears to stem from the definition of the character *za* 雜 (as in *zazhan* 雜占, the fifth division); some scholars interpret it as “miscellaneous.”<sup>49</sup> But placing “miscellaneous divinations” before a category that is not miscellaneous (i.e., System of Forms) seems odd in classification. It would contradict the Chinese tradition to have the miscellaneous (implying things that are mixed, impure, disordered, and trivial) precede anything else.<sup>50</sup> I believe that *za* meant something different in Liu Xin’s conception. According to a philological work, *Fangyan* 方言, written by Yang Xiong 揚雄, a contemporary of Liu Xin, another definition of *za* is “to assemble (*ji* 集),” and an authoritative second-century dictionary *Shuowen jiezi* 說文解字, by Xu Shen 許慎, defines *za* as the blending of five colors.<sup>51</sup> A better definition of *za* being an adjective might be “eclectic” or “diverse” in this context. Similarly, a better translation of *zazhan* might be “eclectic divinations” or “diverse prognostications.”<sup>52</sup> I also propose an alternative reading of the introductions to the last two divisions that suggests a dichotomization of all types of divination not included in the first four divisions into those without concrete forms (i.e., the division of Diverse Prognostications) and those with concrete forms (i.e., the division of System of Forms). At the center of this new interpretation is the character *shi* (事), the sixth character in the introduction to Diverse Prognostications. The usages of this character in early texts seem to place it opposite another character, *wu* 物, sometimes with *shi* (meaning work, activities, events, and affairs that are abstract) and *wu* (meaning objects of concrete form). An example of them directly opposite each other can be found in the *Analecets* by Confucius.<sup>53</sup> In applying this definition, my interpretation of the first sentence in the division’s introduction differs slightly from the translation quoted above. If one follows the common Chinese practice of preferring the abstract to the concrete, the order of Diverse Prognostications preceding System of Forms is logical. This interpretation is not yet conclusive. One unresolved issue is that ascertaining the contents of all books listed in Diverse Prognostications is challenging because none of them are extant. The last four titles in the division present special difficulties because no similar works are extant. Without archeological excavations providing texts equivalent to all types of divination included in this division, any definitive conclusion about the division is unlikely.

Somewhat differently, Zuo maintains that the order of the divisions in the Epitome of Divination was “from Heaven to Earth.”<sup>54</sup> This is a simplistic generalization that accounts for only the order of some divisions, but fails to explain why the divisions Milfoil and Turtle Shell and

Diverse Prognostications came between Heaven and Earth.

The order of texts within each division was also said to be of meticulous design.<sup>55</sup> Little information exists that could help understand this order. This is a serious problem in the class under study because the majority of texts in it had no known authors, no content-related annotations were provided, and only one of the texts in the class has survived today. Lü identifies a few ordering criteria on the basis of his analysis across divisions in the entire *Seven Epitomes*.<sup>56</sup> One of the applicable criteria is collocation by character or form of writing. Applied to the target class, it means that all texts about the same type of divination under one division were collocated. An example is that all texts on turtle shell divination were placed before the texts on milfoil divination in the division Milfoil and Turtle Shell. The second relevant criterion enumerated by Lü is age of a text. In the division Chronology, for example, works attributed to two authors active slightly earlier than Liu Xiang were followed by works attributed to two authors approximately contemporary with Liu Xiang and Xin. Although not mentioned by Lü, value, too, is a visible factor. For example, the first two titles in the division Diverse Prognostications were about oneiromancy, precisely the most important type of divination in the division as declared in the division’s introduction.

## A Unique Cultural Perspective

A classification is a cultural artifact, thus examining a classification within the framework of its cultural context is imperative. In the above analysis, I tried to understand part of the classification in the *Seven Epitomes* by situating it in its historical, political, and intellectual context. This section, on the other hand, builds a bridge for readers unfamiliar with that particular culture. More specifically, some explanations are provided for linking the core ideas covered in the Epitome of Divination to two modern, broad fields—science and religion—that are recognizable readers today.

### Science or Natural History

In investigating ancient Chinese scientific endeavors, sinologists in the West often bring up the *Seven Epitomes* (or the Han Treatise), particularly its Epitome of Divination and Epitome of Formulae and Techniques.<sup>57</sup> The former, they explain with qualification, contained some knowledge that would fall under natural science. Sivin lists premodern Chinese science in two groups: quantitative (mathematics, mathematical astronomy, and mathematical harmonics) and qualitative (astrology, medicine, alchemy, siting, and physical studies).<sup>58</sup> Mathematical harmonics studied measurement of resonant pipes that produce music in court rituals. “Physical studies” is used by Sivin as “a grab bag of

traditions that considered a great range of natural phenomena in the light of fundamental concepts.<sup>59</sup> The Epitome of Divination covered topics in astrology, mathematical astronomy, mathematical harmonics, siting, and physical studies.

The definition of science is an important issue to address here. In their comparison of science between early China and Greece, Lloyd and Sivin emphasize that the modern conception of science does not apply to what they examine. What they mean by science in ancient times is “the bid to comprehend aspects of the physical world.”<sup>60</sup> It is their notion of science that is used in this study. Thus readers need to be aware of the difference and not apply the familiar concept of modern science to understanding that of the past. This is not to say that the ancient Chinese achieved nothing worthy of being called science by today’s standards. They simply pursued such knowledge with a markedly different epistemological and institutional mindset.

Mathematics was part of the Epitome of Divination only as it was applied to astronomy and harmonics. Nowhere else in the *Seven Epitomes* did mathematics hold a spot. Surely other types of mathematical texts were present at the time. The best proof is the *Writings on Reckoning* (*Suanshu shu* 算術書), a recently excavated manuscript, which is dated by archeologists to about 200 BCE but was not included in the *Seven Epitomes*.<sup>61</sup> This book is a collection of mathematical problems that deal with elementary arithmetic as well as everyday accounting work in government. Some scholars rationalize that the collation project was only supposed to cover books within a limited scope as outlined by the emperor, leaving out writings such as elementary mathematical texts and legal documents that were responsibilities of other government agencies.<sup>62</sup> This thinking is consistent with the previous assertion that the departmentalization of the state machine was a significant consideration in the cataloging project. The influence of government was apparent in the classification of the three types of technical writings and in the exclusion of others.

### Religion or Occult Thought

Similarly, one should not apply the modern concept of religion in the West to understanding religious elements in early China. The ancient Chinese, like many other peoples in past times and in some present-day societies, mixed ancestor veneration, religious beliefs, magic, mythology, and manticism into one. Sinologists, like Kalinowski and Harper, writing about early Chinese religious beliefs often need to describe them as magico-religious (or occult) or add many qualifiers to the concept of religion.<sup>63</sup> Furthermore, readers need to keep in mind that the *Seven Epitomes* was the catalog of the Han imperial library, which means

that texts in the Epitome of Divination recorded religious practices at the court and among the elite. They were not representative of those practiced by the populace.

Another characteristic emphasized in the study of early Chinese religion is its inseparable connection to *li* (禮), a concept central to *ru* classicism. *Li*, often translated as “rites” or “ceremony,” embodied a set of principles that prescribed proper conduct for all members of society. To Confucius and classicist masters after him, *li* included both propriety and rituals.<sup>64</sup> The latter, formalized rituals performed at religious and other ceremonies, recorded in divination texts thus fit into an orderly world, of which the supernatural, nature, and humankind were all integral part.<sup>65</sup> According to Collins, the success of classicists in getting their ideology canonized by the Han throne was a direct result of their establishment of a tie to state divination rituals.<sup>66</sup>

### Conclusion

The *Seven Epitomes* was one of the most influential written records in imperial China. Its importance, however, has not always been apparent or fully appreciated. One possible reason for the past inattention to the catalog is that few made an effort to understand its design fundamentals. As an unfortunate result, its abridged version, the Han Treatise, took precedence and later made the catalog seem dispensable, leading to its eventual disappearance almost a thousand years ago. The renewed interest in and recognition of the catalog in the Qing Dynasty was a crucial step in giving it a new life that, in turn, formed a critical foundation allowing future researchers to examine the catalog and its classification.

Building on this foundation and recent research on mantic literature and practices in early China, this paper has offered an analysis of the classificatory principles applied to the Epitome of Divination in the *Seven Epitomes*. This analysis affirmed that the Epitome of Divination was a category for manuals collected by government offices responsible for all types of divination. In other words, governmental functions, rather than observed topical similarities or differences, dictated the establishment of the class. The manuals categorized into the Epitome of Divination detailed technical rules and procedures for the divinatory rituals while ethical concerns behind the rituals were topics treated in philosophical or literary texts belonging to other classes. Another classificatory principle seen in the Epitome of Divination was its focus on objects of interest in the formulation of both the class and its divisions—an uncommon approach to classification in the Chinese bibliographic tradition. Lastly, evidence seemed to corroborate and reinforce a long-held belief in establishing an order between vertical as well as horizontal categories. There are five noticeable

factors for determining order in the Epitome of Divination:

- value of a category or subcategory
- collocation by characteristic similarity
- chronological sequence of the objects in question
- evolutionary sequence of the objects in question
- age of a text

In a way, the classification in the *Seven Epitomes* is similar to the United States Superintendent of Documents classification system (i.e., SuDoc system) because they both organize texts by government office, demonstrating the commonality of institutional consideration in classification across some cultures. The former, however, lacked rigor and consistency and did so only to organize a portion of, rather than all, texts. Judged by the fact that divination occupied a whole class in a six-section classification, one might reasonably conclude that divination was important to the Han government.

A key objective of the current study was to understand the classification of a targeted group of texts in their appropriate historical and cultural context. I made efforts to avoid the pitfalls of viewing a two-thousand-year-old Chinese bibliographic tool through the lens of the modern knowledge framework that has emerged from the West. For instance, the analysis presented here revealed that grouping technical texts on divination was a result of a functional consideration in government rather than an observation of topical similarities. While this approach would be at odds with present thinking in organizing most library collections, it worked well for the intended purpose of an imperial library catalog. An instructive example was the categorization of mathematical texts in the Epitome of Divination. The mathematics covered in those texts were developed as a tool for assisting in the study of astronomy. Thus collocating these with other texts on astronomy and astrology during a time with no distinction between astronomy and astrology was logical. Regarding this instance in the classification as a mistake or weakness is ignoring both history and culture.

With a sensitivity and attention to the context, the study was able to identify several classificatory principles in the *Seven Epitomes*. These findings are not meant to be an end by themselves, and I do not claim to have completed the investigation of the classification in the *Seven Epitomes* or the entire Chinese tradition of bibliographic classification in this paper. The classification scheme itself is complex and requires extensive further research. Some research questions of significance include the following: How was the classification structured? What was the principle or principles for structuring? What was its epistemological approach? Was the classification applied to organizing physical items in the library? If it was, did it mean that the classification assisted in the retrieval of physical items? The other five main classes

in the scheme also need thorough study individually. The first two (the Epitome of the Six Arts and the Epitome of the Masters) have been the favorite topics of Chinese intellectual historians, who have focused on interpreting intellectual developments and often attempted to break away from the existing classification to generate new ways of realigning the masters. Contrary to that, classification research ought to focus on the classification itself. The increased knowledge of the Chinese tradition provides a valuable window on alternative approaches to classification that, in turn, broaden our view toward service and system design.

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  27. The quotation under each of the divisions is from the original text of the Han Treatise, somewhat abbreviated, translated by Bodde (in Fung, *A History of Chinese Philosophy*, 1: 26–28). Romanization in that translation is Wade-Giles. To help readers understand the translation, I have added several notes in brackets. Many works on excavated texts similar to those in the Epitome of Divination provide valuable information regarding this class; for example, see Li Ling 李零, *Jianbo gushu yu xueshu yuanliu* (Beijing: Shenghuo dushu xizhi sanlian shudian, 2004).
  28. Most scholars describe *tianwen* as astrology or astronomy because no clear-cut distinction was made then between the two. See Michael Loewe, "The Religious and Intellectual Background," in *The Cambridge History of China*, ed. Denis Twitchett and Michael Loewe, 649–725 (Cambridge, England: Cambridge Univ. Pr., 1986). In addition, a prominent astronomer Chen Zungui 陳遵媯 explains that *tianwen* before the modern time included study of elements and phenomena in both the outer space and the earth's atmosphere, which means that *tianwen* also covered meteoromancy. See Chen Zungui, *Zhongguo tian wen xue shi*, 3 vols. (Shanghai: Shanghai renmin chubanshe, 2006). Three of the books listed in the division of Patterns of Heaven clearly mentioned in their titles clouds, rain, and rainbow.
  29. Oxford English Dictionary Online (Oxford, England: Oxford Univ. Pr., 2000), s.v. "Chronology" [proprietary source] (accessed June 15, 2010).
  30. The text quoted from the *Book of Changes (I)* in this summary is actually from two separate passages. The translator mistakenly puts them into a single set of quotation marks. Hence, correction is made with additional punctuation.
  31. A couple of books in this division seemed to cover divination topics relating to agricultural activities such as planting trees and raising silkworms.
  32. "Siting" is an English term used by Bennett to replace the old translation, "geomancy," to mean the selection of a site with good energetic qualities that is suitable for a walled city or any building, relying on observation of celestial phenomena and other mantic methods. See Steven J. Bennett, "Patterns of the Sky and Earth: A Chinese Science of Applied Cosmology," *Chinese Science* 3 (1978): 1–26.
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  47. Michael Nylan, *The Five "Confucian" Classics* (New Haven, Conn.: Yale Univ. Pr., 2001).
  48. Michael Loewe, "Divination by Shells, Bones and Stalks During the Han Period," in *Divination, Mythology and*

- Monarchy in Han China* (Cambridge: Cambridge Univ. Pr., 1994): 160–90.
49. For example, Bodde translates *zazhan* as “miscellaneous divinations” and Lloyd translates it as “miscellaneous prognostic procedures.” See Fung, *Chinese Philosophy*, 1: 28; G. E. R. Lloyd, *Ancient Worlds, Modern Reflections: Philosophical Perspectives on Greek and Chinese Science and Culture* (Oxford, England: Clarendon, 2004): 27. The same division is also translated as “other methods of divination” by Richard E. Strassberg, *A Chinese Bestiary: Strange Creatures from the Guideways Through Mountains and Seas* (Berkeley: Univ. of California Pr., 2002): 15.
  50. Scholars encounter the same problem of interpretation in the *zajia*, the eighth division in the Epitome of the Masters. Increasingly “Eclectics” or “Eclectic School,” instead of “Miscellaneous School,” is used as the translation for this division. For an example in English, see R. P. Peerenboom, *Law and Morality in Ancient China: The Silk Manuscripts of Huang-Lao* (Albany: State Univ. of New York Pr., 1993): 230.
  51. Yang Xiong 揚雄, *Fangyan* (Taipei: Taiwan shangwu, [1975]); Xu Shen 許慎, *Shuowen jiezi* (Taipei: Shijie, [1986]).
  52. This is the translation used in Kalinowski, “Technical Traditions.”
  53. Confucius, *The Analects*, trans. David Hinton (Washington, D.C.: Counterpoint, 1998).
  54. Zuo, *Sibu zhi xue*.
  55. Lü, *Zhongguo muluxue*.
  56. *Ibid.*, 13–14.
  57. For example, Geoffrey Lloyd and Nathan Sivin, *The Way and the Word: Science and Medicine in Early China and Greece* (New Haven: Yale Univ. Pr., 2002).
  58. Sivin, “Science and Medicine in Chinese History.”
  59. *Ibid.*, 190.
  60. Lloyd and Sivin, *The Way and the Word*, 4.
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  62. Gu Hongyi 顧宏義, “*Qilue* weihe weishou falü tushu?: Qiantan Xi Han falü tushu de jiaoli,” *Gui tu xue kan* 37 (1989): 48–49; Liu Yizheng 柳詒徵, *Zhongguo wen hua shi* (Taipei: Zheng Zhong shu ju, 1982).
  63. Kalinowski, “Technical Traditions”; Harper, “Natural Philosophy and Occult Thought.”
  64. JeeLoo Liu, *An Introduction to Chinese Philosophy*, 59–60.
  65. Loewe, “Religious and Intellectual Background,” 706.
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## What is a Professional Cataloger?

### Perception Differences between Professionals and Paraprofessionals

By Elizabeth J. Cox and Ann K. D. Myers

*This paper examines the roles of professional and paraprofessional catalogers as they are perceived within the cataloging community. A survey was sent to all catalogers in member libraries of the Association of Research Libraries. In presenting these results, the authors consider whether a difference still exists between professional and paraprofessional catalogers beyond the master of library and information science degree and, if so, the nature of any such difference. In the process, the authors also examine issues such as whether catalogers feel that their work is valued and how cataloging work is evaluated.*

The roles of professionals and paraprofessionals within libraries have been in flux for more than a decade. Advances in technology have streamlined workflows, allowing staff at all levels to engage in higher-level work. Reduced budgets and the reduced staff levels that go along with them have required reshuffling of job duties and shifts in department priorities. Some of these changes have blurred the lines between professional and paraprofessional staff. Despite these shifts, the library profession still defines employees and the work they do in terms of professional librarians, requiring a master of library and information science (MLIS), and paraprofessional staff, who typically hold at least a bachelor's degree.<sup>1</sup>

Perhaps nowhere in the library has the effect of technology on library staff been more pronounced than in technical services. As clerical tasks have increasingly been taken over by automated systems or student workers, paraprofessional staff have been assigned higher-level functions, freeing professional librarians to focus on the big picture of the cataloging department, the library, and the profession. However, these shifts have not occurred uniformly across the profession, leading to disparities in how paraprofessionals' higher-level work is regarded and whether they are compensated adequately for their new roles.

This paper will examine how professional and paraprofessional catalogers view their work, drawing on findings from a survey sent to cataloging department staff in Association of Research Libraries (ARL) member libraries. By looking at performance expectations for these two groups, how their work is evaluated and their productivity measured, and their perceptions of the value assigned to their work, this study provides a snapshot of cataloging and catalogers at this point in time.

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Submitted September 4, 2009; returned to the authors November 19, 2009 with request for revision and resubmission; revision submitted January 26, 2010; reviewed and tentatively accepted March 17, 2010, pending modest revision; revision submitted February 27, 2010, and accepted for publication.

## Literature Review

Although many articles and books touch on this topic, little has been written focusing solely on the role of professionals and paraprofessionals in the cataloging department. ODLIS: Online Dictionary for Library and Information Science defines a cataloger (meaning a professional librarian) as “a librarian primarily responsible for preparing bibliographic records to represent the items acquired by a library, including bibliographic description, subject analysis, and classification. Also refers to the librarian responsible for supervising a cataloging department.”<sup>2</sup> ODLIS does not define a paraprofessional cataloger, but the general definition for paraprofessional includes a reference to cataloging: “Library paraprofessionals are usually assigned high-level technical support duties, for example, in copy cataloging and serials control.”<sup>3</sup>

These high-level technical support duties are due, in part, to technical advances in computing and automation that became widespread in the 1990s. The changing role of paraprofessionals was the primary topic at the January 1996 meeting of the Association for Library Collections and Technical Services (ALCTS) Role of the Professional in Academic Research Technical Services Departments Discussion Group.<sup>4</sup> Discussions noted that paraprofessionals were performing such tasks as material selection, cataloging (both original and complex copy), and day-to-day supervision, which used to be solely professional duties. Participants further observed that changes in paraprofessionals’ activities led to changes in professionals’ roles, with professionals becoming more involved in strategic decision making, goal setting, and focusing on managing change.

Smith’s 2009 qualitative analysis of staffing trends in technical services indicated that paraprofessionals are now given an increased role in technical services departments, with more responsibility and involvement in department concerns, while low-level work is increasingly outsourced or stopped altogether.<sup>5</sup> Meanwhile the role of professionals is increasingly removed from the day-to-day operations of technical services in favor of supervisory work, staff training, and higher-level work related to the “big picture” of the library profession.<sup>6</sup> Intner and Johnson pointed out that even with these changes in staffing, trends in job duties remain the same: professional librarians manage the cataloging department and do original cataloging, while paraprofessionals may serve as assistant managers and do copy cataloging.<sup>7</sup> However, the authors noted some important differences in this arrangement—paraprofessionals are now often unit supervisors within the department and, increasingly, a few professional catalogers and several paraprofessional or clerical copy catalogers do all the in-house cataloging.

Wakimoto and Hsiung’s 2003 study of the cataloging department at California State University

Northridge (CSUN) showed the effects of technology on professional and paraprofessional job duties.<sup>8</sup> CSUN’s adoption of networked workstations and the resulting job restructuring happened much faster than at other institutions when the 1994 earthquake forced them to rebuild from the ground up.<sup>9</sup> Staff at all levels reported better morale and increased job satisfaction. Paraprofessionals appreciated having more freedom to exercise their judgment and solve cataloging problems on their own, while professionals had more time to pursue professional activities such as conducting training sessions for the paraprofessional staff and collection development.

Highlighting another cause of this shift in responsibilities, Wells in 2003 looked at how technical services departments adjust to hard financial times.<sup>10</sup> She noted that more than half of the departments that choose to reorganize after losing positions transfer work from professionals to paraprofessionals. She also noted that professionals were often called on to assist in other departments, such as reference or collection development, thereby hastening this type of transfer. Ivey also considered changes related to financial constraints, including having paraprofessional staff perform complex copy or original cataloging.<sup>11</sup> He noted that although there has been much discussion, and perhaps some controversy, on this topic, “this practice . . . is now nearly universal.”<sup>12</sup>

In a 1997 article, Mohr and Schuneman presented both advantages and disadvantages to paraprofessionals performing original cataloging, which was a relatively new practice at the time.<sup>13</sup> Advantages included freeing professional catalogers for more complex cataloging, management duties, professional duties, and other activities such as collection development, along with better staff morale, better understanding by the paraprofessionals of cataloging issues, greater productivity, a reduced backlog, and improved efficiency. Disadvantages included the time and resources required to train and supervise the paraprofessionals in their new duties, ongoing quality control, supervisors not wanting to exploit paraprofessional staff, paraprofessionals lacking theoretical and educational background in cataloging issues and trends, and institutional rules or union contracts limiting what paraprofessionals may do.

The increased need for education and training of paraprofessionals has become more widely recognized and supported by the library profession as a whole. In 2001 Kao noted, “Many professionals in the field have suggested that some kind of certification for library technicians be established as an educational standard, so that the claims that library technicians are professional workers can be justified.”<sup>14</sup> At the time of this writing, the Council on Library/Media Technicians (COLT) website listed fifty-four library technician programs in the United States, including institutions offering certificates, associate degrees, and

bachelor's degrees.<sup>15</sup> The American Library Association-Allied Professional Association (ALA-APA) has a partial list of state and regional certification programs on their website.<sup>16</sup> The ALA-APA also has created its own program, Library Support Staff Certification (LSSC).<sup>17</sup>

Regarding evaluation, Foster described his desired characteristics for a professional in terms of what department heads should look for when evaluating staff. For example, the supervisor should determine if the cataloger is performing professional-level work and making professional decisions. Foster then noted that statistics alone do not give a supervisor the necessary information on which to judge an individual's work and suggested that other activities such as bibliographic control and work outside the department should also be considered.<sup>18</sup>

As the level of paraprofessional work has increased, the role of professional catalogers has expanded outside of day-to-day cataloging activities, particularly in their role as faculty. In 2002, Ferris addressed the issue of cataloging librarians seeking tenure and presented ways that tenure benefits catalogers.<sup>19</sup> These benefits include encouraging catalogers to work at a level of expertise beyond simple cataloging functions, dealing with complex cataloging problems, and publishing their research into these problems, which ultimately contributes to the advancement of cataloging knowledge. Networking with other professionals both locally and nationally can lead to collaboration between libraries. Ferris concluded by arguing that tenure is the ultimate challenge for a professional catalog librarian and that along the way, the librarian will vastly improve his or her cataloging expertise, contribute to the educational function of librarianship, and advance the profession as a whole as well as the goals of his or her particular institution.

On the differences between professional and paraprofessional catalogers, Benaud wrote, "The difference was once obvious: professionals did the intellectual work. . . . Reality is somewhat different from what is expressed in the literature." Benaud went on to say that she believes that paraprofessionals now understand the theory (the "why") in addition to the practical (the "how").<sup>20</sup> But as she noted, this opinion was and is not always the case. Seven years later, Benaud, Bordeianu, and Hanson described how the profession had changed, stating that professional catalogers are more likely to be involved in the rules and management of cataloging such as the Name Authority Cooperative Program (NACO) and the Cooperative Online Serials Program (CONSER).<sup>21</sup> They observed that "the more 'core' cataloging a task is, the more likely it is to be performed by professionals."<sup>22</sup>

One might assume that these changes to catalogers' roles and responsibilities could lead to work-related stress. Leysen and Boydston's 2007 study on job satisfaction did not find this, however.<sup>23</sup> When they looked at the

effect of changing roles and responsibilities for catalog librarians, they found that most catalog librarians were comfortable with these changes, felt that their duties were clearly defined, and accepted the fact that their duties are expanding beyond just cataloging. The study found some lingering concern among catalog librarians over the deprofessionalization of cataloging activities, but Leysen and Boydston concluded that most of this concern is diminishing.

The amount of discussion in the literature on the changing roles of both professional and paraprofessional catalogers suggests that these changes are here to stay. Professional catalogers are more involved in strategic planning and managing change, and those that have faculty positions are encouraged to broaden their expertise through research and collaboration with colleagues. Paraprofessional catalogers have more freedom to exercise their judgment on cataloging problems and are given more complex cataloging tasks. Concerns regarding the time and resources required to train paraprofessionals for more complex cataloging are diminishing, and profession-wide support for increased education and training of paraprofessional catalogers is apparent. While these changes are clearly reflected in the literature, the question remains: how are the differences between professional and paraprofessional catalogers perceived by the catalogers themselves?

## Research Questions

The authors undertook this study to answer two questions. First, do performance expectations differ for professional and paraprofessional catalogers? In addition, do research and publication expectations and service expectations differ? Another aspect of understanding performance expectations is examining the manner and extent to which work is evaluated and how productivity is measured. The authors asked the respondents about how work evaluation and productivity are handled at their institution. Second, do professional and paraprofessional catalogers view their work and its value differently? To answer this question, the authors asked a set of questions that explored perceptions of value of work, nature and level of work, and level of responsibility.

## Research Method

The authors created a survey using a standard Web-based input form, including radio buttons, check boxes, and text blocks. Responses were gathered in the Southern Illinois University Instructional Support Services' survey generator, provided under open-source licensing by Virginia Tech

University.<sup>24</sup> Four library colleagues (two catalogers and two administrators with previous cataloging experience) reviewed the survey questions. In compliance with the requirements of the authors' university, the survey was vetted by the Human Subjects Committee and approved on September 24, 2008. The survey questions can be found in appendix A. Question 14 addressed perceptions about work and is the only question that provided the opportunity to add comments. These comments are referenced in the survey results.

In October 2008, the authors contacted staff in ARL member libraries via e-mail with a request to participate in the survey. The authors chose to focus on ARL libraries to limit responses to institutions that share characteristics similar to the authors' institution and because the authors lacked the resources to survey more widely. The e-mail message, with a link to the survey, was distributed to 122 individuals representing the 124 ARL member libraries; contact information was not available online for two of the institutions. The individuals who received the e-mail held one of the following titles (identified on each institution's website): head (or equivalent) of the cataloging department, head (or equivalent) of the technical services department, or applicable library administrator. The individuals were strongly encouraged to distribute the survey request to all professionals and paraprofessionals in their cataloging departments. The survey was open from October 14 through November 15, 2008. The authors sent a reminder on November 5, 2008.

## Survey Results and Discussion

### Demographics

A total of 279 individuals responded to the survey; 237 of the responses were valid. Not all respondents answered all questions, thus the totals for some question responses do not agree with the total number of valid survey responses. The universe of possible respondents cannot be determined. Not all ARL institutions list their staffs on their websites. Of those that do, some do not distinguish between professionals and paraprofessionals, while others do not distinguish staff members by functional units within technical services. Of survey respondents, 108 (45.6 percent) were professional librarians, 117 (49.4 percent) were in paraprofessional positions, and 12 (5.1 percent) were in administrative/professional (A/P) positions. In collating the data, the authors chose to combine responses by professionals and A/P under the professional heading, resulting in a total of 120. This allowed for smoother comparison between professionals and paraprofessionals.

Of the 236 respondents, 145 (61.4 percent) have their MLIS degree or are currently working toward it (table 1). Of the 120 professionals, 113 have an MLIS and 1 is working toward it. Of the paraprofessionals, 23 have an MLIS and 8 are working toward it. More than half of both professionals and paraprofessionals with an MLIS earned their degree sixteen years ago or more (table 2).

A number of respondent comments touched on the relative value of an MLIS, with the majority seeing little correlation between possession of an MLIS and cataloging expertise or ability. Many pointed out the lack of cataloging training in library school and that most catalogers learn on the job. One individual wrote, "I have trained many catalogers, both with and without the MLS and do not believe that the MLS is a determining factor to success in the job," and another commented, "I find most of the distinctions between the 2 categories [i.e., professional and

**Table 1.** Degree Status

	Have MLIS		Working on MLIS		Do Not Have MLIS		Total No.
	No.	%	No.	%	No.	%	
<b>Professionals</b>	113	94.2	1	0.8	6	5.0	120
<b>Paraprofessionals</b>	23	19.8	8	6.9	85	73.3	116*
<b>Total</b>	136		9		91		236

\* One paraprofessional did not answer.

**Table 2.** Length of Time Since Earning MLIS

	0-3 Years		4-6 Years		7-10 Years		11-15 Years		16-20 Years		21+ Years		Total No.
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	
<b>Professionals</b>	14	12.4	7	6.2	14	12.4	13	11.5	25	22.1	40	35.4	113
<b>Paraprofessionals</b>	5	21.7	2	8.7	1	4.3	3	13.0	5	21.7	7	30.4	23
<b>Total</b>	19		9		15		16		30		47		136

paraprofessional] to be arbitrary and archaic. I could teach any of the staff to do what I do and they wouldn't need an MLS." Many respondents felt that having an MLIS degree led to management or administrative roles and regional or national committee work, rather than cataloging at the institution level.

Data on respondents' age and years working in the field of librarianship are presented in table 3. Seventy-nine (33.0 percent) were between 25 and 44 years old; 149 (63.0 percent) were between 45 and 64, and 9 (4.0 percent) were 65 or older. The range of experience varied, with 125 (53.0 percent) working more than twenty years in the library profession.

Of the respondents, 222 (93.7 percent) spent more than half of their work time in technical services, and 233 (98.3 percent) had cataloging as part of their current job duties (table 4). The 15 respondents (6.2 percent) who primarily worked outside of technical services were split between public services and special collections. Job duties in addition to cataloging included supervision (34.2 percent), serials/electronic resources (29.9 percent), special collections (16.8 percent), and acquisitions (15.2 percent). Thirty-one (13.1 percent) responded with "other," reporting such responsibilities as database management and metadata.

#### Evaluation of Cataloging and Measurement of Productivity

Respondents were asked how their work as a cataloger is evaluated (see table 5). Eighty-five (36.0 percent) of 236 total respondents reported that none of their records are checked. Seventy-three (30.9 percent) responded that their records are checked only when questions arise. The remaining responses were split between all records checked by supervisor (1.3 percent), original records checked by supervisor (6.4 percent), original records checked by peer (7.2 percent), records checked randomly (6.8 percent), and other (11.4 percent). Of the latter, 8 (3.4 percent) were department heads or supervisors who do not catalog. Another 4 (1.7 percent) noted that their records were checked only during the training or review periods. Responses varied further depending on whether the individual was a professional or paraprofessional cataloger. Sixty-one (50.8 percent) of 120 professional respondents replied that none of their records were checked, and 23 (9.7 percent) of professional respondents replied that records were only checked when questions arose. Among paraprofessionals, the responses were almost the opposite, with 24 (10.2 percent) having no records checked and 50 (21.2) having records checked with questions.

Respondents were asked how their productivity is measured (see table 6). Ninety-five (40.6 percent) of 234 total respondents noted that productivity was based on the

**Table 3.** Number of Respondents by Age and Years Working in Librarianship

Respondents' Age	No.	%
24 or younger	0	0.0
25–34	24	10.1
35–44	55	23.2
45–54	73	30.8
55–64	76	32.1
65 or older	9	3.8
Total	237	100.0
Years in Librarianship	No.	%
0–3	12	5.1
4–6	12	5.1
7–10	22	9.4
11–15	31	13.2
16–20	33	14.0
21 or more	125	53.2
Total	235	100.0

**Table 4.** Work Responsibilities

Respondents' Primary Work Area (More than 50% of time)	No.	%
Technical services	222	93.7
Public services	7	2.9
Special collections	7	2.9
Administration/business	1	0.4
Total	237	99.9*
Respondents' Current Job Duties (Multiple answers possible)	No.	%
Cataloging	233	98.3
Acquisitions	36	15.2
Preservation	9	3.8
Serials/electronic resources	71	29.9
Circulation/reserves	7	2.9
Interlibrary loan	0	0.0
Reference	20	8.4
Collection development/liaison work	22	9.3
Special collections	40	16.8
Supervision	81	34.2
Library administration	22	9.3
Other	31	13.1

\*Total does not equal 100 because of rounding.

number of records completed in a given time period; 114 (48.7 percent) respondents said that their work was not measured quantitatively. Of the 118 professionals responding, 65 (55.1 percent) did not have their work measured

**Table 5.** Evaluation of Cataloging

	No.	%
<b>All records checked by supervisor</b>		
Professionals	2	0.8
Paraprofessionals	1	0.4
Total	3	1.3
<b>All records checked by peer</b>		
Professionals	0	0.0
Paraprofessionals	0	0.0
Total	0	0.0
<b>Original records only checked by supervisor</b>		
Professionals	2	0.8
Paraprofessionals	13	5.5
Total	15	6.4
<b>Original records only checked by peer</b>		
Professionals	8	3.4
Paraprofessionals	9	3.8
Total	17	7.2
<b>Records checked only when I have question</b>		
Professionals	23	9.7
Paraprofessionals	50	21.2
Total	73	30.9
<b>Records checked randomly</b>		
Professionals	4	1.7
Paraprofessionals	12	5.1
Total	16	6.8
<b>No records checked</b>		
Professionals	61	25.8
Paraprofessionals	24	10.2
Total	85	36.0
<b>Other</b>		
Professionals	20	8.5
Paraprofessionals	7	3.0
Total	27	11.4
<b>Grand Total</b>	<b>236</b>	<b>100.0</b>

quantitatively, while the majority of paraprofessionals (49.1 percent) did. Of those responding “other,” some noted that they do not catalog, some noted that only monthly statistics are tallied, and some responded that their work was evaluated on the basis of a combination of quality and quantity.

A total of 51.0 percent of professional respondents reported that none of their cataloging records were checked or were reviewed only when questions arose. Mohr and Schuneman’s 1997 study also found that a majority (72.0 percent) of professionals doing original cataloging

**Table 6.** Measurement of Productivity

	No.	%
<b>On number of records completed in a given time</b>		
Professionals	38	16.2
Paraprofessionals	57	24.4
Total	95	40.6
<b>On number of errors per record</b>		
Professionals	0	0.0
Paraprofessionals	0	0.0
Total	0	0.0
<b>Not measured quantitatively</b>		
Professionals	65	27.8
Paraprofessionals	49	20.9
Total	114	48.7
<b>Other</b>		
Professionals	15	6.4
Paraprofessionals	10	4.3
Total	25	10.7
<b>Grand Total</b>	<b>234</b>	<b>100.0</b>

reported that any revision ceased with their training.<sup>25</sup> However, one respondent to this survey noted, “There are many instances in which a professional cataloger will seek help and advice from a staff cataloger. [This] is only able to work because the professional catalogers themselves value the staff.” Another respondent described how this lack of review could cause problems:

While staff catalogers at my library have their copy cataloging work revised and evaluated on a near-annual basis, our professional catalogers do not undergo a similarly rigorous revision process on any particular basis—I understand this, given our levels of education. On the other hand, I have frequently encountered cataloging errors (effecting [*sic*] precedent setting for specific subjects) made by professional staff, and have had to request call number changes to correct them. Therefore, I believe it may be helpful if there were some system in place to evaluate the cataloging of professional staff from time to time just to make sure we’re all on the same page procedurally—it often feels that we are not, particularly in specific subject areas, some of which are our premier collections (not good!).

In addition to the quality of work, survey respondents also were asked about the quantity of their work or productivity. Some commented that while monthly statistics were

kept, these statistics were not used to judge productivity. Benaud, Bordeianu, and Hanson noted, "Catalogers, who rightly believe that they perform a professional job, might feel that quantifying the output of their work diminishes the work and turns it into a product," or that quantification deprofessionalizes cataloging.<sup>26</sup> However if quantification is necessary, Foster said, "The department head . . . must set specific production goals, [such as] a 10 percent increase . . . but never simply 'more production.'"<sup>27</sup>

### Perceptions about Cataloging Work

Question 14 explored professional and paraprofessional catalogers' perceptions about their work. Respondents were asked to use a five-point Likert scale measuring the extent to which they agreed or disagreed with several statements. Responses are provided in appendix B. This question also gave the option of adding comments.

#### Decision-Making Responsibilities

Two statements considered professionals' freedom in decision making and the extent of their responsibility. Of the 105 professional respondents, 89 respondents (84.8 percent) agreed or strongly agreed that being a professional cataloger allows more freedom in decision making; 93 (88.6 percent) of these 105 agreed or strongly agreed that they are given greater responsibility.

Many respondents, both professional and paraprofessional, commented that while paraprofessional catalogers do not make the kinds of big-picture administrative and policy decisions that professional catalogers do with respect to cataloging work, no difference should exist between the two. Some also indicated that the only difference between paraprofessional and professional catalogers at their institution is that the professional catalogers are asked to do more than just cataloging but the cataloging work done by each group was the same. A few expressed a desire for more blending between paraprofessional and professional catalogers' duties to better reflect the experience and skill of the paraprofessionals in the institution.

Both professional and paraprofessional respondents remarked that professional catalogers either perform administrative roles or are required to serve on committees, attend conferences, and other types of professional service, and therefore no longer do much, if any, actual cataloging. Some saw this as negative, putting a burden without sufficient compensation on the paraprofessional catalogers, and some even expressed frustration that while the professional catalogers at their institution do not participate in the normal cataloging workflow, they make decisions that affect that workflow, often without sufficient information. Others pointed out that while the

professional catalogers might not be doing the same volume of cataloging, part of their role is to represent their library at meetings and to teach both library users and administrators about efficient use of the catalog and to promote the importance of high-quality cataloging.

#### Level of Cataloging

Survey statements about level of cataloging addressed complex, copy, and original cataloging. One hundred (87.7 percent) of 114 professional respondents agreed or strongly agreed that professional catalogers should handle more complex cataloging. In contrast, 59 (56.2 percent) of 105 paraprofessional respondents agreed or strongly agreed that professional catalogers should handle more complex cataloging. Responses to the statement about whether paraprofessional catalogers should handle less complex cataloging were more divided: 66 (58.4 percent) of 113 professional respondents agreed or strongly agreed, while only 33 (28.7 percent) of 115 paraprofessional respondents agreed or strongly agreed. As to whether paraprofessionals should only handle copy cataloging, 81 (69.2 percent) of 117 professional respondents and 96 (82.1 percent) of 117 paraprofessional respondents disagreed or strongly disagreed; 64 (53.8 percent) of 119 professional respondents and 89 (79.5 percent) of 112 paraprofessional respondents disagreed or strongly disagreed that only professional catalogers should handle original cataloging.

A majority of comments on the questions about copy, complex, and original cataloging indicated that paraprofessional catalogers often do complex cataloging, including creating original records, cataloging materials requiring foreign language proficiency, performing authority control, assigning call numbers, cataloging electronic formats, and creating digital metadata. Many indicated that the paraprofessional staff at their institution had more cataloging experience than the professional catalogers, who tended to be recent library school graduates.

#### Perceptions about Value of Work

Several statements explored perceptions about the value of work—is the work seen as important, undervalued, or overvalued? Both professional and paraprofessional catalogers agreed or strongly agreed that paraprofessional catalogers do important work: 114 (96.6 percent) of 118 professional catalogers agreed or strongly agreed, and 110 (94.0 percent) of 117 paraprofessionals agreed or strongly agreed. Despite a perception that paraprofessionals do important work, both groups felt that paraprofessional catalogers are often undervalued. Ninety-one (77.1 percent) of 118 professional catalogers agreed or strongly agreed that paraprofessionals are often undervalued, and 92 (78.6 percent) of 117

paraprofessionals felt that they were often undervalued.

When considering the importance of professional catalogers' work, 112 (94.9 percent) of 118 professional respondents agreed or strongly agreed that professional catalogers do important work, and 98 (89.1 percent) of 110 paraprofessionals agreed or strongly agreed with this statement. Perspectives on whether professional catalogers are undervalued differed in the two groups. Eighty-six (72.9 percent) of 118 professional catalogers agreed or strongly agreed that they are often undervalued, whereas only 36 (33.6 percent) of 107 paraprofessionals agreed or strongly agreed that professional catalogers are often undervalued.

Many paraprofessional respondents commented that their contributions are not rewarded sufficiently. The comments suggested that staff morale is affected as much by the personal relationships and informal culture of their department as by the policies of their institution. Some mentioned departments in which paraprofessional contributions were clearly valued by the professional catalogers, while others commented that they are not given credit for what they feel they are capable of doing. One person said, "Our supervisors appreciate our work, but the administration sees us as cheap alternatives to professionals. We are not properly compensated, and the type of work we do is now undervalued, because professionals no longer do the bulk of it." Others indicated that supervisors' attitude toward copy catalogers is the problem, with one stating, "Copy catalogers have the skills and abilities to work beyond a copy cataloging capacity, but they aren't given the chance. We are expected to just be cogs, push things across our desks quickly, and not think about it."

Several respondents, both professional and paraprofessional, commented that cataloging tends to be undervalued by the library community as a whole. However, the data suggest that close to half (43.5 percent) of the paraprofessional respondents believe that professional catalogers are often overvalued; 47 of 108 paraprofessional respondents agreed or strongly agreed with this statement. Comments expanded on this perception, noting that the work of professional catalogers is overvalued within the cataloging community, the tendency being to view professional work as more valuable than paraprofessional work, even when the tasks are the same.

Individually, paraprofessional respondents felt that their work is valued but believed that cataloging, as a whole, is undervalued. Respondents also pointed out that automation has led to the devaluing of cataloging as a whole, particularly since, as one stated, "systems fail both to display the results of our work in user friendly ways and to function as one might wish."

### Research and Service

Respondents were asked about any research and service

requirements for their current position; data are reported in table 7. Among the professional librarians, 51 (42.5 percent) of 120 reported that research and publication are required for advancement. No paraprofessionals reported that research and publication are required for advancement, although 16 (13.7 percent) of 117 paraprofessionals noted that research is encouraged but not required.

Expectations for service were equally diverse across the two respondent groups. Eighty professionals (66.7 percent) of 120 respondents have service as a requirement for advancement and 5 (4.3 percent) of 116 paraprofessionals have a service requirement; 33 (27.5 percent) of 120 professionals reported that service is encouraged, compared to 50 (43.1 percent) of 116 paraprofessionals. For those that have an expectation of service, the type of service varies: 156 (66.1 percent) of 236 total respondents serve on library committees, 60 (25.4 percent) serve on university committees, 48 (20.3 percent) serve on state committees, and 75 (31.8 percent) serve on national committees.

The survey asked about frequency of attending conferences. Sixteen of the 120 professional respondents (13.3 percent) attend no conferences, 62 professionals (51.7 percent) attend one to two conferences, and 42 professionals (35 percent) attend three or more conferences. Among the 116 responding paraprofessionals, the majority (76 or 65.5 percent) attend no conferences, 36 (31.1 percent) attend one to two conferences, and 4 (3.5 percent) attend three or more conferences.

One of the goals of this research was to identify any differences between professional and paraprofessional catalogers. These differences were especially apparent in responses to the questions regarding research and service. As one respondent noted in the comments section, "In our institution, the only difference between the highest level of staff cataloger and professional cataloger is that the professional cataloger is expected to fulfill other requirements associated with librarian tenure and rank."

The findings show that research and service activities are a major difference between professionals and paraprofessionals. However, as noted above, 43.1 percent of paraprofessionals reported that service is encouraged by their institutions. This trend also is reported in the literature; Kao noted that "library technicians are actively involved in professional library activities."<sup>28</sup> This survey noted that 15.1 percent of paraprofessional respondents are active in committees outside of their library. Goodson did not state that service is expected, but she considered it important and noted assisting other departments and attending and contributing in committee meetings are criteria by which a paraprofessional could be evaluated.<sup>29</sup> One respondent noted that despite having an MLIS, he or she preferred to stay in a paraprofessional position "to avoid professional development responsibilities that extend beyond just cataloging."

## Problems

As with any project, one finds room for improvement after the fact, especially with a survey instrument. Although this survey was pretested, some confusion was apparent over the meaning of terms. For example, although the authors explained the meaning of “professional” and “paraprofessional” for this survey in its introduction, some respondents still expressed uncertainty about how to respond. More extensive pretesting with a larger test group likely would have identified this and other problems with terms.

Although some questions were geared specifically to professionals or paraprofessionals, the survey instrument was unable to limit who answered which question. This allowed paraprofessionals to answer questions intended for professionals and vice versa. A more effective instrument would automatically direct respondents to those questions directed to their type of employee class. Another approach would be to create a separate survey instrument for each group. Because respondents identified their class, the authors were able to address this problem when compiling and analyzing the data.

Three statements in survey question 14 where respondents were asked to report the extent to which they disagreed (or not) lacked clarity and resulted in unclear and ambiguous results. The problem statements were

- (14.c) Professional catalogers should have more responsibilities.
- (14.d) Staff catalogers should have fewer responsibilities.
- (14.q) I feel that being a staff cataloger allows me to do my job without any greater responsibility.

Responses have not been reported in this paper. The authors' intent in 14.c and 14.d was to determine whether respondents thought professional catalogers should have more responsibilities than paraprofessionals and whether staff (i.e., paraprofessional) catalogers should have fewer responsibilities than professional catalogers. Because this comparison was missing from the statement, the responses were not meaningful. Statement 14.q presented a similar lack of clarity.

## Suggestions for Future Research

In addition to areas of improvement, this research could be expanded. This survey reports the perceptions of professional and paraprofessional catalogers in ARL member libraries. Comparing these findings with those gathered from catalogers in different types and sizes of libraries might reveal differences based on the type and size of

**Table 7.** Research, Publication, and Services Expectations

Research and Publication Expectations										
	None required		Encouraged, but not required		Required for advancement					
	No.	%	No.	%	No.	%				
Professionals <i>N</i> = 120	30	25.0	39	32.5	51	42.5				
Paraprofessionals <i>N</i> = 117	101	86.3	16	13.7	0	0.0				
Service Expectations										
	None required		Encouraged, but not required		Required for advancement					
	No.	%	No.	%	No.	%				
Professionals <i>N</i> = 120	7	5.8	33	27.5	80	66.7				
Paraprofessionals <i>N</i> = 116	61	52.6	50	43.1	5	4.3				
If Service Expected, Type of Service (Multiple answers possible)										
	Library committees		University committees		State committees		National committees			
	No.	%	No.	%	No.	%	No.	%		
Professionals <i>N</i> = 107	103	96.3	42	39.3	42	39.3	73	68.2		
Paraprofessionals <i>N</i> = 53	53	100.0	18	34.0	6	11.3	2	3.8		
Number of Conferences Attended Annually										
	0		1		2		3		4 or more	
	No.	%	No.	%	No.	%	No.	%	No.	%
Professionals <i>N</i> = 120	16	13.3	17	14.2	45	37.5	31	25.8	11	9.2
Paraprofessionals <i>N</i> = 116	76	65.5	27	23.3	9	7.8	3	2.6	1	0.9

library. One respondent in particular noted that the disparities between professionals and paraprofessionals can be different depending on the size of the institution and its hierarchy. Second, many respondents commented on outsourcing and its effect on cataloging, especially copy cataloging. This could be another related area for research. Finally, many of this survey's comments from paraprofessionals dealt with salary and compensation, an issue that was not covered in the survey questions. A study comparing salaries across positions, types of libraries, and geographic regions could be useful.

### Conclusion

This study investigated how professional and paraprofessional catalogers view their work, how their work is evaluated, and how they perceive the value assigned to their work. With regard to how catalogers view their work, the findings show that the majority of both professional and paraprofessional catalogers feel that paraprofessionals can and should do complex and original cataloging. Comments in the survey also revealed that both groups feel that there is not or should not be any difference in the cataloging work done by professionals and paraprofessionals. Survey results found that the distinction between professional and paraprofessional catalogers arises from the activities beyond cataloging done by professionals, such as administrative work, service on committees, and research.

The majority of professional catalogers reported that their cataloging work is seldom checked after an initial training period, while the majority of paraprofessionals undergo continuous evaluation of their work. Comments in the survey indicate that periodic checking of everyone's work, regardless of position, may be required to ensure consistency across all areas.

With regard to the value of work, the majority of both professional and paraprofessional catalogers felt that paraprofessionals' work is important but that it is undervalued. While both groups felt that professionals' work is also important, a majority of professional catalogers feel that their work is undervalued, while more paraprofessionals feel that professionals' work is overvalued. These data reflect opinions expressed in comments in the survey, which indicate that catalogers feel that their work is undervalued by the library community as a whole, while professionals' work is overvalued within the cataloging community as it is seen as having more value even when the tasks are the same as those performed by paraprofessionals.

This study suggests a need in libraries for clarity in how responsibilities are defined and assigned, and how expectations are articulated, so that professional and paraprofessional catalogers better understand their roles and

value to the organization. The cataloging responsibilities of both groups now widely overlap, and the distinction between professionals and paraprofessionals lies more in the degree to which they participate in activities beyond cataloging. However, as professionals are increasingly pulled into areas outside of cataloging, the degree to which paraprofessionals are recognized for their added cataloging responsibilities and expertise varies from institution to institution.

While not all paraprofessionals engage in more complex cataloging work, those who do can benefit their institutions by helping to reduce backlogs and reduce the cataloging workload of professional catalogers. Paraprofessionals in turn benefit from the opportunity to expand their skills and expertise. As professional catalogers are increasingly called on to perform tasks beyond cataloging, paraprofessional work is becoming especially valuable. Furthermore, as library budgets decrease, libraries may need to have paraprofessionals perform more complex cataloging. The activities of professional catalogers beyond cataloging have become increasingly important. As budgets decrease and administrators look for ways to cut costs, the responsibility falls on the professional catalogers to make the case for cataloging as a necessary function of the library's operations and services and to tie these functions to the library's goal of providing access to information.

The authors suggest that the general perception of both professional and paraprofessional catalogers by noncatalogers needs to be improved through advocacy by all catalogers to promote their purpose and importance. Just as professional catalogers need to advocate for the value of cataloging as a whole, paraprofessionals may need to make a stronger case to their administrators about the value of the important work they do.

The authors recommend that the library profession as a whole reach consensus about the level of work paraprofessionals should do and how they should be compensated. The overlap in cataloging activities between professional and paraprofessional catalogers suggests that regardless of title, catalogers performing complex cataloging should be recognized for their expertise whether through changes in job titles or classifications or more informal means. Furthermore, both groups should be given access to the training and education needed to understand both the theory and the practice of complex and original cataloging. The literature has shown a long-standing increase in the scope and importance of paraprofessional cataloging, and this change has only further increased in an era of tightening budgets. The number of paraprofessionals engaged and interested in higher-level cataloging work makes them vital contributors to the profession as a whole, and they deserve recognition for that contribution. By providing a snapshot of cataloging work in the early twenty-first

century, the authors have provided a baseline from which individual catalogers and the community as a whole can move forward.

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## Appendix A. Survey: What is a “Professional” Cataloger?

Thank you for agreeing to participate in our survey. Your participation in this survey is completely voluntary, but we earnestly request and will very much appreciate your assistance.

With the reduction in funding and staff for libraries as a whole, cataloging departments must rely more heavily on staff to perform duties historically held for professional librarians. What then makes a professional cataloger different from a staff cataloger? The information gathered from this survey will be analyzed to assess general perceptions in the profession of the differences between professional and staff catalogers, and the results will be published. All information gathered from this survey will remain confidential, and all subjects remain anonymous.

For the purposes of this survey, “professional” refers to a person holding an MLS degree, working in a position that requires an MLS degree. This position could also be “faculty” or some equivalent. “Staff” refers to an individual working in a library position that does *not* require an MLS. This position could also be “civil service,” “support staff,” “paraprofessional,” etc.

Please contact Beth Cox with any questions about the survey or the research project.

1. What type of library position do you currently hold?
  - Professional librarian or equivalent
  - Staff position or equivalent
  - Administrative Professional (A/P) position
  - Student position
  - Not currently working in a library
2. Have you previously held a professional librarian position or equivalent?
  - Yes
  - No
3. Have you previously held a staff position or equivalent in a library?
  - Yes
  - No
4. Have you previously held an Administrative/Professional (A/P) position in a library?
  - Yes
  - No
5. Have you previously held a student position in a library?
  - Yes
  - No
6. In what area of the library do you primarily work? (over 50% of your time)
  - Technical services
  - Public services
  - Special Collections
  - Administration/Business
7. What do your current job duties include? (Please check all that apply.)
  - Cataloging
  - Acquisitions
  - Preservation
  - Serials/Electronic resources
  - Circulation/Reserves
  - Interlibrary loan
  - Reference
  - Collection development/liaison work
  - Special collections
  - Supervision
  - Library administration
  - Other (please describe):

8. What are the research and publication expectations for your position?
  - None required
  - Encouraged, but not required
  - Required for advancement
9. What are the service expectations for your position?
  - None required
  - Encouraged, but not required
  - Required for advancement
10. If your position does include an expectation of service, what type of service opportunities do you participate in? (Please check all that apply.)
  - Library committees
  - University committees
  - State committees
  - National committees
11. How many conferences do you attend per year?
  - 0
  - 1
  - 2
  - 3
  - 4 or more
12. How is your work as a cataloger evaluated?
  - All records checked by a supervisor
  - All records checked by a peer
  - Original records only checked by supervisor
  - Original records only checked by peer
  - Records checked only when I have questions
  - Records checked randomly
  - No records checked
  - Other
13. How is your productivity measured?
  - On number of records completed in a given time period
  - On number of errors per record
  - Not measured quantitatively
  - Other

For the following 17 questions, please choose from a scale of 1 to 5.

1 = Strongly disagree    2 = Disagree    3 = Neutral    4 = Agree    5 = Strongly agree    n/a = Not applicable

14. As a professional cataloger, my work is valued.
15. As a staff cataloger, my work is valued.
16. Professional catalogers should have more responsibilities.
17. Staff catalogers should have fewer responsibilities.
18. Professional catalogers should handle more complex cataloging.
19. Professional catalogers should only handle more complex cataloging.
20. Staff catalogers should handle less complex cataloging.
21. Staff catalogers should only handle copy cataloging.
22. Only professional catalogers should handle original cataloging.
23. Staff catalogers do important work.
24. Staff catalogers are often undervalued.
25. Professional catalogers do important work.
26. Professional catalogers are often undervalued.
27. Professional catalogers are often overvalued.
28. I feel that being a professional cataloger allows me more freedom in decision making.

29. I feel that being a professional cataloger gives me greater responsibility.

30. I feel that being a staff cataloger allows me to do my job without any greater responsibility.

Additional comments:

31. At what type of institution do you work?

- ARL institution
- Other four-year university
- Four-year college
- Community college
- Other

32. What is your gender?

- Male
- Female

33. How old are you?

- 24 or younger
- 25–34
- 35–44
- 45–54
- 55–64
- 65 or older

34. How many total years have you worked in the library profession, in any type of position?

- 0–3
- 4–6
- 7–10
- 11–15
- 16–20
- 21 or more

35. How many years ago did you earn your MLS?

- 0–3
- 4–6
- 7–10
- 11–15
- 16–20
- 21 or more
- I am currently working towards an MLS
- I don't have an MLS

## Appendix B. Responses to Survey Question 14 Reporting Perceptions about Cataloging Work

Professional Respondents	Strongly Disagree		Disagree		Neutral		Agree		Strongly agree	
	No.	%	No.	%	No.	%	No.	%	No.	%
As a professional cataloger, my work is valued. (N=107)	3	2.8	4	3.7	14	13.0	50	47.0	36	33.6
Professional catalogers should handle more complex cataloging. (N=114)	6	5.3	1	0.9	7	6.1	32	28.1	68	59.6
Professional catalogers should only handle more complex cataloging. (N=118)	10	8.5	22	18.6	24	20.3	37	31.4	25	21.1
Staff catalogers* should handle less complex cataloging. (N=113)	13	11.5	14	12.4	20	17.7	44	38.9	22	19.5
Staff catalogers should only handle copy cataloging. (N=117)	28	23.9	53	45.3	11	9.4	13	11.1	12	10.3
Only professional catalogers should handle original cataloging. (N=119)	26	21.8	38	31.9	18	15.1	16	13.4	21	17.6
Staff catalogers do important work. (N=118)	3	2.5	0	0.0	1	0.8	17	14.4	97	82.2
Staff catalogers are often undervalued. (N=118)	4	3.4	10	8.5	13	11.0	39	33.1	52	44.1
Professional catalogers do important work. (N=118)	4	3.4	0	0.0	2	1.7	23	19.5	89	75.4
Professional catalogers are often undervalued. (N=118)	1	0.9	10	8.5	2	1.7	45	38.1	41	34.7
Professional catalogers are often overvalued. (N=119)	33	27.7	52	43.7	21	17.6	6	5.0	8	6.7
I feel that being a professional cataloger allows me more freedom in decision-making. (N=105)	3	2.9	2	1.9	11	10.5	40	38.1	49	46.7
I feel that being a professional cataloger gives me greater responsibility. (N=105)	2	1.9	4	3.8	8	7.6	33	31.4	60	57.1
Paraprofessional Respondents	Strongly Disagree		Disagree		Neutral		Agree		Strongly agree	
	No.	%	No.	%	No.	%	No.	%	No.	%
As a staff cataloger, my work is valued. (N=117)	3	2.6	20	8.5	11	9.4	43	36.8	50	42.7
Professional catalogers should handle more complex cataloging. (N=105)	11	10.5	17	16.2	18	17.1	30	28.6	29	27.6
Professional catalogers should only handle more complex cataloging. (N=107)	19	17.8	28	26.2	25	23.4	22	20.6	13	12.1
Staff catalogers should handle less complex cataloging. (N=115)	30	26.1	35	30.4	17	14.8	26	22.6	7	6.1
Staff catalogers should only handle copy cataloging. (N=117)	67	57.3	29	24.8	13	11.1	4	3.4	4	3.4
Only professional catalogers should handle original cataloging. (N=112)	61	54.5	28	25.0	11	9.8	6	5.4	6	5.4
Staff catalogers do important work. (N=117)	2	1.7	3	2.6	2	1.7	16	13.7	94	80.3
Staff catalogers are often undervalued. (N=117)	5	4.3	9	7.7	11	9.4	24	20.5	68	58.1
Professional catalogers do important work. (N=110)	3	2.7	4	3.6	5	4.5	32	29.1	66	60.0
Professional catalogers are often undervalued. (N=107)	11	10.3	25	23.4	45	32.7	17	25.9	19	17.8
Professional catalogers are often overvalued. (N=108)	7	6.5	24	22.2	30	27.8	23	21.3	24	22.2

\* "Staff cataloger" was used on the survey and is repeated in this appendix. Within the paper, the term "paraprofessional cataloger" is used as a synonym.

# Notes on Operations

## Cataloging E-Books and Vendor Records

### A Case Study at the University of Illinois at Chicago

By Kristin E. Martin and Kavita Mundle

*E-books have become a substantial part of many academic library collections. Catalog records for each e-book title enhance discovery by library users, but cataloging individual books may be impossible when large packages are purchased. Increasingly, libraries are relying on outside sources for their e-book catalog records, which may come from vendors or third-party record services and are frequently included in the price of a subscription. Rather than handling individual items, catalogers find themselves managing and manipulating large sets of catalog records. While dealing with the records in batch is the only practical way to provide access to the large sets, batch processing does bring about a new set of challenges. This paper will explore the challenges of managing Machine-Readable Cataloging (MARC) records for the Springer e-book collection at the University of Illinois at Chicago University Library. It discusses tools and methods to improve record quality while working in a consortial setting. It provides lessons learned, continuing challenges of working with vendor records, and some steps that might help other libraries expedite the process of getting vendor records into the catalog.*

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Submitted December 1, 2009; returned to authors February 3, 2010, with request for revision and resubmission; resubmitted April 4, 2010, reviewed and accepted for publication pending modest revisions; revised and submitted June 9, 2010, and accepted for publication.

This paper is based on a presentation given at the Association for Library Collections and Technical Services Catalog Form and Function Interest Group at the American Library Association Annual Conference in Chicago, July 11, 2009. The authors gratefully acknowledge Helen F. Schmierer, Joan Schuitema, and Dr. Stephen E. Wiberly for their review and constructive critique of this manuscript.

Libraries continue to increase acquisition of e-books. A recent Ebrary survey of 552 libraries of all types around the world found that 88 percent of respondents owned or subscribed to e-books, with 45 percent further stating they provided access to more than ten thousand e-books.<sup>1</sup> Integrating records for the e-books into the catalog has been an important part of facilitating retrieval and access for this growing set of resources. Ever since vendors began offering MARC records for e-book collections as part of their subscription contracts, libraries have been adding them to their catalogs, typically via batch loads. This seemingly straightforward process has brought new challenges for catalogers in terms of the load itself, sharing records in a consortial environment, quality and completeness of record content, and access problems. Despite these challenges, batch loading vendor records is an expedient solution for libraries wishing to provide timely catalog access to e-book collections.

The University of Illinois at Chicago (UIC) Library has been batch loading vendor-supplied Machine-Readable Cataloging (MARC) records for various e-book collections into its local catalog, UICCAT, since 2006. When this paper was first presented, the library had loaded more than 250,000 vendor-supplied e-book records in the library's catalog. Loading records for e-book collections has been challenging because of the varying quality of different vendors' record sets. The UIC Library's ongoing communications with vendors has produced better records

but at the price of effort and time on the part of the UIC Library Catalog Department. The following case study describes the challenges of managing MARC records for the Springer e-book collection the UIC Library received via a consortial purchase of Center for Library Initiatives (CLI), a collaborative program of the Committee of Institutional Cooperation (CIC), which is a consortium of the Big Ten universities plus the University of Chicago. This study describes UIC Library's and the CLI's efforts to improve the quality of these records and may be useful to other libraries grappling with how to manage and improve vendor records for e-book collections.

### Literature Review

This review explores the literature describing how academic libraries are providing access to their large e-book collections through their catalogs, focusing on issues surrounding the addition of vendor-supplied e-book bibliographic records, the batch loading of large record sets, and new developments affecting e-book cataloging. Finding an effective way to provide access to increasing numbers of e-books is an ongoing challenge for libraries. Many academic libraries make their e-book collections searchable through Web-based catalogs or websites. McCall found that nineteen of twenty-one health science libraries provided title-level access to e-books through their websites, and twenty created bibliographic records in their catalogs.<sup>2</sup> Dinkelman and Stacy-Bates's review of Association of Research Libraries (ARL) member libraries showed that 56 percent of ARL library websites had separate pages devoted to e-books, and only 30 percent of library catalogs allowed limiting the search to e-books in a single step.<sup>3</sup> The study recommended that the library websites should include unambiguous descriptions of the contents of e-books, group

e-books by subject, and alert patrons to search for e-book titles in the catalog. Additionally, to make searching less difficult, the study recommended adding a one-step limit option to search e-books in the catalog. A 2008 analysis by Hutton explored how catalogs and websites provide access to open digital collections through library catalogs and websites.<sup>4</sup> When Hutton searched for ten e-book titles from open digital collections in the online catalogs and websites of ten academic libraries, only three of the e-book titles were found in the library catalogs, and none were found on library webpages.

Research by Dillon, Gibbons, and Langston demonstrated that adding bibliographic records to the catalog of university libraries assists users in discovery of and access to e-books and increases their use.<sup>5</sup> Green's study at the University of Surrey found that adding e-book records and URLs to the catalog makes identifying e-book titles easier for students.<sup>6</sup> Research by Armstrong and Lonsdale, Ramirez and Gyszly, and Snowhill also determined that adding bibliographic records increases e-book use.<sup>7</sup> Conversely, Cox reported that a survey on e-books at an Irish university consortium found that 60 percent of the surveyed population accessed e-books through library websites and only 19 percent accessed them through the library catalog.<sup>8</sup> However, most of the studies described here reinforce the concept of the catalog as an important source of information for e-book discovery and access.

Although the integration of e-books with library catalogs and websites or with federated discovery tools offers greater visibility and enhanced access to libraries' e-book collections, cataloging techniques and guidelines are still evolving. Martin suggested that librarians have been slow and reluctant to catalog e-books because e-book cataloging guidelines have been underdeveloped.<sup>9</sup> The literature on e-books provides few examples of effective ways to catalog e-books individually,

an exception being Bothmann's article, which examined functional aspects of cataloging an electronic book.<sup>10</sup> Belanger's survey of library catalogs of thirty higher education libraries in the United Kingdom provided a snapshot of e-book cataloging practices.<sup>11</sup> The study noted variations between surveyed libraries in terms of which e-books were selected to be cataloged and how were they cataloged. Twenty-eight of the thirty libraries surveyed provided some kind of title-level access in their catalog for at least some of their subscription-based collections, four also provided records for free e-books, and two had not cataloged any e-books at the time of survey. Twenty-three of the twenty-eight libraries reported using separate records for print and e-books, and five reported providing access on the same record as print titles. A check of their catalogs revealed that many libraries used both methods when cataloging e-books.

The challenges of managing batch loading of vendor records and controlling record quality appear as important themes in library literature. Several authors identified problems in government document record loads, foreign vendor records in WorldCat, and microform sets. These problems included incorrect choice or form of headings that affect authority control, missing call numbers, missing or duplicate records, typographical errors, and MARC coding errors.<sup>12</sup> Mugridge and Edmunds described their experiences of batch loading vendor record sets to improve access to electronic and microform collections at Penn State University Libraries.<sup>13</sup> They noted that the process involves collaborations between various library units for purchasing, reviewing records, assessing record quality to meet local customization needs, and coordinating record loads and their ongoing maintenance. They observed that as more print materials get digitized and the availability of record sets for large collections become widespread, batch

loading of vendor records will become a significant workflow for libraries.

The literature documents that many challenges affecting vendor records and batch loads for traditional resources also exist for e-books. These issues have come to the forefront for e-books, however, because of the emphasis libraries are now placing on electronic collections. Nelson and O'Neil examined vendor records for e-books and reported that although the initial evaluation of sample vendor records showed high quality, record-load problems existed and included generating unwanted printed orders, causing load-program crashes, and failing to load subject headings.<sup>14</sup> Gedeon and Meyer concluded that vendor records lacked quality and authority control, which created considerable delays in loading records.<sup>15</sup> Sanchez, Fatout, and Howser described in detail how a library identified problems in NetLibrary records and the tools the library used to manipulate the records before batch loading them into the catalog.<sup>16</sup> Mundle described the experiences of adding vendor records at the UIC Library into the catalog.<sup>17</sup> She proposed guidelines for accepting vendor records and described how some e-book collections were cataloged when vendor-supplied catalog records were unavailable. Two 2009 papers provide additional examples of how libraries modify and improve record quality when handling batches of records for electronic resources. Beall detailed the problems and limitations contained within the freely available Mbook records and the steps taken after the records were loaded into the catalog to improve record fullness and access points.<sup>18</sup> Finn described a method to speed authority control processing by using MarcEdit and an external vendor to provide authority control prior to loading the records into the catalog.<sup>19</sup> These studies indicate that the batch loading process requires libraries to make decisions that balance the desire to quickly provide access

through the catalog and the desire to provide the highest quality of records possible.

### New Guidelines and Directions in E-Book Cataloging

During the past few years, organizations have developed guidelines to assist both libraries and vendors in record creation for e-books. In 2006, the Program for Cooperative Cataloging (PCC) developed "The MARC Record Guide for Monograph Aggregator Vendors," which includes recommendations to vendors on how to create MARC records for e-books.<sup>20</sup> The guidelines originally preferred an "electronic reproduction" model, following Library of Congress Rule Interpretation 1.11A, which allows all of the original data of the e-book to remain in the standard MARC fields (such as the 300 note for physical description and 260 field for the publication, distribution, etc.) while information specific to the reproduction is listed separately in a 533 reproduction note.<sup>21</sup> This model works well for preserving information about the book, but led to the creation of multiple records for the same title, each distinguishable only by the reproduction note and URL. Any time a title was offered by more than one vendor, a new record was created for each version, putting duplicate records for the same title in OCLC and in local catalogs. In 2009, to avoid duplication and to bring all equivalent manifestations of the same title under one generic record, the PCC approved the *Provider-Neutral E-Monograph MARC Record Guide*.<sup>22</sup> It brings e-book description guidelines more in line with those for e-journals, which have been described using provider-neutral guidelines since July 2003.<sup>23</sup> At the same time, the PCC revised the *MARC Record Guide for Monograph Aggregator Vendors*.<sup>24</sup> All

vendors are encouraged to use this revised guide when creating or modifying records for their titles. The revisions instruct vendors to create a single bibliographic record to cover all equivalent manifestations of an e-monograph. The *MARC Record Guide* emphasizes recording only fields that apply to all electronic manifestations by removing provider-specific information given in notes or as added entries, eliminating a provider-specific reproduction note in MARC field 533, and clarifying how to record print and e-book International Standard Bibliographic Numbers (ISBNs).

In all, these guidelines should provide for a cleaner and less confusing display of e-book records in the library catalog but will radically change how libraries have to manage their e-book records. Following the previous cataloging guidelines that preferred the reproduction model, catalogers could quickly identify records for a particular vendor set through an added entry for the vendor name, the vendor record number, or other identifier consistent across all records. Working at the record level meant that if content changed, whole records could be deleted—typically a simpler and more automated process than trying to identify and delete portions of a record. The new guidelines mean that library systems need to provide or develop facilities to make batch changes to records, as additions and deletions will be based on fields within records or new holdings rather than entire bibliographic records. The new guidelines also will affect record loads. The same content coming from multiple vendors should have records that are identical, with the exception of the URL. This should encourage more sharing of records by allowing multiple vendors to use the same record for each manifestation of an e-book, rather than each having to create their own record. A unique identifier, such as an OCLC number, across records from different vendors can be used as a match

point to merge records with additional vendor URLs and prevent duplicate records for the same title. In January 2010, OCLC began to implement the provider-neutral guidelines by cleaning up existing e-book records to conform to the new guidelines.<sup>25</sup>

### **Effect on WorldCat Local and E-Book MARC Subscription Services**

During the past two years, some libraries have moved toward relying on WorldCat as a discovery tool and local catalog through the WorldCat Local service. This may accelerate with the new WorldCat Local Quick Start service offered by OCLC.<sup>26</sup> Currently, records for e-books received from vendors frequently do not contain OCLC numbers or have the OCLC number for the record describing the print version. If WorldCat becomes a library's catalog, having holdings attached to the correct record will be the way users know their library has access to the content. Even if libraries do not use WorldCat Local, the open worldcat.org on the Web that allows users to find library content through Web searches, having holdings attached to the correct record is important. A service such as the OCLC e-sericals holdings service might be needed for e-books. One can hope that, as more e-content is available simultaneously with or even before the print version and as the new provider-neutral record guidelines are implemented, libraries will have easy ways to set proper holdings in WorldCat, regardless of whether the records were obtained directly from OCLC or through batch-loading sets of vendors records.

E-book cataloging has lagged behind e-journal cataloging in the availability of subscription services for MARC records. These services, such as Serials Solutions 360 MARC and ExLibris MARCIt! provide a way for libraries to rely on third-party vendors to keep track of their e-journal holdings for them.<sup>27</sup> Relying on holdings

data provided through the library subscriptions, these services provide records for all e-journals to which a library subscribes with a link contained within each bibliographic record that takes the user to the aggregated electronic holdings for that journal. Such services have proven especially beneficial for e-journals, where a library may receive the same title through multiple databases, and where aggregator databases are constantly adjusting content by switching titles and changing dates of coverage. As the number of e-books increases, and as libraries both purchase and subscribe to large sets of e-books, the potential for overlap of titles between databases and the need to keep track of multiple holdings increases. Recently Serials Solutions expanded its services to e-books, offering both holdings coverage and record service for e-books.<sup>28</sup> Using an e-book record service would help libraries both track and maintain access to their e-book collections. In addition, it would simplify the transition to the provider-neutral record model by having only one record for content offered through multiple providers, instead of libraries having to coordinate matches and overlays of records for the same content from different vendors. Using a record service for e-books involves a trade-off: increased simplicity for the library, which now only has to manage records from a single source, versus a potential loss of quality since the most complete records may not be available through the service. As the number of both e-books available and the vendors offering them continue to increase, e-book record services will mature and may become increasingly attractive.

### **Integration of Springer E-books at the UIC Library**

The case study presented in this paper describes how the UIC Library, working with the CIC CLI (hereafter CLI), evaluated and improved vendor-supplied

MARC records for Springer e-books and then worked with the Consortium of Academic and Research Libraries of Illinois (CARLI) to load those records into the UIC Library catalog. UIC is an urban land-grant university with an enrollment of more than twenty-five thousand students. The UIC Library, a member of the ARL, has three locations in Chicago: the Richard J. Daley Library, the Science Library, and the Library for the Health Sciences, which includes three branch libraries in Urbana, Rockford, and Peoria. The combined collection consists of more than 2.2 million volumes, 50,000 e-journal titles, and more than 250,000 e-books. The UIC Library is a member of the CLI and CARLI, which has 153 member libraries in the state of Illinois. Seventy-six CARLI members participate in I-Share, the consortial union catalog. The UIC Library works through these consortia to explore and realize opportunities for collaboration and shared acquisition of electronic resources.

As a part of expanding consortial adoption of e-book content, the CLI, in partnership with Ingram Digital and Springer Science and Business Media, purchased access to all English-language e-books from Springer from 2005 through 2010, providing access to approximately twelve thousand titles in 2008 and ongoing access to new titles as published.<sup>29</sup> The CLI's agreement with Springer and Ingram expanded availability of e-book content to all CLI member libraries and gave affiliated users access to the set of Springer e-books hosted on two platforms. The same titles can be accessed both on the publisher's site, SpringerLink, and on MyiLibrary, Ingram's e-content aggregation platform.

### **CARLI and I-Share Consortial Environment**

Although CARLI was not directly involved in this particular purchase of e-books or the subsequent review of

the MARC records, an understanding of the CARLI environment is important because it influences how the UIC Library manages vendor records. CARLI maintains separate databases for each of the (currently) seventy-six CARLI Institutions, including the UIC Library, which participate in the consortial union catalog, I-Share. The content of these databases is then combined and loaded into I-Share. Both the local catalogs and I-Share use the Voyager integrated library system (ILS), an Ex Libris product. Although CARLI manages the technical infrastructure, member libraries are responsible for the content of the records in their individual databases, including performing any authority control work. All additions, changes, and deletions to each library's records are fed into the I-Share database through a nightly updating process. CARLI uses match points and ranking algorithms to add and delete holdings to existing bibliographic records and to determine if existing bibliographic records should be overlaid or new records should be added to the I-Share database. CARLI's preferred match point is the OCLC number or other unique vendor number.

The central CARLI office is responsible for batch loading bibliographic records into member libraries' catalogs, which are then automatically loaded into the I-Share database through the nightly updating process. CARLI handles cataloging updates from all seventy-six member libraries. As more libraries within I-Share request batch load, the limitations on the throughput of records can create delays, which can range from only a few days for smaller loads to weeks or even months for larger loads. Additionally, the current Voyager software does not offer inherent batch record modification options that would allow for large-scale modifications within Voyager. Thus batches of records that might be extracted and modified with third-party software and then reloaded into

the local database and I-Share become caught in the same cycle of load limitations. In most circumstances, records need to be accessed individually to be modified or updated.

### Strategies for Record Review

Following the CLI purchase of the Springer content, Ingram offered to provide record sets for all the titles included under the agreement, which provided titles with imprint years from 2008 through 2010 and backlist titles from 2005 through 2007. Records could be downloaded from Ingram's FTP server and loaded into the CLI libraries' catalogs. Early samples of the records from Ingram indicated potential overlay problems, issues with data quality, incorrect use of MARC fields, broken or missing links, and confusion over content coverage. Some CLI libraries developed alternate methods to obtain and load records into their catalogs. Another group of CLI libraries, including the UIC Library, decided to pool their resources and work together to improve the records.

Performing a systematic review of the Ingram-provided record set was important for three reasons. First, the group of CLI libraries wanted to avoid duplication of effort, which would occur if each library individually cleaned up problems in the records. Second, the libraries were interested in establishing a pattern of working with vendors to encourage them to provide usable records as part of their e-book access service. Third, the libraries wanted to have the records as load-ready as possible—records that would require little additional adjustment or manipulation. Additionally, the UIC Library's throughput issues in the CARLI/Voyager environment encouraged the library to make all changes to the records before they were loaded. Because the records would be loaded into the I-Share consortial catalog, the UIC Library wanted to avoid having improperly formed

or ambiguous identifying numbers in the record because these could cause the records to overlay existing records for different titles, thus creating inappropriate holdings for other libraries in the I-Share catalog.

While all the libraries were examining their options for getting records for the Springer titles, the head of the Catalog Department at the UIC Library tried to coordinate efforts. She led a joint effort of the group of CLI libraries to evaluate small samples of records during the early months of 2008, noting the problems and communicating with Ingram through several iterations. As the process evolved, a staff member from the CLI central office became the primary point of contact to represent the interests of the group of CLI libraries. In October 2008, the CLI central office created an electronic discussion list specifically to coordinate evaluation efforts between the group of CLI libraries, with the intention that this list would continue to be a forum to discuss MARC records for consortial purchases in the future. At this point, the head of the Catalog Department at the UIC Library delegated responsibility for record evaluation and communication of issues to the authors of this paper, who represented the UIC Library on the discussion list. The authors performed a systematic review of the sample records sets made available by Ingram (see "Analysis of the Records" below) and shared the results with the representative of the CLI member libraries. Other libraries tested the records and shared their comments and questions through the discussion list and a conference call coordinated by the CLI representative. Review occurred as new record sets were made available, with new problems reported and addressed as they became apparent. Finally, in December 2008 the CLI received a replacement set of records to load, which was complete with all of the records for the Springer titles that Ingram had created to date. After

working with CARLI, the UIC Library was able to have the records loaded in March 2009.

### Challenges and Opportunities in Consortial Record Review

While some aspects of batch loading records are unique to the UIC Library's circumstances, others may be applicable to libraries working together with a vendor to obtain sets of records. The CLI libraries that chose to work together were able to leverage the power of the consortium's unified voice to encourage Ingram to address problems and improve record quality. The CLI discussion list provided a forum for the libraries to share their questions and concerns about the records and streamlined communications with Ingram by providing a single point of contact through the CLI representative. Lacking in the process, however, was a concerted effort to agree on the most important changes or to rank changes in order of importance; problems were simply communicated to Ingram as they were identified.

The consortial review process developed and evolved in response both to the needs and requests of the member libraries and to responses from the vendor. Early in the process, the CLI libraries discussed forming a core working group to channel information to other participating libraries and possibly having one library evaluate, modify, and load the records and then distribute the modified and tested set to the other libraries. The libraries' goals had to be scaled back because of personnel and organizational changes that delayed vendor responses. As a result, the libraries ended up testing and evaluating the records simultaneously and sharing evaluation results with each other through the discussion list. These findings were ultimately combined and shared with Ingram. Because Ingram provided several record sets that had to be reviewed, the timeline for the complete record

set was pushed back. Consequently, libraries that were under pressure to quickly load records did not meet their goals. As time went on, more libraries made independent decisions about the modifications needed and how best to represent the Springer titles in their respective catalogs. Some chose to look for records outside of Ingram; others continued to work together with Ingram to enhance the records.

### Analysis of the Records

The authors, both librarians with expertise in e-resources cataloging, performed a systematic review of the records and identified a number of issues using simple measures. MarcEdit (<http://people.oregonstate.edu/~reese/marcedit>), developed by Terry Reese at Washington State University and regularly used by the UIC Library, was an effective tool for reviewing and revising batch records. Analyzing the records required an understanding of MARC standards and current national and local e-book cataloging guidelines. The UIC Library's database specialist who manages batch loads worked with CARLI's database management staff to troubleshoot any load problems.

The MarcEdit field-count tool provided a list of all MARC tags in use in the record set. The authors examined the field list for any unusual MARC tags or strange numbers. Once the unusual fields or anomalies in the records were identified, their contents could be exported to a tab-delimited file for further examination in a spreadsheet. By manipulating and sorting the information from the records and viewing it in tabular form, the authors were able to identify several types of problems. Simple sorting identified likely problem records. For example, sorts on the date of publication in the 008 field highlighted records with an unusual publication date. Sorting by title identified cases where the

same record was used for more than one e-book (a problem with individual volumes in multivolume sets). The authors reported all problems found in the Springer record sets to the CLI discussion list.

### Types of Problems Found

The problems in the records can be classed into three categories: access issues, load issues, and record-quality issues. Access issues prevented users from accessing the e-book, load issues prevented the records from being loaded into the catalog, and record-quality issues hampered users' ability to locate the records in the catalog or presented confusing information. The access and load issues were the most pressing problems because Ingram needed to address them before the records could be loaded and content could be accessed. Record-quality issues were more enduring and difficult to resolve. Although some problems were specific to the Springer e-book records, many can be applied generally to vendor e-book records and, even more broadly, to vendor records. Appendix A summarizes the problems discovered by the UIC Library and the actions taken by both the library and Ingram to correct them.

The first category of problems, access issues, prevented users from using the catalog record to access the resource. The most obvious access issue was missing or broken links, which were identified in many records by the UIC Library and other CLI libraries. All records were supposed to contain two links: one to the title on the SpringerLink platform and one to the title on the MyiLibrary platform. Review of the 856 MARC field (Electronic Location and Access) revealed that a number of records linked solely to MyiLibrary and others that had an incomplete SpringerLink link. Some records also contained broken MyiLibrary links. Without a good way to systematically check links,

the authors were able to find these only through spot checks. Fortunately, other CLI libraries reviewing the records also identified these problems. Ingram quickly corrected its own link problems and worked with Springer to correct the rest.

Another serious access issue involved German-language titles and demonstrates the challenge of maintaining control over the content of e-book packages. Although the original contract with Ingram was for only the English-language collections, the record sets provided by Ingram contained records for German-language titles as well. The URLs to the MyiLibrary platform provided access to the German-language titles, but links to the SpringerLink platform denied access to the content. Although access to the German-language titles was not supposed to be part of the original contract, Ingram assured the CLI libraries that once the content was available through MyiLibrary, the libraries were entitled to access it through the length of the contract. Access to the content would not be provided on the SpringerLink platform. The UIC Library sorted the records using the language code in the 008 (Fixed-Length Data Elements) field and removed the SpringerLink information from the German-language records, a service that Ingram later provided.

A third important access issue relates to obtaining records for older content. The agreement with Springer provided access to back volumes of book series from 1997 through 2005, but that content was available only on SpringerLink and not MyiLibrary. Ingram did not provide records for those volumes and has no plans to do so.

Load issues affected the UIC Library's ability to have CARLI load the records into UICCAT and I-Share. The most important issue that needed to be addressed was the proper formulation of the 001 and 003 MARC

fields (Control Number and Control Number Identifier, respectively). Within the Voyager system, the 001 and 003 MARC fields combine to create a 035 system number, which is used as a match point for record overlays upon load. An improperly formed or duplicate 035 may create load problems by immediately overlaying a record upon load or by being overlaid in the future with another record, a particular problem in the I-Share union catalog, which maintains holdings for seventy-six libraries. Holdings for some libraries would be attached to the wrong record and other resources would no longer have records in the catalog.

Other match problems hampered loading. Initially, many of the records contained OCLC numbers for print versions of the books, both in the 035 and 019 fields, a potential overlay hazard, particularly in the I-Share catalog. While the OCLC number can serve as an important record identifier, if the records were derived from print or other sources, the OCLC number would not be correct for the records representing electronic resources. Additionally, ISBNs recorded in the records proved confusing and would lead to overlay problems should libraries try to match on ISBN. The print ISBN might be repeated in both the 020 ISBN field and the 776 \$z (Additional Physical Form Entry) field, or it might exist in only one of the fields. Ingram also assigned a unique number for the version of the e-book on MyiLibrary, and this was initially formulated as an ISBN and placed in the 020. Ingram moved it to the 024 (Other Standard Identifier) field, but the UIC Library decided to strip out all 024s from the record because this served as a match point for the UIC Library's WorldCat Cataloging Partners record delivery service and also could have created overlay issues. Ingram removed this number from later batches of records. Some confusion regarding print and e-book ISBNs remains, though this is

not unique to the Springer e-books. Finally, problems with character encoding caused selected records to fail to load. Ingram addressed most of these issues, but Voyager still rejected a small handful of records, mostly in German-language titles.

Record-quality issues do not present record-loading problems or directly prevent access, but they do inhibit access by confusing the user or making the records difficult to retrieve in the catalog. Some improvements in record quality were simple, such as removing a number of extraneous and no longer relevant fields and notes in the records that were revealed through the MARC field count tool in MarcEdit. These included the 852 (Location) and 049 (Local Holdings) fields for local notes, 300 subfield e (Physical Description) notes for accompanying CD-ROMs, and 530 (Additional Physical Form) notes with "Also issued online." The UIC Library removed the extraneous and misleading fields from the records and requested that Ingram provide that service in the future.

The authors also discovered more serious quality issues with some records, e.g., the "see from" reference forms were used as access points instead of the authorized forms of headings and sets were treated inconsistently. After loading the initial batch of records, authority reports identified many records using the "see from" reference form of access points. The UIC Library corrected name, series, and subject headings on the basis of the Voyager authority reports but has not yet systematically reviewed unauthorized forms of names, titles, and subjects that were in the records. These changes added to the time that catalogers devoted to clean-up work after the batch load of the Springer records.

The second major issue in record quality hampers user access to multivolume sets. For example, Springer publishes the multivolume set *The Handbook of Environmental Chemistry*, and within each numbered

volume is a set of lettered and individually titled volumes. For example, volume 5, *Water Pollution*, has several individually lettered and titled volumes. Libraries handling this title in print would have the choice of analyzing each volume, attaching the volumes to a set record, or a combination of both. Although the new provider-neutral guidelines recommend a single record for an entire set, handling each volume for multi-volume e-books individually frequently proves to be the most practical method for the vendor. Unfortunately, treatment of individual volumes has been inconsistent both on the e-book platforms and in the records provided by Ingram. For example, one record describing water pollution only provides a link to volume 5F, *Environmental Impact Assessment of Recycled Wastes on Surface and Ground Water*, and another only provides a link to volume 5P, *The Caspian Sea Environment*. These volumes are not described individually. This is confusing to the user, and identifying these problem sets without reviewing each individual record and comparing it to the e-book is difficult. The problem of describing and providing access to individual volumes in multivolume sets is not unique to e-book records. However, the problem is more obvious with e-books because accessing content directly from the 856 field creates a disconnect between the content of the work and its description in the record. Exporting record data to a spreadsheet and then looking for duplicate titles can make it easier to identify potential problem titles, but records still have to be examined manually.

#### Current Record Status

Despite setbacks, records from the initial (corrected) load of Springer titles and several major updates are now in the UIC Library's catalog and I-Share. Ingram resolved most of the problems and made many improvements to the

records suggested by the group of CLI libraries. Some issues remain and are worth noting because they may apply to records from other vendors. Problems of the use of "see from" references in names and inconsistent treatment of multi-volume sets are not being addressed at the vendor level, so clean-up work has been duplicated at the CLI libraries. Also, the record set provided by Ingram remains incomplete; it does not include records for the backfiles of the Springer book series. The UIC Library has not performed a complete reconciliation of records to titles that are supposed to be available through the two e-book platforms. The library must assume that it has received records for all titles to which it has access and that all records lead to the correct titles. Currently, the library reacts to problems identified but cannot work proactively. Not knowing the complete content of the twelve thousand titles in the e-book package makes performing a detailed comparison difficult.

Ingram is continuing to supply updates to the records to cover titles published since the initial load of records. Although the provider-neutral guidelines for e-books have become available, at present the authors are not aware of any Ingram plans to convert the Springer records to provider-neutral records. This may be in part because the contract between Ingram and Springer is set to expire at the end of 2010, and Springer will no longer offer content through MyiLibrary. At that time, Ingram will discontinue supplying MARC records. The UIC Library continues to load new records from Ingram for the Springer titles as they become available and is investigating other options for obtaining records for the Springer content.

#### Conclusion and Lessons Learned

The UIC Library's experiences with

vendor e-book records serve both as case study and cautionary tale. The methods used to find problems with records and to identify the types of problems by categories may be of use to other libraries working with vendor-supplied records. The authors believe that working with the CLI and the vendor to improve the records before receiving them was the most productive route to quality data in the catalog. Examination of the process reveals both the power and the difficulty of working consortially with a vendor to improve the records. Without the weight of the CLI, the records might not have been improved as much as they were, but coordinating communication between the different parties added a complication. Additionally, while information sharing between the CLI libraries helped improve the records, the consortial work did not include shared authority clean-up and other record modifications.

Library consortia could pursue additional collaborations and share work to provide quality records for their members. Within the group of CLI libraries working together, more complex options, such as funding one library to send the records to an external authority vendor for processing, were not discussed. Each library was left to make corrections and determine load procedures individually. These more complex options would have been difficult to pursue within the CLI group of libraries because each library maintains its own library catalog and policies regarding electronic resources cataloging. Moreover, the CLI libraries do not have a shared union catalog or even use the same ILS software, which leads to different load requirements for the libraries. Consortia that share an ILS or coordinate both purchases and cataloging policies may have more success in providing these additional services for their members and reducing the workload of individual libraries.

As one CLI member commented,

the “free” records ended up being quite expensive, given the initial work to improve the MARC file and the work done by each library to clean up access points and set records in the local systems. This situation is unlikely to change in the near future. Vendors are attempting to automate record creation as much as possible, and changes at the title-level are improbable. The key for efficiency for both libraries and vendors will be to create a high-quality description of each e-book that can be reused and repurposed by any number of libraries to create quality catalog records.

Although the CLI’s role remained limited to facilitating communication, other library consortia may be able to take on an additional role to modify and enhance records centrally for all member libraries and could prevent duplication of work by individual member libraries. As an example, CARLI has purchased the Springer e-book collections and is providing an enhanced record set and customization options to members purchasing the collection. CARLI has created a new task force to update cataloging guidelines for e-resources and to determine how to implement the new provider-neutral record guidelines. Because all libraries that participate in I-Share use the same ILS software and share a union catalog, the opportunities for the consortium to provide work on behalf of its members may be greater than with the CLI libraries. E-book record subscription services also may be of assistance by providing enhanced records and deduplication of titles for libraries that subscribe to the service and serving as a single point of contact for record issues. The companies running these services have a business goal of supplying bibliographic data to libraries and can solicit participation and cooperation of all of the vendors supplying e-content. The UIC Library has subscribed to the e-books record service offered by Serials Solutions and will

be investigating options for Springer records from both CARLI and Serials Solutions in the future.

The Springer records evaluation process may serve as a model for record improvement for future consortial purchases both by the CLI and other library consortia. Based on the UIC Library’s experience, the following considerations may expedite the process of record evaluation and access to e-resources through the catalog. Libraries should develop record specifications before negotiations with suppliers begin and include them as a part of the negotiations to acquire e-content. This approach will demonstrate the importance of quality bibliographic data to the content providers. Libraries should request a large sample set or full set of records for evaluation. This will reduce the iterative process of evaluating records. Libraries and the vendor should define a mutually acceptable timeline for record improvements. A clear goal and common purpose will help keep the consortium members and the vendor moving the process forward. Within the consortium, libraries should commit to full participation to the extent possible and work with the consortium to share record improvements across all member libraries. Consortia that play a role in managing bibliographic data in addition to shared purchasing may have more resources to provide record enhancements to all member libraries.

The world of e-resources cataloging and the methods that users employ to find e-resources are evolving so rapidly that libraries may serve their users best by providing the best available access to resources (although it may be initially less than ideal) and then working to improve accuracy, completeness, and discoverability after access has been established. Libraries by necessity may need to cede some control over their data as they find more efficient ways to serve their users. Tools to assist in the evaluation,

clean-up, and enhancement of records in batch processes will become even more important. Collaboration with vendors and other libraries to integrate records for e-resources into library catalogs and newer discovery tools will continue to be valuable in making library services more efficient and effective for users.

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## Appendix. Challenges Presented by the Records

Access		
Issues	Actions by the UIC Library	Actions by Ingram
Broken/missing links	Discovered through examination of Microsoft Excel spreadsheet and reported to Ingram	Fixed broken MyiLibrary links; added missing SpringerLink links supplied by Springer
German-language titles included in batch of records (access only available through MyiLibrary)	Divided file in MarcEdit based on 008 language code; removed SpringerLink link in German file; reported to Ingram	Divided full batch of records into German-language and non-German-language titles
Back issues of 1997–2005 book series available on SpringerLink, but not on MyiLibrary	Investigated alternative methods for obtaining catalog records	No records will be provided through Ingram
Load		
Issues	Actions by the UIC Library	Actions by Ingram
Incorrectly formatted 001/003 could lead to accidental overlays	Reported to Ingram	Problem corrected with vendor code in 003 and 001
Incorrect OCLC numbers in 001 and 019	Removed from records and reported to Ingram	Removed OCLC numbers from 001 and 019; OCLC number in 035 may exist for future records
Multiple ISBNs in record: for e-book, print book, and Ingram European Article Number appearing in ISBN format	Reported to Ingram; removed any numbers in 024 field to prevent accidental overlay	Moved publisher-assigned ISBN to 024 and later removed altogether; some confusion over print/electronic ISBN remains
Improperly coded diacritics	Identified and corrected with MarcEdit; reported to Ingram	Most problems addressed; some problems remain with common Russian-language diacritics
Record Quality		
Issues	Actions by the UIC Library	Actions by Ingram
Extraneous fields in records, including 049, misleading 530 notes, 300 fields with \$e for CD-ROM, etc.	Identified through MARC field count in MarcEdit and removed; reported to Ingram	Unwanted fields removed from future batches of records
Invalid forms of names in records	Identified and corrected through authority programs in Voyager; reported to Ingram	No action taken
Inconsistent treatment of multivolume sets (record for set may be used multiple times to represent different volumes)	Problem reported to Ingram; also planning on identification of records through Excel spreadsheet and correction in catalog as needed	No action taken yet

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Compiled by Edward Swanson

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The following types of entries are included:

- a. authors of articles, *reviews*, and letters
- b. titles of articles and of articles about which letters were published
- c. subjects of articles and of books reviewed

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

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