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Editorial

I can tell when a new semester has begun at my institution. Suddenly there is double the amount of traffic, it takes me longer to drive to meetings on other campuses, and it is difficult to find a parking spot, particularly when I have afternoon meetings. I can no longer leave fifteen minutes before a meeting, find a parking spot, and be on time for my meeting. My commute to work also takes longer since there are more cars on the road due to faculty and students returning to school, plus there are school buses for the K-12 students from the surrounding areas. The beginning of each semester also leads to rush orders, reserve orders, and rush cataloging. While semesters change, the demand for technical services work remains steady. I am always surprised when people ask if I am employed for twelve months (they may think I get summers off because I have faculty status) or if my work slows down in the summer.

In addition to acquisitions and cataloging, my unit handles database maintenance (error correction, record merges, duplicate record removal), batch loading of large vendor supplied record sets, and participates in numerous projects and other commitments both within our unit and Rutgers University Libraries. We provide the support needed to enable public services, research and instructional services, and interlibrary loan. Without our support, collection development and management would be seriously impaired. Reference service, including chat and Ask a Librarian services, would be compromised.

What is troubling is how technical services operations seem to be shrinking, yet their work has not been eliminated or diminished. Vacant positions are lost through attrition and work is redistributed to others. Some processes are lost in the transition, or are eliminated due to lack of time or competing priorities that are deemed to be more urgent. Technical services professionals are flexible and creative when it comes to resolving such issues. Consortial purchasing and cataloging are two examples. Shared digital repositories are another. Creativity is spurred by need and in some cases, lack of resources.

Creativity and collaboration embody the 2CUL Technical Services Strategic Alliance, which is described by Kate Harcourt and Jim LeBlanc in their paper "Finale and Future: The 2CUL Technical Services Strategic Alliance." Harcourt and LeBlanc discuss how Columbia and Cornell University Libraries' partnership (2CUL envisioned a broad integration of library activities, including collection development, acquisitions and cataloging, e-resources and digital management, digital preservation, and reciprocal offsite use of collections. The authors report on the final year of their grant funded initiative and describe their efforts to achieve operational integration in technical services.

This issue of *LRTS* also includes the following:

- "Perpetual Access Information in Serials Holdings Records" by Andrew R. Grissom, Steven A. Knowlton, and Rachel Elizabeth Scott, which explores the challenge of compiling perpetual access information for electronic journals. The authors leveraged fixed and variable fields to record this information, rather than maintaining a database for it.
- Shared print operations are becoming increasingly common given space limitations in libraries. Evan M. Anderson addresses the need for specific

program based marking based on access level stipulated by shared agreements in his paper "A Marking Heuristic for Materials in a Shared Print Agreement."

- In "Title Change Characteristics of Academic and Nonacademic Serials: Implications for Identifying New Serial Works," Mavis B. Molto compares the characteristics of academic and nonacademic serials with title changes and found that the two serial subpopulations were similar yet differed in the kinds and proportions of subject and function changes that took place when a title changed.
- Tina Herman Buck and Sara K. Hills discuss e-book short-term loans at St. Edward's University in their paper "Diminishing Short-Term Loan Returns: a Four-Year View of the Impact of Demand Driven Acquisitions on Collection Development at a Small Academic Library." Buck and Hills relate how demand driven acquisitions fits into collection building and management in a continually changing environment.
- Book reviews commissioned by *LRTS* Book Review Editor Elyssa Gould.

I hope you enjoy this issue of *LRTS*. Please feel free to contact me (mbfecko@libraries.rutgers.edu) with feedback, concerns, or questions.

A Marking Heuristic for Materials in a Shared Print Agreement

Evan M. Anderson

Shared print agreements are increasingly being used to account for space and budgetary constraints. However, there is a dearth of information in both the literature and in the available program documentation regarding quotidian, yet essential, practicalities such as additional physical marking of materials that have been committed to be retained. This paper argues for the necessity of specific program-based marking on the basis of levels of access stipulated by agreements, that traditional rationales for marking are still relevant, and that these rationales are subject to the contexts of specific shared print agreements. Lastly, it proposes a heuristic based on access to guide policy makers.

Space is at a premium in research libraries. More institutions and their governing bodies look to repurpose footprints once devoted to stacks and to find ways to allow for the maintenance of retrospective physical collections in a time of increasing emphasis on social collaboration and reliance on digital technologies. The lack of space is coupled with tightening budgets, a growing realization of the costs of maintaining print materials in open stacks, and the growing acceptance of digital surrogates (and born-digital resources) across academic disciplines. As such, academic libraries are turning to more cooperative forms of collection management, particularly for large print serial runs but also for low-use monographic collections. There is a growing corpus of literature describing these plans, their ontologies, organizational structures, and primary considerations for institutions considering initiating such projects. However, despite the robust literature and online program documentation available for review and emulation, many practicalities are rarely covered, articulated, or even defined.

One such practicality is the need for additional marking of items identified in a shared print agreement. Minimal information exists on basic benchmarks or best practices or even a minimum standard proposed in the literature, and there is a corresponding lack of recommendations or descriptions in program documentation from many regional and national shared print agreements. This paper advocates for the need to consider marking in shared print agreements and establishes a heuristic to guide decision makers when crafting or amending policies in shared print agreements. Using a systematic analysis of the needs of shared print programs and rationales for marking, this paper demonstrates that traditional marking concerns are still relevant, if not more so, in an era of electronic resources and last-resort copies; it highlights the major considerations for such additional marking, proposes possible explanations to account for the lack of practicalities in both the literature and in project documentation, and poses areas for further consideration and research.

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First, the term *shared print agreement* must be defined and the scope of this paper must be established. Kieft and Payne define a shared print agreement as a

> formal program in which multiple libraries coordinate long-term retention of print materials and related services by one or more participants to support preservation and allow space recovery among campus collections. A shared print agreement is not the same as a shared storage facility. Rather, it is characterized by an explicit commitment to retain materials for a specified time period (or indefinitely) in potentially multiple locations by multiple partners . . . also called "print archives" or "shared collection management."[1]

This definition provides the framework for an analysis of practicalities presented in this paper. A shared print agreement includes two or more partners, one or more locations, focuses on print materials and is subject to retention, preservation, and space-saving considerations. Thus the heuristic established for marking such materials incorporates these varied requirements and is, in turn, justified by them.

Literature Review

This formal review of the literature considers the following: a survey of current articles concerning physical marking of materials in general, a review of articles covering shared print agreements, and an examination of articles in which these subjects converge.

There is no significant body of recent literature on the subject of physical marking from the last two decades (a period that roughly corresponds with the rise of shared print agreements). Spidal provides a general overview of the history of monographic processing and library technical services. She notes that "recent literature has focused primarily on non-monographic formats."[2] She also advances the motivation for physical marking—ownership, circulation requirements, location identification, protection, and security.[3] Dixon questions whether marking actually defaces an item and provides examples of solutions from others, such as using pencils to write in accession information.[4] Lieberman concurs that marking may be damaging, but it is "planned disfigurement" and is necessary to help safeguard the item.[5] General textbooks on technical services are also short on detail and defer primarily to local practices and procedures. Evans, Intner, and Weihs provide a loose set of examples of methods libraries use to mark materials and identify a familiar set of motivations: "evidence of ownership, location information, a way to record and track use."[6] Current articles that delve into the specifics of physical marking tend to focus on the technology used for processing: improvements in label printing and, more recently, barcoding.[7] Keifer promotes using the integrated library system (ILS) to batch process labels for transferring materials to a high-density storage facility rather than a previous approach of one item at a time.[8] Given the ubiquity of marking for general collection materials in academic libraries, both as a historical role and present responsibility, it is not surprising that the general subject has not received much recent treatment by academics. In essence, libraries are already experts at processing and have few questions about best practices outside of minor technical improvements.

Many papers concerning shared print agreements provide the general rationales underpinning such projects. Smith states that many users believe that "they *know* libraries are . . . preserving everything that is interesting or useful" (emphasis in original).[9] However, Smith argues that there are constraints that prevent libraries as single actors to meet this expectation and recommends creating networks of repositories with a variety of preservation and retention obligations. Additionally, Smith notes that libraries must "divorce ownership per se from governance" to collaborate effectively.[10] Clement extends this issue of ownership and governance to one of utility and trust by arguing that "it would be more useful for libraries to pool their resources than to compete with each other for material."[11] He echoes the financial, space, and preservation motivations advanced by Smith.[12] Lawrence argues for "deep collaboration" in multiple aspects of librarianship including shared print at the University of California (UC) system of libraries to account for these same constraints.[13] Kieft and Payne argue that libraries need to focus on rare materials and unique items and move their institutions from being "'book-centered' to the 'learning-centered' library" and that deeper collaboration is the vehicle for this.[14] The relationship libraries have with their institutional faculty must also be considered and strong collaboration in shared print agreements offers opportunities to meet the expectations of both new and established faculty.[15] Thus each of these authors discuss the reasons libraries are working together and provide a general sense of the current directions in shared print agreements.

Others, such as Genoni, attempt to provide an overview of projects underway. Focusing on the attitudes of Australasian university librarians, Genoni concludes that after more than ten years of work and discussion, "there has been occasional agreement, some gains, and a great deal of hesitancy."[16] Demas provides an overview of both North American and British projects and highlights some infrastructures that have been established.[17] A review of expanding programs in the last fifteen years demonstrates the variety of models available for shared print, from small regional agreements between pairs of institutions to larger national-scale repositories.[18] These agreements can have a variety of shared

governance approaches, shared space allocations, allotments for materials and multiple types of services, and, as Payne recommends, "different service levels to support different needs for different constituencies."[19] These repositories can either be light (fully accessible) or dark (closed, for preservation purposes only) with variations, or degrees of dimness, between.[20] This multiplicity of models—who and how institutions share, what level of access they provide, and what levels of ownership and governance are applied—all need to be addressed with respect to establishing any policies on physical marking. Additionally, the rationales for such cooperative programs must also be accounted for while not ignoring the potential limitations of temporal and financial resources.

The questions these papers raise and the considerations they pose are partially answered in reports by Malpas and Reilly Jr.[21] These authors discuss the multiple modes of governance and collection building, de-duplication and rationalization, and how ownership and access are handled by a variety of major programs both nationally and internationally; they also advocate for documentation "through contracts, written agreements, bylaws, memoranda of understanding, policies and similar instruments."[22] Demas and Miller concur: "libraries should take the time to write formal collection management plans in preparation for participating in shared print archiving programs."[23] These reviews call for documentation of policy and provide some detail on how programs have been constructed and formalized, but much of the essential quotidian tasks, such as physical marking, receive no elaboration.

In discussing specific shared print agreements, more formalized procedures are documented for a few programs. However, these details focus on nonmarking tasks or responsibilities. One such task includes creating accurate holdings information for shared catalogs.[24] Further articles address intellectual completeness verification for JSTOR print backfiles.[25] The thorny issue of shared ownership is treated through establishing an appropriate legal framework for "an ownership system called tenancy in common . . . all joint owners have an undivided interest in the property in its entirety."[26] De-acidification and other preservation treatments are discussed.[27] Effective interlibrary loan (ILL) is also considered.[28] However, three projects in the literature discuss marking. For the Orbis Cascade Distributed Print Repository (DPR),

> staff from participating libraries will physically identify the DPR volumes by placing a specially designed Alliance bookplate in every volume of each title for which that library is responsible. The bookplate will clearly identify the item as being part of the DPR and also indicate that the volume does not circulate.[29]

For the JSTOR/UC back-files archive project at the Southern Regional Library Facility (SRLF), "processors add item barcodes to each volume."[30] For the Pennsylvania Academic Library Consortium (PALCI) project, "physically stamping volumes to indicate they belong to the archive [was] eliminated altogether," though no explanation was provided by the authors.[31]

The literature therefore leaves a general set of rationales for marking, some minor comments on techniques and technologies, and lays out the broad shape of some shared print agreements. The general marking rationales are summarized and further explored below and support the applicability and necessity of marking in shared print agreements.

Reasons to Mark

As mentioned above, there are several reasons why libraries have traditionally marked their materials. Materials are only discoverable if they have an identifying mark that allows a patron or staff member to physically locate them. Once an item is off the shelf or out of the owning institution, the markings allow a patron to return it correctly, something that even RFID tags cannot fully guarantee. Marking can be used to assist in preservation and salvage decisions during treatment or an emergency situation. It can help thwart would-be thieves, particularly those seeking relatively clean copies of high-value or rare materials. Lastly, a bookplate mentioning a specific donation, special collection, grant, or other funding source can encourage new donors (or established ones) to contribute. Donor support of the library is clearly and physically demonstrated.

Each of these reasons to mark extends to the materials that are committed to be retained by a library participating in a shared print agreement. Regardless of how the item is disposed, an item must still be discoverable, it must demonstrate its ownership if it is circulated or lent to another institution via ILL, may be subject to disaster recovery and require treatment, or may be threatened with theft—all of these are of increased concern because of institutional commitments. Participants have pledged, often in writing, to protect these materials, and the other members are counting on their long-term survival. Further, as with general collections, increased access increases risk of loss, damage, theft, or misfiling. Therefore the need for consistent, clear, and considered marking is increasing. In libraries of any reasonable size, which includes most institutions that participate or would participate in shared print agreements, marking serves for staff notification as well. For example, staff who are involved in physically de-accessioning materials may not also be the staff who update, suppress, or delete bibliographic or holdings records in the ILS and may not then be aware of retention requirements documented in said records. Clear

Table 1. Program Documentation Review

Program	Markings	Cataloging	Shelf Audit	In-House Use	ILL Loan	ILL Copy	Transfer of Ownership
UKRR	Unspecified	Yes	Yes	Yes	No	Yes	retained by library
PASCAL	Unspecified	Yes	No	Yes—Reading room	Yes	Yes	retained by library
WEST	Unspecified	Yes	Volume level	Yes	Yes	Yes	transferred to holding library
GWLA Shared Print	Unspecified	Yes	Volume level	Yes	Yes	Yes	retained by library
CARM—CAVAL	Unspecified	Yes	Volume level	Yes	Yes	Yes	Ceded to consortium
TUG	Unspecified	Yes	Yes	Yes	Yes	Yes	retained by library
UC RLF	Barcodes	Yes	Yes	Yes	Yes	Yes	retained by library
CIC	Barcodes	Yes	Volume level	unspecified	Yes	Yes	retained by library
UI-ISU-UW DPR	Unspecified	Yes	Volume level	Yes	Yes	Yes	transferred to holding library
VALE	Unspecified	Yes	No	Yes	Yes	Yes	retained by library
CONSTOR	Unspecified	Yes	Yes	unspecified	Yes	Yes	retained by library
Orbis Cascade DPR	Bookplate	Yes	Yes	Yes	Yes	Yes	transferred to holding library
PALCI	Match holdings	Yes	Issue level	Yes	Yes	Yes	transferred to holding library

markings serve as a final safety measure to ensure a library does not accidentally discard an item subject to long-term commitments. Finally, given concerns raised by Neal, good public relations regarding shared print agreements can demonstrate to faculty that the library is wisely expending its resources; even if the library is de-accessioning materials locally, it still can provide access quickly and effectively and can reallocate space or collection maintenance dollars in a more effective manner.[32]

This paper uses the above generalized rationales for marking, plus the ontologies and modalities of shared print agreements demonstrated in the literature to assert the requirements for and necessity of marking items included in a shared print agreement. These rationales and concerns will be further documented and addressed below following a careful consideration of the available project documentation of currently existing shared print programs.

Program Documentation

This paper adapts the method used in the Research Library Group's *Shared Print Policy Review Report* to analyze project and program documentation from thirteen regional, national and international shared print programs to help define the guidelines and considerations for marking in a shared print agreement.[33] This systematic review of available project documentation evaluated the following elements:

1. marking of materials
2. updating, changing, or creating cataloging records
3. condition and intellectual completeness verification
4. in-house and on-site usage
5. ILL (both using digital surrogates and physical loans)
6. transfers of ownership

Only projects with online documentation available were considered. Many other projects were rejected as the program materials were online but restricted. See appendix A for more information on the thirteen projects that were reviewed. This review allows for some applicable generalizations because of the number of programs considered and their relative uniformity. See table 1 for a consolidation of the project review.

As noted in the literature review, requirements for physical marking were largely absent in program documentation. Of the thirteen projects, only four (31 percent) contained any documented requirements. Two of these projects (15 percent) stipulated that barcodes would need to be placed for the purposes of access. Both of these projects are for repositories (University of California Regional Library Facilities and the Committee on Institutional Cooperation (CIC) repository at Indiana University). As discussed in the literature, a bookplate is required for the DPR. Further, the PALCI project requires that if there is a transfer of holdings, the new library must eradicate original markings and remark the materials to comport with local practices, but not employ any specific agreement-designated mark.

Not surprisingly, all thirteen projects (100 percent) require some additional cataloging work, whether it is updating holdings statements or adding an OCLC symbol for ease of consortial access or creating a union catalog. For purposes of discovery, bibliographic records or up-to-date

holdings statements are absolutely essential. This requirement speaks to the nature in which these shared print agreements will be used: multiple libraries will need to be able to review each other's records to de-duplicate and rationalize holdings and to locate original print materials when digital surrogates are insufficient for patron use. Since much work will be done comparing holdings at a distance rather than by reviewing each physical site (particularly for both distributed and repository models), accurate and up-to-date catalogs are necessary.

A majority of the agreements (85 percent) specify some form of shelf audit must be completed. Most of these, if the level is specified, are at the volume level. Only one specifies to the issue level. Many the agreements (38 percent) only stipulate that some form of review for completeness and condition be undertaken. As with cataloging, a verification of intellectual completeness and evaluation of condition is absolutely essential, as de-duplication would need to focus on best available copies and any long-term commitments would focus on complete serial runs or intact and stable monographs. The willingness of program developers to require this level of intensive labor implies the level of value these projects have and can be inferred to indicate why a program should undertake additional onerous tasks to preserve the integrity of collections. This core idea is elaborated below.

Components of these shared print agreements also cover multiple forms of access. All thirteen projects (100 percent) guarantee access through digital surrogates (ILL scanning/copying) either for members or any other requesting institution. The majority of programs (92 percent) also allow ILL of physical volumes. A large number (85 percent) also allow in-house or on-site usage. This on-site usage may either be in a reading room made available to researchers visiting the housing repository or the local holding library in the case of distributed models. This high level of access (both by patrons and staff) must be considered when determining what extent of physical markings are necessary. Access increases risks to individual items, increases risks to intellectual completeness, and poses other long-term preservation threats, particularly if items in a shared print agreement are last-resort copies.

Ownership is the last element evaluated in this review. Generally, an owning institution will have its own set of markings subject to local practices, requirements, and institutional history. In many shared print agreements, holdings are either deposited in a shared repository, transferred to another library to fill in gaps in serial runs, or retained on the shelf as part of a distributed model. If ownership is transferred, then markings would need to be updated as mentioned above with the PALCI project. If ownership is maintained, even if items are deposited at an off-site location, original markings are likely still needed but additional markings, such as barcodes for locations would be required. Four out of thirteen (31 percent) of these agreements specify that ownership is transferred to the new holding institution. One (8 percent) specifies that ownership is ceded to the consortium. In both these cases, new markings would be necessary. The majority (61 percent) indicate that ownership is maintained by the original library that purchased the items governed under the agreement. This does not mean that no further marking is required, only that at least some of the original marks must be maintained in case the agreement is terminated or items are recalled.

By evaluating the practicalities of these agreements, it becomes apparent that access is the primary determinant for additional marking. Even ownership is subordinate because materials must be discoverable, able to be reshelved, and returnable. Thus access is the concern that necessitates specification of additional marking in shared print agreements and serves as the basis for the heuristic proposed below. Before access can be used as the primary criterion, the considerations and complexities teased out by the review of program documentation need to be explored.

Considerations for Marking

Even with strong incentives to mark each volume included in a shared print agreement, many additional factors should be considered when determining what kind of mark and to what extent marking ought to be undertaken. Access is a guidepost, but access does not exist in a vacuum. Factors include the following:

- who owns the materials
- the item location
- who has access
- the timeframe of the commitment
- the scope of the project
- what staff are available

Ownership will dramatically govern the type of marking a library can or will undertake. In a distributed model, in which several institutions hold journal runs, ownership will be diverse and the markings already present on any particular volume will convey ownership. As Maes and Thompson-Przylucki indicate, there are often issues regarding transfer of materials purchased using state funds.[34] Different programs have used methods of dealing with this limitation, such as extended and indefinite loans. Therefore, if materials are exchanged, lent, or given (depending on applicable laws), the receiving institution will need to re-mark the materials to comport with its own local practices, particularly if they will be shelved on open stacks. With single-location repository models, ownership may either be transferred to the holding

institution or a governing consortium. In either instance, as demonstrated by the barcoding at the SRLF, some basic marking is undertaken and is absolutely necessary.[35] Yet the need to demonstrate ownership is subordinate to the need to provide access. Ownership proof is largely irrelevant if an item cannot be discovered or reshelved properly.

Location of the item also affects the nature of any additional marking. If the item is being removed to a remote location, it would be subject to additional marking as discussed above. When the model of the shared print agreement is distributed, additional markings might not be necessary to provide access. However, as discussed above, the more accessible an item is, the more important the other rationales for marking become. The greater the access, the greater the possibility of theft, misplacement, use by patrons who do not know where the item goes, and a greater likelihood of accidents or emergencies involving fire, water, or food.

The location is virtually inseparable from the issue of who is given access. If the shared print agreement specifies a dark archive—i.e., the collections are only open to those involved in the processing and maintenance of the item—only a new barcode or accession number is necessary. If the agreement is for dim archives, light archives, or ILL services (physical loan rather than digital surrogates) and circulation services are allowed, then the need for marking becomes greater still. Additionally, as access is expanded, the benefits of positive public relations from marking using explanatory bookplates increases: "Faculty reactions to the impact of removal of materials from campus shelves are normally directed to the library . . . the merging of holdings into shared collections can have a negative effect on a library's standing among its peers."[36] Shared print markings can help ameliorate this negative effect by being a signal for all the other materials that are still accessible through the agreement.

The duration of the commitment also has consequences. If the retention period is extensive, one may want to take an approach more akin to how special collections libraries mark their materials. Forecasting the future, print copies will be less in demand and "service copy collections are virtually becoming dark archives."[37] Long-term commitments will become archival commitments, and what are seemingly common print titles today will become the rare books of tomorrow, perhaps to such a degree that the value of the material as a physical object worthy of study may reach or exceed the intellectual value of its content in the eyes of some researchers. This raises the specter of Lieberman's "planned disfigurement" noted above.[38] The original (and often heavy) processing on bound serials may someday be artifacts themselves of library practices from earlier periods, but additional markings or re-markings may muddy such future academic analyses. If the retention is for last-copy only, this further increases the complexity of deciding how best to mark the volumes, as these volumes may replace or restore insufficient, damaged, or lost digital surrogates.

The last two listed factors ground any decisions for marking in the reality of the library. When the project is large, with many journal titles and volume runs to be processed again, there will be less incentive to take the time to mark each volume. If staffing resources are not available, then even when the motivations and incentives are clear and present, the work simply will either not get completed or completed in a realistic timeframe. Yet onerous tasks are already undertaken in shared print agreements. As part of the JSTOR/UC shared print project at the SRLF, student workers "undertake an intense validation process to make certain the volume is complete, similarly paginated . . . and in appropriate physical condition," and the CIC working group recommends condition and intellectual completeness of journals "should be carried out at 'the issue level,' meaning an inspection of 'a physical volume looking for obvious missing issues, and review the spine label (volume, issue, and date statements) for accuracy.'"[39] If libraries value these projects and the shared collections to the degree that they can take the time and resources to do this level of work, they should be able to find the time and resources to provide at least some marking. The marking will help maintain the condition and completeness of these shared collections, all of which these laborious tasks are designed to ensure.

A Heuristic for Marking Materials

As demonstrated by both the review of project documentation and the literature, there are a multitude of factors that govern both the rationales for marking and the nature of the mark used at any particular institution. Given this variety of considerations, the diversity of shared print agreements and local practices for physical processing, one standardized type of marking (e.g., a book plate, a spine label, a colored dot or tape, a penciled number) cannot be proposed and be useful. A universally applicable system or scheme is simply not a practical, implementable possibility.

However, circulation, ILL services, and general access are consistently shown in both the project requirements and literature to be usually granted or required to some degree. Therefore access becomes the primary criterion governing the necessity for specific marking for the shared print agreement. Access is the single commonality between all shared print agreements, thus it becomes the initial driving point of any decision about marking specifics. The more open and accessible a collection is, the greater the need for an additional mark on each item that is being retained as part of a shared print agreement. As access increases, so too does the need for a specific shared print agreement mark. See figure 1 for a representation of this relationship.

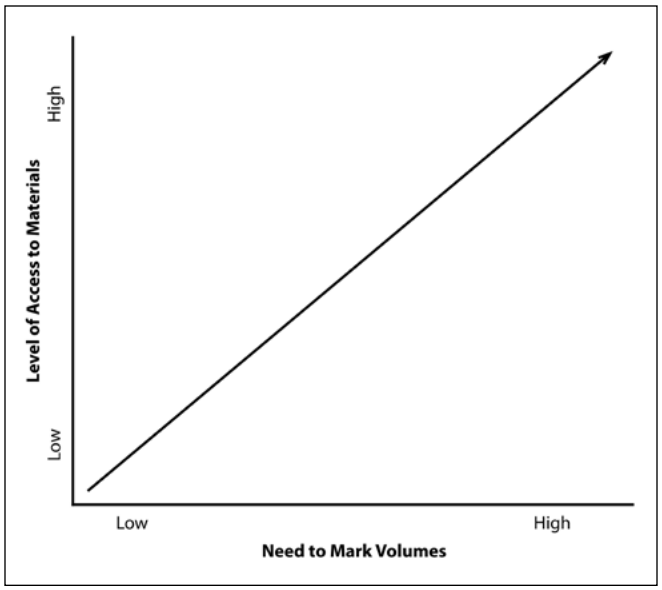

Figure 1. A marking heuristic

Modes of ownership, methods of distribution, preservation programs, and storage arrangements all create bewildering complexities, but access is simple and straightforward. Each institution and consortium will have its own technical services legacy, its own facilities issues, its own public relations concerns; each will have its own, unique context. Conceptually, shared print agreements are broad, therefore any useful tool must be broad. The heuristic is just that—a broadly defined relationship. It is not a complex matrix of analyses but instead a simple tool to cut through all the complexities and allow for decision making. It is not meant to function algorithmically, it is designed to enable decision makers to focus on the most pressing concern of daily operations for an established shared print agreement: access. Access is a standard sliding metric. Can anyone borrow an item controlled by the shared print agreement? Is the item located in open stacks? Can the item be copied or loaned? The heuristic gives decision makers a starting point. If there is little or no access, then other concerns—e.g., discovery and loss-prevention—become almost irrelevant beyond the normal collection management perspective. But, generally speaking, the more users or staff who handle each item, the more it may be used in-house or discharged either to local patrons or to those at other institutions, the more all these issues become increasingly important, driving the need to mark.

Ideally, each institution and consortium undertaking a shared print agreement should mark the materials they have committed to retain because they have invested significant resources acquiring and providing access through technical services processing, building shared collections, rationalizing and de-duplicating, checking for condition and intellectual completeness, preserving, and warehousing these items. The nature of the specific type of marking is subject to the context of the libraries, the types of agreements, the volume of the project, the availability of staffing, and service. Policy makers will have to establish the specifics of the marking to comport with the general reasons for marking. And they will need to do so in accordance with the program considerations for each of the institutions involved. At a minimum, policy makers should explore this issue further and document their decision making. If the goal is to preserve the scholarly record and provide long-term access, not just to free space or to warehouse print resources to avoid discarding them, then these resources must be marked as they always have been: to guide users to them, to collocate them, and to preserve and protect them. Institutions are expending considerable time and funds maintaining these items, so further modest expenses to achieve these goals are fully justified. This heuristic can help prompt these necessary discussions, justify such additional expenditures, and help safeguard the scholarly record.

Future Research

Shared print agreements have been in place for roughly two decades, and projects are reaching maturity. However, both the literature and the program documentation are often scarce on the practicalities of running such programs. Much material examines the organizational structure, funding, governance of the projects, and documentation on cataloging and holdings statement requirements, but that is roughly the extent. And there are many possible reasons why something such as marking is not actively discussed: Marking is such a common task that libraries assume any necessary marking is being completed (programs that mention barcoding or other technical services may imply this possibility). Many project planners and working groups may deem marking as an unnecessary library practice to be incorporated to any shared print agreement and that the general motivations for marking materials do not extend to shared collections. Marking also may be considered too laborious to be worthwhile; even though there are valid motivations to mark, they are trumped by finite material and temporal resources. Certainly, the lack of discussion may be a confluence of any or all of these factors.

Additional research is needed to fully understand the daily workflows and procedures involved in shared print agreements. Further, research is needed to see who is involved in these procedures, how they are structured organizationally (to whom they report, in which departments they work, whether they are student workers, support staff,

professionals, or a mix), and how much time they commit to such projects. Concrete data on labor and structure for quotidian operations will allow better evaluations for return-on-investment assessments and to either support or refute the arguments in this paper.

Additional research is needed in the areas of access, loss prevention, usage, and cost utility for shared print agreements. How frequently are committed items used and by whom? Are disaster plans being updated to include specific sections on committed materials? That space and cost savings are accrued in shared print agreements is all but a given, and some initial costing exists to sustain that belief, but more evaluation and more data are necessary.[40] Gauging the value of agreements for last-resort copies or dark archives that are limited to emergencies only will be difficult.

Ultimately, we need to know more about the benefits and costs of these projects to develop further best practices and to establish that libraries are serving their patrons in the best way possible and being good stewards of both the scholarly record and the finances afforded them.

Conclusion

Collaborative collections and facilities are being built. Catalogs are being updated and holdings records are being disseminated. Access is provided both physically and digitally. The scholarly record is hopefully being preserved. Shared print agreements are helping drive twenty-first-century library practices. But these agreements also need to incorporate the tried and true practices of the past that are underpinned by decades of experience and rationales that still apply. As long as the physical object is a manifestation of the scholarly notification system, it will be subject to the needs of access, ownership, preservation, emergency planning, protection against loss, and public relations. This basic idea and the core principle that with increased access comes with an increased need to mark are easy to articulate, but they are challenging to implement and are subject to all the complexities and constraints that affect research libraries.

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Title Change Characteristics of Academic and Nonacademic Serials

Implications for Identifying New Serial Works

Mavis B. Molto

The study compared the characteristics of academic and nonacademic serials with title changes, from which it was determined that the two serial subpopulations were similar in the six broad reasons found for a title change but differed in the kinds and proportions of subject and function changes that occurred when a title changed. On the basis of the findings, two alternate RDA *rule revision proposals are made (labeled Ideal versus Practical), the first requiring a new access point for a title change only when a significant subject or function change has occurred, and the second requiring a new access point only when the publisher has indicated the start of a totally new serial. It is further recommended that reasons for title changes be determined from statements in the serial or directly from the editor or publisher rather than from word changes in the title.*

An important element in *RDA* (*Resource Description and Access*) is the concept of a *work*. However, for serials with title changes, the rules do not provide a logical mechanism for identifying a new work. The *RDA* rules for serials with title changes, mostly a carryover from *AACR2* (*Anglo-American Cataloging Rules*, second edition), consist of determining whether a major change has occurred in the title. A major change occurs when certain types of title words change or when a change occurs in the first five words of the title. If a major change occurs, a new access point or record is created, which signals also that a new work has emerged.[1] This is inconsistent with what one would logically see as a new work as defined in *RDA*: "a distinct intellectual or artistic creation."[2]

In two previous studies, the author proposed changes to the *RDA* rules because of findings from a sample of academic serials with title changes. It is unclear, however, to what extent these findings can be applied to nonacademic serials because there is no correlating data for them. Because of these questions, it was determined that it was necessary to conduct a new study focusing on nonacademic serials so that comparisons could be made with the previous findings. The new data could then be used to expand on the previous recommendations for *RDA* rule changes.

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The current study differs from other studies of title changes in two ways. First, the study compares two serial subpopulations, namely academic serials with title changes and nonacademic serials with title changes. Previous studies identifying reasons for title changes have either focused on academic and scientific serials or have looked at a mix of serial subpopulations. Second, the study, along with the author's previous studies of academic serials, has the objective of using the collected data to recommend better cataloging procedures for identifying new serial works.

The purpose of the study was thus to compare the characteristics of academic and nonacademic serials with title changes and to develop a collective strategy for identifying new works for these serials. The study was limited to serials with title changes and did not address other kinds of serial changes (e.g., changes in responsibility) that might also lead to the recognition of a new work. The study was further limited to English-language serials to correlate with the author's earlier studies. The research is expected to have both theoretical and practical implications, with the findings contributing to the theoretical body of knowledge concerning title changes for serials and also providing information for improving the *RDA* rules for serials with title changes.

Literature Review

The literature review concerns six areas related to the proposed research: (1) characteristics of serials with title changes, (2) comparisons of academic and nonacademic serials, (3) the concept of a work, (4) strategies for identifying new works for serials with title changes, (5) international cataloging standards, and (6) the future of serials cataloging. The six topics are discussed below.

Characteristics of Serials with Title Changes

Characteristics of serials with title changes was the topic of a previous study by the author in which reasons for title changes were identified in academic serials.[3] Several older studies, by Afes and Wrynn, Geller, and Lakhanpal, along with a five-part study by Guha, Sen, and Neogi, investigated reasons for title changes in scholarly and scientific serials.[4] A study by Jones reported reasons for title changes from a sample of serials drawn from the *Standard Periodical Directory* covering a mix of scholarly and nonscholarly serials (including magazines, journals, newsletters, newspapers, and directories, in all subject areas).[5] The most common reasons for title changes found in these studies were for subject changes, corporate changes, language changes, editorial changes, frequency changes, and function changes. There has been little ongoing work aside from the author's on this topic.

Comparisons of Academic and Nonacademic Serials

Comparisons of academic and nonacademic serials were made by two authors, with a third offering some related insights. Shadle comments on differences he observed between scholarly journals and popular magazines and questioned why the same cataloging rules are used for resources with different purposes and different audiences.[6] He noted that popular magazines are diverging in publishing practices between print and online and speculated if future online academic journals will begin to assume some of the characteristics of current online popular magazines. Headley compares concerns about serials in public and academic libraries, observing that both have issues with title changes, yet academic libraries often have the diverse staffing needed to deal with the various serial issues more effectively than public libraries.[7] Jones provides some related insights on the different title-change patterns found when comparing disciplines, noting that scientific serials showed a higher rate of title changes than the social science and humanities serials.[8]

Concept of a Work

The concept of a work in the modern catalog was the focus of a special issue of *Cataloging and Classification Quarterly*.[9] Various views have been expressed about the more specific concept of a serial work. Kuhagen, for example, believes that users' needs in finding and selecting serials would be best supported if serials with title changes were treated as single works, whereas mergers and splits could be treated as different works.[10] Antelman suggests that neither the cataloger nor the library user would see a new work in the records created by cataloging rules.[11] She proposes grouping records for related serials in the library catalog into bibliographic families. Another suggestion, by Adams and Santamauro, is to abolish successive entry cataloging and instead create umbrella records for "superworkspressions."[12] New records would be created for changes in content. The authors acknowledge, however, that knowing when content has changed sufficiently to identify a new superworkspression may be difficult.

The abstract nature of a work is described in the following excerpt from the *Functional Requirements for Bibliographic Records* (*FRBR*) report:

> A *work* is an abstract entity; there is no single material object one can point to as the *work*. We recognize the *work* through individual realizations or *expressions* of the *work*, but the *work* itself exists only in the commonality of content between and among the various *expressions* of the *work*. Because the notion of a *work* is abstract, it is difficult to define precise boundaries for the entity. The con-

cept of what constitutes a *work* and where the line of demarcation lies between one *work* and another may in fact be viewed differently from one culture to another.[13]

Strategies for Identifying New Works for Serials with Title Changes

Strategies for identifying new works for serials with title changes were not specifically discussed in the literature. However, the more general topic of cataloging strategies for title changes has been discussed at length, with much written about the pros and cons of the various mechanisms that can be used to determine when new records should be created when titles change. However, a clear correlation has not be demonstrated between the use of specific mechanisms and the identification of what would be seen as a new work. Three conventions have been used historically for cataloging serials with title changes, as described by Hirons:

- Earliest entry: all changes are kept on a single record with the description based on the earliest issue and title changes, etc. recorded in notes;
- Latest entry: all changes are kept on a single record with description based on the latest (most recent) issue and earlier titles, etc. given in notes;
- Successive entry: a new record is made for each title or other major change (e.g., main entry); description is based on the latest issue (*AACR1*) or the earliest issue (*AACR2*).[14]

The discussion that follows begins with the history of title-change rules and then considers the pros and cons of latest-entry and successive-entry cataloging. Jones reviewed the history of title change rules in a presentation at the 2016 American Library Association Midwinter Meeting. Throughout the presentation, he offered insights into why the rule makers did what they did, noting that the boundary of the work changed as cataloging conventions changed.[15] In the 1800s, the book catalog was in use, for which it worked best to have all title changes recorded in one place under the earliest entry. With the beginning of rule making by committee in 1908, the card catalog had come into being and dual cataloging practices were implemented by the British and the Americans. The British preferred earliest-entry cataloging and the Americans instituted latest-entry cataloging to accommodate users who were thought to be more likely to look under the current title than an earlier title. In 1953, Lubetzky began advocating for successive-entry cataloging because he believed users were more likely to search for the title of the specific volume they were seeking rather than by a later or earlier title, and in 1961 the Paris principles endorsed successive entry cataloging. Successive entry worked well with the card catalog, reducing the need to redo cards each time a title changed.

The *Anglo-American Cataloging Rules (AACR)*, published in 1967, prescribed successive-entry cataloging, but as Jones noted it was not until 1971 that the Library of Congress switched from latest-entry to successive-entry, pressured by the need to expedite serials cataloging. *AACR2*, published in 1978, continued to prescribe successive-entry for serials whereas an update in 2002 prescribed latest-entry for integrating resources. There was an attempt in 1988 to bring back latest-entry for serials as better suited for the online catalog, which had replaced the card catalog in many libraries, but the effort did not succeed because of the numerous records that had been created under successive-entry and also the requirements of the ISSN (International Standard Serial Number) system. Jones concluded his review of serial-title changes through the ages by submitting that the use of dual cataloging conventions, one for serials and one for integrating resources, has caused the question "What is a work?" to remain in tension.[16]

Latest- versus successive-entry cataloging was the theme of a symposium organized by Mary Curran, editor of the resulting collection of articles.[17] Points from two of the contributors, Baia and Randall, are discussed here.[18] Baia, a proponent of latest-entry, lists the advantages of latest-entry, along with responses to common criticisms. Randall, a former proponent of latest-entry, describes how his thinking eventually changed. Both Randall and Baia report that their respective institutions finally abandoned latest-entry for successive-entry cataloging (Northwestern University in 1996 and the University of Colorado in 1999, respectively) because of the lack of synchronization with other libraries' records in their library systems. Another factor was the conflicting OCLC (Online Computer Library Center) requirement of successive-entry records for libraries wanting to maintain their holdings in WorldCat. Some commonly recognized advantages and disadvantages of latest-entry are noted below. An advantage for latest-entry is generally seen as a disadvantage for successive-entry and vice versa.

Advantages of Latest-Entry Cataloging

- Satisfied users—A single record is what users would logically expect, according to Baia. A user survey, Randall notes, showed that latest entry led users to the desired information more easily.
- Ease of updating—In the online environment, the ease of updating makes successive-entry obsolete, according to both Baia and Randall.
- Fewer duplicates retrieved—Successive-entry results in duplicate search results because of repetitive added entries in the multiple records, Baia notes.[19]

Disadvantages of Latest-Entry Cataloging

- Massive recataloging—Response: Existing successive-entry records, Baia suggests, would not have to be converted to latest-entry except for the most recent record.
- Long and complex records—Response: A study noted by Baia showed the majority of serial records that represented non-US government documents were not overly long, with most records including only one title change. Randall, however, observes that records become more complex when multiple title changes are combined with corporate body main entry changes.
- Different title than expected—Response: If titles are listed chronologically with dates, Baia proposes, it will be clear why the record was retrieved.[20]

International Cataloging Standards

The international harmonization of cataloging rules was the focus of a "Meeting of Experts" in 2000.[21] The primary purpose of the meeting was to discuss continuing resource cataloging practices, with the goal of facilitating more extensive sharing of catalog records. Three groups participated in the harmonization efforts: the Joint Steering Committee (for *AACR*), the ISBD(S) (International Standard Bibliographic Description for Serials) Working Group, and the *ISSN Manual* Revision Committee. One of the objectives was to have "everyone, regardless of the cataloging rules being followed, make the same decision about the need for a new serial record." Another goal was to create rules for title changes that would meet the following requirements: recognize only significant title changes, recognize deliberate changes in the work, and enable a wide variety of people working with serials, including acquisitions and check-in staff, to understand the rules.

The ISSN standards play an important role in serials cataloging. Reynolds describes how the simultaneous rule revisions in 2002–03 between *AACR2*, ISBD(S), and the *ISDS Manual* synchronized the rules for major and minor changes that from then on determined when a new record and new ISSN should be created.[22] The major and minor change rules have carried over to *RDA*. However, even with the new synchronization, applying the ISSN rules is still challenging because different cataloging rules are followed for non-ISSN elements by many of the larger ISSN centers, as specified by the center's affiliated institution or cooperative program. Reynolds notes that publisher preferences have not helped in solving the problem because publishers have differing views on title-change policies, as described below:

- Some publishers seem to want every change—no matter how minute—to be assigned a new ISSN, either because of how they use ISSN internally, or because their title changes are intended to signal other changes such as a new editor, new ownership, or a new editorial direction.
- Other publishers seem to want to keep the same ISSN forever, giving the impression that they feel ownership of a particular ISSN is part of their "brand."[23]

A call has been issued by the ISSN International Centre for revision of the current ISSN standard, which dates from 2007. Topics to be discussed include

- title changes, including major and minor change rules;[24]
- whether ISSN should be assigned to a "family" of serials that would encompass all title changes or even all related editions;
- clarification of which digital editions or formats should be assigned their own ISSN;
- alignment between mandatory ISSN metadata and ONIX metadata; and
- expansion of information about use of ISSN with other identification and linking systems.[25]

Future of Serials Cataloging

The future of serials cataloging was discussed during an interactive session between four serials cataloging experts, moderated by Erik Bergstrom. Some of their comments follow:

- Publishers—"RRR [Regina Romano Reynolds]: . . . On the one hand, I see publisher descriptions as likely forming the basis of future library descriptions. On the other hand, having publishers contribute directly to shared databases constructed according to cataloging codes and formats will likely be problematic."[26]
- Continuing resources—"RRR: . . . Since just about everything will be a continuing resource, there will still be a need for ISSN to help track those transactions [of library expenditures]."[27]
- Popular versus academic serials—"SS [Steven Shadle]: . . . One of the things I think about is why we are using the same set of rules to catalog different kinds of resources when they are actually different items that serve different purposes, different needs, and different audiences. . . . I know the newspaper community has developed their own set of practices, and the context I am coming from is the scholarly journal because I work in an academic environment. In that environment the citation is of critical importance.

But when we talk about the future, I think the questions that have to do with magazines are interesting because popular magazines are where we have seen a lot of diverging between print and online in terms of publishing practices. I wonder whether future online academic journals will look more like current online popular magazine."[28]

- Different rules for different materials—"EB [Erik Bergstrom]: Shana, should we be using the same set of rules to catalog a journal, a newspaper, a magazine, or a blog? . . . SLM [Shana L. McDanold]: I think we have to look at what are we trying to accomplish? . . . What are we creating, why are we creating it, and for whom? If the ultimate goal, no matter the content, is to provide access to that content, I think there is going to be that base-level content that requires base-level metadata across the board, whether it is a book or a magazine or a newspaper or a scholarly journal. . . . Beyond the base level of identification . . . what you add to that really should not be locked down."[29]
- Base level—"LH [Les Hawkins]: I think that [baseline treatment] is the only way we can get all the different providers of metadata to contribute. We need to focus in on what is needed for the base level of identification to make this possible. We tried with the CONSER Standard Record to pare down to the basic required elements, and I think it was successful."[30]
- Concept of the work—"RRR: . . . I am concerned that all of this wonderful potential linking may bog down if we fragment the concept of the work too finely. In other words, I think we should try to cover multiple variations on the work theme with one identification as opposed to proliferating these unique identi[t]ies, which then cannot serve as the hub for all of this other metadata because people are linking to 10 different unique identities rather than one."[31]

Bibliographic Framework Initiative (BIBFRAME), the projected replacement for MARC, is a topic of particular interest relevant to the future of cataloging. Balster describes work by the UCLA Continuing Resources Study Group, which has focused recently on issues related to converting serial records from MARC to BIBFRAME.[32] In a presentation at the 2016 American Library Association Annual Conference, Balster described problems that have been identified by the Study Group in test conversions of serial records to BIBFRAME.[33] One problem noted is that there is no explicit support in BIBFRAME for changes over time within a single work, including changes in title (minor title changes), publisher, and frequency. BIBFRAME treats minor title changes as multiple main titles, the equivalent of multiple MARC 245 fields, but in MARC these are coded as variant titles in the 246 field. Balster notes that the BIBFRAME treatment of minor title changes is more in line with *RDA*, which treats minor title changes as later titles proper. Balster concludes by suggesting that BIBFRAME provides an opportunity to investigate the reasons for doing what we do and to change practices to take advantage of what the linked data environment has to offer.

Method

Conceptual Framework

The study's purpose was to compare the characteristics of academic and nonacademic serials with title changes, and to develop a collective strategy for identifying new works for these serials. To compare these two types of serials, two sets of data were needed, the first relevant to academic serials and the second pertaining to nonacademic serials. Data concerning academic serials were collected in a previous study, but no corresponding data were available for nonacademic serials. It was thus determined to collect matching information for the nonacademic serials, including data on: reasons for title changes, sources of information, subcategories explaining title changes, and evidence for new serial works. It was further determined to use the collected data to draw comparisons between these two distinct serial subpopulations.

The research was intended as a descriptive and exploratory study of the two serial subpopulations. The *RDA* definitions of a serial and a work were used. Thus a serial was defined as "a resource issued in successive parts, usually bearing numbering, that has no predetermined conclusion (e.g., a periodical, a monographic series, a newspaper)" and a work was defined as "a distinct intellectual or artistic creation (i.e., the intellectual or artistic content)."[34]

To meet the study's objectives, answers were sought to four research questions correlating with the four areas investigated in the previous study of academic serials:

1. Reasons for title changes—What are the reasons for title changes in academic and nonacademic serials?
2. Sources of information—How does textual content compare with title words as a source of information in determining reasons for title changes in academic and nonacademic serials?
3. Subcategories explaining title changes—How can reasons for title changes be subcategorized for academic and nonacademic serials?
4. Evidence for new serial works—Which subject and function subcategories represent changes that provide evidence for new serial works in academic and nonacademic serials?

Samples

Two samples were used in the study, one from the subpopulation of academic serials with title changes and one from nonacademic serials. The sample of academic serials was taken in a previous study and the sample of nonacademic serials was taken in the current study. The samples were limited to English-language serials because the study was seen as an exploratory study and a starting point for further studies, if needed, including studies of non-English-language serials. Serials were chosen that were accessible to the researcher rather than by random selection because of the potential difficulty in gaining access to serials located out-of-state or for which physical or electronic access might not be allowed by the holding library. Access to complete issues was required, as explained below, and thus interlibrary loan was not seen as an option because libraries generally do not lend journal volumes. Details concerning the two samples follow.

Academic Serials

The sample of nonacademic serials with title changes was taken from the JSTOR online database of full-text digitized back issues of academic journals.[35] The database provides information on previous titles, mergers, and splits, allowing titles to be identified for which a title change has occurred. Serials from four JSTOR collections were included in the sample: Arts and Sciences I, Arts and Sciences II, Arts and Sciences III, and Life Sciences. These collections were chosen because the researcher had institutional access to the collections and also because they represented a range of subject areas. Non-English serials were excluded, as were serials consisting of splits or mergers. Serials for which no explanation of the title change was found in the text were also excluded, leaving 120 serials in the final sample, just under half (44.8 percent) of the initially qualifying serials with title changes.

Nonacademic Serials

The sample of nonacademic serials with title changes was obtained by using the Ulrich's database as the starting point. Ulrich's was chosen because of the database's comprehensive nature and the ability to search for serials within specific categories. The database provides a history of each periodical, including the identification of former titles, incorporated titles, and mergers. Ulrich's includes data relevant to all types of periodicals and in all subject areas, as indicated in the following description of the database:

> Ulrich's is the authoritative source of bibliographic and publisher information on more than 300,000 periodicals of all types [including] academic and scholarly journals, Open Access publications, peer-reviewed titles, popular magazines, newspapers, newsletters and more from around the world. It covers all subjects, and includes publications that are published regularly or irregularly and that are circulated free of charge or by paid subscription.[36]

The following conditions were applied in the initial Ulrich's search to obtain a preliminary list of serials to sample: "English" (language of text), "magazine" (serial type), and a "Magazines for Libraries" review. The English limitation was applied to correspond with the language limitation in the previous study of academic serials. It was determined that limiting the search to magazines would yield titles that were mostly nonacademic, with "trade" or "consumer" as the main content types. Trade serials contain news and items of interest to a particular trade, whereas consumer serials are those sold to the general public and usually intended for a nonprofessional audience. It was, finally, determined that limiting the sample to serials with a review would reduce the results to a more manageable size and potentially to titles more commonly held within library collections.

The strategy described above resulted in a list of 3,558 titles. Further exclusions were made to limit the sample to serials with title changes, indicated by "null" in the history column (1,709), and to serials that were not incorporated or merged, indicated also in the history column (1,397). Titles that were merged, split, or absorbed were already considered as new works and not in need of further analysis. Microsoft Excel files were created from downloaded information for the qualifying titles.

The author's next challenge was how to obtain access to the identified serials. From a presample of twenty-five serials, it was determined that of the eighteen with a title change, eleven were available in a major library within the researcher's home state. The first or earliest issue of five of the serials was available at the Merrill-Cazier Library, Utah State University (MCL), easily accessible to the researcher. Access issues necessitated working with the serials in the MCL and going beyond that only if needed.

Of the 1,397 qualifying serials identified in Ulrich's, records for 574 were found in the MCL online catalog, but the first issue was available in the library for only 261 of these serials. The first issue was needed to determine whether an explanation of the title change was provided. Eighteen additional serials were excluded for various reasons (twelve with no title change, four print/online duplicates, one non-English, and one that was in the previous sample of academic serials), leaving 243 serials.

The final step was to examine the first issue of each of the 243 serials to determine whether an explanation of the title change was given. A total of 113 serials lacked an explanation, leaving 130 serials in the final sample, just over

half (53.5 percent) of the initially qualifying serials. The size of the resulting sample was comparable to the 120 serials in the previous sample of academic serials and was determined to be sufficient. Of note was the fact that only one title overlapped with a title in the previous sample, confirming that the current sample was indeed unique. The sample included print, electronic, and microfilm serials, depending on which format was available for a particular title. A Microsoft Word table was created from the original Excel files for the 130 titles (see appendix A).

Limitations of the Samples

Because the samples were not randomly selected from the respective subpopulations of academic and nonacademic serials, generalizations of the study's findings will be limited. The sample of academic serials contained a variety of academic serials, but it was limited to those in the specific JSTOR collections that were sampled. The sample of non academic serials consisted mainly of trade and consumer magazines, thus excluding other potential types of nonacademic serials, plus serials that were not available in the MCL. The English-language constraint in both samples means generalizations will be limited to serials in the English language.

Another limitation was that JSTOR and Ulrich's entries were used without investigating how decisions for creating new entries for title changes were made in the respective databases. The titles listed were not verified against a cataloging code to determine whether recognizing the new title corresponded with specific cataloging rules. If a new title was questionable, WorldCat or the OCLC records in the MCL online catalog were checked to clarify the title-change history and the dates for the old and new titles.

Procedure for Identifying Characteristics of Title Changes for Serials

Procedures were developed for gathering the required information in the following four areas noted above: reasons for title changes, sources of information, subcategories explaining title changes, and evidence for new serial works. The procedures are explained below and replicate the steps followed in the previous study of academic serials.

Reasons for Title Changes

The data collection began by seeking an answer to the first research question: what are the reasons for title changes in academic and nonacademic serials? Because data were already available for the academic serials, the data collection focused on the nonacademic serials. Reasons for title changes were examined in the sampled serials using two sources of information: textual content and title words. The steps in the data collection are outlined below.

Using Textual Content as the Source

In this phase of the data collection, reasons for title changes were determined from statements appearing in the sampled serials, following the steps below:

- Analyzed textual content. The first issue of each serial following the title change was examined. Other issues were also occasionally examined, especially if electronically available, when clarification was needed or if the first issue lacked explanation. The beginning pages of the issue were checked, and any text providing a reason for the title change was photocopied. The following information was generally not copied: simple statements that the title had changed; instructions to authors; or descriptions of changes in editors, publishers, cover design, typeface, layout, number of pages, or the serial's medium of publication.
- Assigned title-change categories. A table was created listing all titles in the sample along with the text explaining why the title changed. The explanations were classified using the six categories devised in the previous study: S-subject change, U-function change, C-corporate change, G-geographic change, Q-frequency change, and F-title word-format change. The categories are described in detail in appendix B (column 2), along with examples. Relevant category codes were entered in appendix A (column 5) for each serial. If a title change occurred for more than one reason, the serial was coded under each of the reasons.

Using Title Words as the Source

In this phase of the data collection, reasons for title changes were determined from word changes between the old and new titles of the sampled serials, following the steps below:

- Analyzed title words. The words in the old and new title of each serial were compared for evidence to explain the title change. Words occurring in title qualifiers were not analyzed.
- Assigned title-change categories. Word changes in the titles were classified using the same six categories as in the previous study: s-subject change, u-function change, c-corporate change, g-geographic change, q-frequency change, and f-title word-format change. The kinds of change required to assign a specific category are described in appendix B (column 3), along

with examples. Though logic was used in assigning the categories, changes in title words may have occurred for reasons other than what might be expected. A word may have been dropped from a title, for instance, not because the corresponding subject was no longer covered, but simply to shorten the title. Relevant category codes were entered in appendix A (column 6) for each serial. If a title change occurred for more than one reason, the serial was coded under each of the reasons.

Sources of Information

Next, data were collected concerning the second research question: how does textual content compare with title words as a source of information in determining reasons for title changes in academic and nonacademic serials? Data were collected on the nonacademic serials to supplement what was already known about the academic serials. The category codes in appendix A were used to create two tables, the first showing the reasons for title changes discerned from the combined sources and the second showing unique reasons from the individual sources. Two counts were tabulated from the data in the tables: the number of all reasons for title changes, by category, from the combined sources and the number of unique reasons for title changes, by category, from a single source.

Subcategories Explaining Title Changes

The third research question was, how can reasons for title changes be subcategorized for academic and nonacademic serials? Data were collected on the nonacademic serials to complement what was already known about the academic serials using textual content as the source. The descriptions of why titles changed, identified above, were grouped into subcategories by following the steps below:

- Alphabetical lists were created of all descriptions of why titles changed within each of the six categories noted above.
- A table was built for each of the six categories wherein the descriptions could be grouped into subcategories by wording and intent, with some rewording where needed to create consistency for better grouping.
  - Existing subcategories, identified in the previous study of academic serials, were used when applicable.
  - New subcategories were created as needed
- Descriptions that referred to more than one type of change were grouped under the subcategory corresponding with the first change mentioned unless a subsequently described change was more specific.

Evidence for New Serial Works

The fourth research question was, which subject and function subcategories represent changes that provide evidence for new serial works in academic and nonacademic serials? Data were already available for the academic serials, so the data collection focused on the nonacademic serials, using textual content as the source. The subcategories identified above were grouped according to the expected value of the change(s) represented by each subcategory in identifying a new work. A level of evidence was then assigned to each subcategory using the *FRBR* guidelines for modified works to provide the foundation for the process.

The *FRBR* guidelines for modified works, developed by the IFLA Study Group on the Functional Requirements for Bibliographic Records, were used in determining how to rank the subcategories. The guidelines state, "By contrast, when the modification of a *work* involves a significant degree of independent intellectual or artistic effort, the result is viewed, for the purpose of this study, as a new *work*."[37] The guidelines thus require that a significant degree of independent intellectual or artistic effort has taken place. This suggests that a serial with a title change must be analyzed in two areas: kind of change and significance of change.

Subject change seemed to be a kind of change that would help recognize a new work because a serial's intellectual content would change (e.g., broadening content or adding new areas of coverage). A function change also seemed to qualify because of the change in the kind of intellectual content provided (e.g., a change from a newsletter to a scholarly journal).

Identifying significant subject and function changes was more difficult. To accomplish this, three levels (high, medium, low) were used to rank the subject and function subcategories' significance in identifying a new work. The levels were assigned according to the degree of change represented by the subcategory. Thus a change in the overall content would be a high-level change whereas the addition of a book review section to a serial would be a low-level change.

The steps followed in ranking the subject and function subcategories and then coding the serials were as follows:

1. A level was assigned (high, medium, low) to each identified subject and function subcategory.
2. The assigned levels were added to the subject and function subcategory tables.
3. The level assigned to each serial for each relevant subject and function change was noted in appendix A (column 7).
4. The serials for which a high-level subject or function change occurred were noted in appendix A (column 7).
5. "None" was entered in appendix A (column 7) if no subject or function change occurred.

Table 1. All Reasons for Title Changes from Textual Content in Academic Versus Nonacademic Serials[i]

	Academic		Nonacademic	
Reason for Title Change	**All Reasons[ii]**	**% of Serials (*N* = 120)**	**All Reasons[ii]**	**% of Serials (*N* = 130)**
Subject change	60 (80)	50.0	62 (77)	47.7
Function change	64 (99)	53.3	92 (144)	70.8
Corporate change	22	18.3	8	6.2
Geographic change	7 (8)	5.8	3	2.3
Frequency change	17	14.2	4	3.1
Title word format change	17 (21)	14.2	28 (33)	21.5
Total	187 (247)		197 (269)	

i. This table (columns 1–3) is based on an original paper published in Taylor & Francis: Mavis B. Molto, "Characteristics of Serial Title Changes and Recognition of New Serial Works: Theoretical and Practical Implications," *Serials Review* 37, no. 4 (2011): 280, table 3. Nonacademic serials data were obtained from appendix A.

ii. Parenthesized numbers include multiple occurrences of a particular type of change (e.g., a subject change) for the same title.

Results

Findings were compiled from the collected data in the following areas, corresponding with the four research questions above: (1) Reasons for title changes, (2) Sources of information, (3) Subcategories explaining title changes, and (4) Evidence for new serial works.

Reasons for Title Changes

What are the reasons for title changes in academic and nonacademic serials? To answer this question, two sources of information were used: textual content and title words. The reasons found in each source were tabulated in two different ways: first by all reasons found for each title change, and then by the primary reason for each title change. Reasons were classified according to the six title-change categories noted above: subject change, function change, corporate change, geographic change, frequency change, and title-word format change. For some serials, there was just one reason for the title change and for others there were multiple reasons. Findings from the data collection are reported below.

Findings for All Reasons, from Textual Content

Table 1 provides a summary of all reasons found for the title changes, including multiple reasons for a single title change (e.g., a subject change as well as a function change), using textual content as the source. Comparative findings for the academic and nonacademic serials are shown in table 1 in an unordered listing by title-change category. Multiple reasons falling in the same category for a specific serial (e.g., two subject changes for the same serial) were counted only once, with a parenthesized number showing the count when including the multiple reasons.

Example: Title XYZ has had a title change for which three reasons were found: a subject change, a function change, and a frequency change in the serial. All three reasons would be included in the counts in table 1.

Findings for Primary Reasons, from Textual Content

Table 2 provides a summary of the primary reasons for title changes, with textual content as the source. A primary reason was defined as "the reason for a title change having most relevance in identifying a new work when using the *FRBR* guidelines for recognizing new works." The primary reason ranked highest among all reasons found for a particular title change according to the following priorities (from high to low): subject change, function change, corporate change, geographic change, frequency change, and title-word format change. A subject change was given first priority as it involves a change in intellectual content. A function change was given second priority because a change in function involves a change in the kind of intellectual content. The remaining types of changes were prioritized somewhat arbitrarily according to the expected effect of the change on the content of the serial. Comparative findings for the academic and nonacademic serials are shown in table 2 in an unordered listing by title-change category.

Example: Title XYZ, referred to above, has had a title change for which three reasons were found: a subject change, a function change, and a frequency change. The primary reason is the subject change because it has the highest rank in the prioritized list. Just the subject change would be included in the counts in table 2.

Findings for All Reasons, from Title Words

Table 3 provides a summary of all reasons found for the title changes, including multiple reasons for a single title

Table 2. Primary Reasons for Title Changes from Textual Content in Academic Versus Nonacademic Serials[i]

	Academic		Nonacademic	
Reason for Title Change	**Primary Reasons**	**% of Serials (*N* = 120)**	**Primary Reasons**	**% of Serials (*N* = 130)**
Subject change	60	50.0	62	47.7
Function change	37	30.8	54	41.5
Corporate change	6	5.0	2	1.5
Geographic change	3	2.5	1	0.8
Frequency change	8	6.7	0	0.0
Title word format change	6	5.0	11	8.5
Total	120	100.0	130	100.0

i. This table (columns 1-3) is based on an original paper published in Taylor & Francis: Mavis B. Molto, "Characteristics of Serial Title Changes and Recognition of New Serial Works: Theoretical and Practical Implications," *Serials Review* 37, no. 4 (2011): 280, table 4. Nonacademic serials data were obtained from appendix A in the current study.

Table 3. All Reasons for Title Changes from Title Words in Academic Versus Nonacademic Serials[i]

	Academic		Nonacademic	
Reason for Title Change	**All Reasons[ii]**	**% of Serials (*N* = 120)**	**All Reasons[ii]**	**% of Serials (*N* = 130)**
Subject change	69	57.5	93	71.5
Function change	62	51.7	39	30.0
Corporate change	34	28.3	18	13.8
Geographic change	26	21.7	26	20.0
Frequency change	12	10.0	4	3.1
Title word format change	60 (64)	50.0	78 (92)	60.0
Total	263 (327)		258 (350)	

i. This table (columns 1–3) is based on an original paper published in Taylor & Francis: Mavis B. Molto, "Characteristics of Serial Title Changes and Recognition of New Serial Works: Theoretical and Practical Implications," *Serials Review* 37, no. 4 (2011): 280, table 5. Nonacademic serials data were obtained from appendix A of the current study.

ii. Parenthesized numbers include multiple occurrences of a particular type of change (e.g., a subject change) for the same title.

change (e.g., a subject change as well as a function change), using title words as the source. Comparative findings for the academic and nonacademic serials are shown in table 3 in an unordered listing by title-change category. Multiple reasons falling in the same category for a specific serial (e.g., two function changes for the same serial) were counted only once, with a parenthesized number showing the count when including the multiple reasons.

Findings for Primary Reasons, from Title Words

Table 4 provides a summary of the primary reasons for title changes, with title words as the source. Primary reasons for titles changes were determined, as above, according to relevance in identifying a new work. The primary reason was the reason with the highest rank among all reasons found for a particular title change, according to the following priorities: subject change, function change, corporate change, geographic change, frequency change, and title-word format change. Comparative findings for the academic and nonacademic serials are shown in table 4 in an unordered listing by title change category.

Sources of Information

How does textual content compare with title words as a source of information in determining reasons for title changes in academic and nonacademic serials? To address this issue, two sets of data were collected: data from the combined sources and data specific to a single source. Findings are reported below.

Findings Using Combined Sources

Table 5 summarizes the findings for academic serials versus nonacademic serials when using information from the combined sources (i.e., textual content and title words) to identify all possible reasons for title changes. Counts are reported within each of the six title-change categories previously noted.

Table 4. Primary Reasons for Title Changes from Title Words in Academic Versus Nonacademic Serials[i]

	Academic		Nonacademic	
Reason for Title Change	Primary Reasons	% of Serials (*N* = 120)	Primary Reasons	% of Serials (*N* = 130)
Subject change	68	56.7	93	71.5
Function change	34	28.3	18	13.8
Corporate change	9	7.5	9	6.9
Geographic change	2	1.7	0	0
Frequency change	2	1.7	1	0.8
Title word format change	5	4.2	9	6.9
Total	120	100.1[ii]	130	99.9[ii]

i. This table (columns 1–3) is based on an original paper published in Taylor & Francis: Mavis B. Molto, "Characteristics of Serial Title Changes and Recognition of New Serial Works: Theoretical and Practical Implications," *Serials Review* 37, no. 4 (2011): 281, table 6. Nonacademic serials data were obtained from appendix A in the current study.
ii. Total is greater or less than 100 due to rounding.

Table 5. Reasons for Title Changes from Combined Sources in Academic Versus Nonacademic Serials[i]

	Academic		Nonacademic	
Reason for Title Change	Reasons from Combined Sources[ii]	% of Serials (*N* = 120)	Reasons from Combined Sources[ii]	% of Serials (*N* = 130)
Subject change	80	66.7	100	76.9
Function change	81	67.5	97	74.6
Corporate change	48	40.0	23	17.7
Geographic change	28	23.3	26	20.0
Frequency change	23	19.2	7	5.4
Title word format change	64	53.3	82	63.1
Total	324[iii]	270.0	335[iv]	257.7

i. This table (columns 1–3) is based on an original paper published in Taylor & Francis: Mavis B. Molto, "Characteristics of Serial Title Changes and Recognition of New Serial Works: Theoretical and Practical Implications," *Serials Review* 37, no. 4 (2011): 282, table 7. Nonacademic serials data were obtained from textual content in the sampled nonacademic serials.
ii. If multiple reasons were found for a title within the same category (e.g., two subject changes), only one occurrence was counted.
iii. Total reasons = 450 when including the double occurrence of duplicate reasons (126) found in both the textual content and the title words.
iv. Total reasons = 455 when including the double occurrence of duplicate reasons (120) found in both the textual content and the title words.

Table 6. Reasons for Title Changes Unique to a Single Source in Academic Versus Nonacademic Serials[i]

	Academic		Nonacademic	
Reason for Title Change	Reasons Unique to Textual Content[ii]	Reasons Unique to Title Words	Reasons Unique to Textual Content[ii]	Reasons Unique to Title Words
Subject change	11	20	7	38
Function change	19	17	58	5
Corporate change	14	26	5	15
Geographic change	2	21	0	23
Frequency change	11	6	3	3
Title word format change	4	47	4	54
Total	61	137	77	138

i. This table (columns 1–3) is based on an original paper published in Taylor & Francis: Mavis B. Molto, "Characteristics of Serial Title Changes and Recognition of New Serial Works: Theoretical and Practical Implications," *Serials Review* 37, no. 4 (2011): 282, table 8. Nonacademic serials data were obtained from textual content in the sampled nonacademic serials.
ii. If multiple reasons were found for a title within the same category (e.g., two subject changes), only one occurrence was counted.

Findings Using a Single Source

Table 6 summarizes the findings for academic serials versus nonacademic serials when using information from a single source (i.e., only textual content or only title words) to identify unique reasons for title changes found only in that source. Counts are reported within each of the six title-change categories previously noted.

Subcategories Explaining Title Changes

How can reasons for title changes be subcategorized for academic and nonacademic serials? To address this issue, the descriptions of why titles changed, taken from the textual content of the serials, were grouped into subcategories to more specifically describe the reasons for the title changes. Tables 7–9 list the subcategories identified for the academic and nonacademic serials, showing separate counts for each. Table 7 lists the subject subcategories, table 8 lists the function subcategories, and table 9 lists the corporate, geographic, frequency, and title word format subcategories.

Evidence for New Serial Works

Which subject and function subcategories represent changes that provide evidence for new serial works in academic and nonacademic serials? To answer this question, each subject and function subcategory assigned above, from descriptions in the textual content, was ranked according to the magnitude of evidence provided for a new work: high, medium, or low. Table 7 lists the subject subcategories according to the three levels, and table 8 lists the function subcategories according to the same three levels, with each table showing separate subcategory counts for the academic and nonacademic serials.

Comparison of Academic and Nonacademic Serials

What follows are comparisons between academic and nonacademic serials with title changes. The study was not designed to prove that significant differences exist between the two serial subpopulations because randomly selected samples would have been required to provide the needed evidence. The intent was merely to use the available data to identify preliminary differences that could later be tested further if needed. The findings from the data collection are compared below, showing the similarities and differences between academic and nonacademic serials with title changes. Comparisons are made within the four areas described above: (1) reasons for title changes, (2) sources of information, (3) subcategories explaining title changes, and (4) evidence for new serial works.

Reasons for Title Changes in Academic versus Nonacademic Serials

How do the reasons for title changes compare for academic serials versus nonacademic serials? To compare the two subpopulations, the data reported in tables 1–4 above were used. Tables 1 and 2 provide counts of title-change explanations found in the textual content of the serials whereas tables 3 and 4 provide counts of explanations derived from an examination of the title words. The academic and nonacademic serials had both similarities and differences in the reasons found for title changes. Comparisons between the two subpopulations are made below, first using textual content as the source and then using title words as the source.

Similarities (from textual content)

- Overall reasons most frequently found for a title change—academic (subject and function changes), nonacademic (same)
- Subject changes found overall—academic (50.0 percent), nonacademic (47.7 percent)
- Subject change as the primary reason for a title change—academic (50.0 percent), nonacademic (47.7 percent)

Differences (from textual content)

- Function changes found overall—academic (53.3 percent), nonacademic (70.8 percent)
- Function change as the primary reason for a title change—academic (30.8 percent), nonacademic (41.5 percent)

Similarities (from title words)

- Average number of reasons found for a title change—academic (2.19), nonacademic (1.98)
- Overall reasons most frequently found for a title change—academic (subject, function, and title word format changes), nonacademic (same)
- Primary reason most frequently found for a title change—academic (subject change), nonacademic (same)
- Primary reason next most frequently found for a title change—academic (function change), nonacademic (same)

Table 7. Subject Change Subcategories by Level of Evidence in Academic versus Nonacademic Serials[i]

	Academic		Nonacademic	
Subcategories by Level of Evidence	**Subcategories[ii]**	**% of All Descriptions (*N* = 247)[iii]**	**Subcategories[ii]**	**% of All Descriptions (*N* = 269)[iii]**
High				
Broadened content to a more inclusive field(s) of study	7		1	
Broadened geographic coverage	9		2	
Changed overall subject content	5		1	
Subtotal	21	8.5	4	1.5
Medium				
Added a subject(s)	9		10	
Broadened content to include other subjects	7 (8)		6	
Broadened content with more varied coverage	7		12	
Brought title into harmony with changes within the profession	0		2	
Brought title into harmony with content of serial	5		7	
Changed content to reflect developments in the field	9		7 (8)	
Changed overall emphasis or focus	4		23	
Increased emphasis on a subject(s)	9		1	
Narrowed content	1		2	
Stopped covering a subject(s)	2		0	
Subtotal	53 (54)	21.9	70 (71)	26.4
Low				
Brought title into harmony with stated scope of serial	5		2	
Subtotal	5	2.0	2	0.7
Total	79 (80)	32.4	76 (77)	28.6

i. This table (columns relating to academic serials) is based on an original paper: Mavis B. Molto, "Identifying Significant Changes in Serials with Title Changes in the Recognition of New Works," *Library Resources & Technical Services* 57, no. 4 (October 2013): 198, table 1. Nonacademic serials data were obtained from textual content in the sampled nonacademic serials.

ii. Parenthesized numbers include multiple occurrences of a subcategory for a specific title.

iii. *N* = Total number of title change descriptions analyzed; percentages are based on parenthesized numbers (when given).

Differences (from title words)

- Subject changes found overall—academic (57.5 percent), nonacademic (71.5 percent)
- Function changes found overall—academic (51.7 percent), nonacademic (30.0 percent)
- Title word format changes found overall—academic (50.0 percent), nonacademic (60.0 percent)
- Subject change as the primary reason for a title change—academic (56.7 percent), nonacademic (71.5 percent)
- Function change as the primary reason for a title change—academic (28.3 percent), nonacademic (13.8 percent)

Sources of Information in Academic versus Nonacademic Serials

How do the reasons for title changes from textual content versus title words compare for academic serials versus nonacademic serials? To compare the two subpopulations, the data collected in tables 5 and 6 above were used. Table 5 provides a summary of reasons for title changes found in the combined sources (textual content and title words) whereas table 6 tabulates reasons for title changes that are unique to a single source (only textual content or only title words). The academic and nonacademic serials had both similarities and differences in the reasons found in the two sources, both collectively and uniquely, as summarized below.

Table 8. Function Change Subcategories by Level of Evidence in Academic versus Nonacademic Serials[i]

	Academic		Nonacademic	
Subcategories by Level of Evidence	**Subcategories[ii]**	**% of All Descriptions (*N* = 247)[iii]**	**Subcategories[ii]**	**% of All Descriptions (*N* = 269)[iii]**
High				
Changed overall function of serial	17		15	
Changed overall purpose/function of magazine to match changes occurring within the sponsoring organization	0		2	
Changed targeted audience	0		16	
Subtotal	17	6.9	33	12.3
Medium				
Began including authoritative articles on special topics	2		0	
Began including commentaries [or discussions]	3		1	
Began including conference or symposia papers or plans	3		0	
Began including literature reviews or review articles	8 (9)		0	
Began including non-conference articles	2		0	
Began including reports	2		0	
Began providing more non-technical/readable articles having wider public appeal	0		4	
Began providing more technical content	0		2	
Began publishing original, scholarly, or research articles	9		0	
Began refocusing the content to meet readers' needs and wants	0		6	
Brought title into harmony with types of articles published	2		0	
Developed or expanded upon a function	4		4	
Increased emphasis on original, scientific, or conceptual articles	3		1	
Increased emphasis on real life stories	0		2	
Increased emphasis on the peer review process	3 (4)		0	
Narrowed the article selection policy	1		0	
Stopped including a function	1		2	
Subtotal	43 (45)	18.2	22	8.2
Low				
Added a bibliography section	2		2	
Added a book [or media] review section	2		2	
Added a commentary, discussion, or debate section	5 (7)		0	
Added a correspondence section	4		0	
Added a news section	3		2	
Added a notes section	4		0	
Added abstracts, resumes, or other new features	4 (5)		0	
Added an internet component to the publication	0		6	
Added new columns/ departments/ sections/ features	0		40 (41)	
Added theme or feature articles	0		3	
Began focusing on a specific theme in each issue	0		3	
Began publishing special issues	0		1	
Brought title into harmony with the publication's mission	0		5	
Changed mix of articles and/or features in the publication	0		1	

Table 8. Function Change Subcategories by Level of Evidence in Academic versus Nonacademic Serials (continued)[i]

Changed or updated a section or feature	7 (10)		14	
Improved quality and timeliness of content	0		5 (6)	
Increased or decreased number of articles or length of articles	0		3	
Subtotal	31 (37)	15.0	87 (89)	33.1
Total	91 (99)	40.1	142 (144)	53.6

i. This table (columns relating to academic serials) is based on an original paper: Mavis B. Molto, "Identifying Significant Changes in Serials with Title Changes in the Recognition of New Works," table 2, *Library Resources & Technical Services* 57, no. 4 (October 2013): 199. Nonacademic serials data were obtained from textual content in the sampled nonacademic serials.
ii. Parenthesized numbers include multiple occurrences of a subcategory for a specific title.
iii. *N* = Total number of title change descriptions analyzed; percentages are based on parenthesized numbers (when given).

Table 9. Corporate, Geographic, Frequency, and Title Word Format Change Subcategories in Academic versus Nonacademic Serials[i]

	Academic		Nonacademic	
Subcategories by Title Change Category	**Subcategories[ii]**	**% of All Descriptions (*N* = 247)**	**Subcategories[ii]**	**% of All Descriptions (*N* = 269)**
Corporate				
Added, changed, or dropped a sponsoring or affiliated organization	12		1	
Changed name of an associated organization	9		6	
Made organizational changes within the sponsoring organization	1		1	
Total	22	8.9	8	3.0
Geographic				
Broadened geographic realm of clientele and/or contributors to international	4 (5)		0	
Broadened geographic realm of clientele and/or contributors to regional or national	3		1	
Brought title into harmony with the geographic realm of the readers	0		2	
Total	7 (8)	3.2	3	1.1
Frequency				
Changed the frequency of publication	16		4	
Revived the publication after a lapse in publishing	1		0	
Total	17	6.9	4	1.5
Title Word Format				
Added an organization's name to the title to link the organization with the publication	1		1	
Changed the language of the title	1		0	
Clarified the meaning of the title	7		2	
Distinguished title from other similar titles	3		1	
Dropped words with negative or erroneous connotations from the title	0		4	
Merged dual titles associated with the publication	0		1	
Shortened [or simplified] the title	6		16	
Synchronized or branded the title to match the publisher's branding	0		3	
Updated the terminology in the title	3		5	
Total	21	8.5	33	12.3

i. Data were obtained from textual content in the sampled serials.
ii. Parenthesized numbers include multiple occurrences of a subcategory for a specific title.

Similarities

- Average number of reasons found for a title change (from combined sources)—academic (324/120 = 2.70), nonacademic (335/130 = 2.58)
- Subject changes found overall (from combined sources)—academic (66.7 percent), nonacademic (76.9 percent)
- Function changes found overall (from combined sources)—academic (67.5 percent), nonacademic (74.6 percent)
- Unique reasons found (from textual content versus title words)—academic (61 text, 137 title), nonacademic (77 text, 138 title)
- Unique title word format changes found (from textual content versus title words)—academic (4 text, 47 title), nonacademic (4 text, 54 title)

Differences

- Unique subject changes found (from textual content versus title words)—academic (11 text, 20 title), nonacademic (7 text, 38 title)
- Unique title word function changes found (from textual content versus title words)—academic (19 text, 17 title), nonacademic (58 text, 5 title)

Subcategories Explaining Title Changes in Academic versus Nonacademic Serials

How do the subcategories that explain title changes compare for academic serials versus nonacademic serials? To compare the two subpopulations, the subcategory data in tables 7–8, derived from the textual content of the serials, were used. Subcategories were assigned to the serials to provide a finer classification for explaining the title changes within the six broad categories. The subject subcategories are listed in table 7 and the function subcategories are listed in table 8. The academic and nonacademic serials had both similarities and differences in the identified subcategories, as shown below.

Similarities (from textual content)

- Subcategory heading counts—academic (48), nonacademic (51)
- Subject subcategory heading counts—academic (13), nonacademic (13)
- Function subcategory heading counts—academic (22), nonacademic (24)
- Subject subcategories—academic (12 same, 1 unique), nonacademic (12 same, 1 unique)
- Corporate subcategories—academic (3 same), nonacademic (3 same)

Differences (from textual content)

- Function subcategories—academic (9 same, 13 unique), nonacademic (9 same, 15 unique)
- Geographic subcategories—academic (1 same, 1 unique), nonacademic (1 same, 1 unique)
- Frequency subcategories—academic (1 same, 1 unique), nonacademic (1 same)
- Title word format subcategories—academic (5 same, 1 unique), nonacademic (5 same, 3 unique)

Evidence for New Serial Works in Academic versus Nonacademic Serials

How do the subject and function subcategories that provide evidence for new works compare for academic serials versus nonacademic serials? To compare the two subpopulations, the identified subject and function subcategories were analyzed. A subject or function change was required to identify a new work, according to the model used, whereas a high-level subject or function change provided the concluding evidence for a new work. Data from several tables and appendixes in this and a previous study were used to compare the evidence for new works found in the two subpopulations.

Appendix A in the current study provided information on new works for the nonacademic serials whereas appendix A in a previous study conducted by the author provided information on new works for the academic serials.[38] The two appendixes contained level-of-evidence codes (high, medium, or low) for the primary subject and function subcategories assigned to the serials. Tables 7–8 provide level-of-evidence information for all subject and function subcategories (primary and nonprimary). Information on serials for which no subject or function subcategory was assigned was obtained from table 2.

The academic and nonacademic serials had both similarities and differences with regard to the evidence found for new works. Only the findings from the textual content of the serials were used in the comparisons below.

Similarities (from textual content)

- New works identified through a primary high-level subject/function change—academic (35/120 = 29.2 percent), nonacademic (32/130 = 24.6 percent)
- Primary medium-level subject/function changes—academic (56/120 = 46.7 percent), nonacademic (58/130 = 44.6 percent)
- Low-level subject changes—academic (5/80 = 6.3 percent), nonacademic (2/77 = 2.6 percent)
- High-level function changes—academic (17/99 = 17.2 percent), nonacademic (33/144 = 22.9 percent)

Differences (from textual content)

- New works identified through a primary high-level subject change—academic (19/120 = 15.8 percent), nonacademic (4/130 = 3.1 percent)
- New works identified through a primary high-level function change—academic (16/120 = 13.3 percent), nonacademic (28/130 = 21.5 percent)
- Primary low-level subject/function changes—academic (6/120 = 5.0 percent), nonacademic (26/130 = 20.0 percent)
- No subject or function change occurred—academic (23/120 = 19.2 percent), nonacademic (14/130 = 10.8 percent)
- High-level subject changes—academic (21/80 = 26.3 percent), nonacademic (4/77 = 5.2 percent)
- Medium-level subject changes—academic (54/80 = 67.5 percent), nonacademic (71/77 = 92.2 percent)
- Medium-level function changes—academic (45/99 = 45.5 percent), nonacademic (22/144 = 15.3 percent)
- Low-level function changes—academic (37/99 = 37.4 percent), nonacademic (89/144 = 61.8 percent)

Highlights of Similarities and Differences between Academic and Nonacademic Serials

The following are highlights from the foregoing comparisons of similarities and differences between the academic and nonacademic serials. The comparisons are grouped by the source of information used, as follows: title words versus textual content, title words alone, and textual content alone.

Title Words versus Textual Content as the Source

When comparing findings from title words versus textual content, the academic and nonacademic serials were similar in that many more reasons for title changes were found in the title words than in the textual content. They were also similar in the proportions of unique title-word format changes found in each source but different in the proportions of unique subject changes and unique function changes found. Details follow:

- Similar numbers of reasons found—academic (137 title versus 61 text), nonacademic (138 title versus 77 text)
- Similar numbers of unique title-word format changes—academic (4 text versus 47 title), nonacademic (4 text versus 54 title)
- Different numbers of unique subject changes—academic (20 title versus 11 text), nonacademic (38 title versus 7 text)
- Different proportions of unique function changes—academic (19 text versus17 title), nonacademic (58 text versus 5 title)

Title Words as the Source

When using title words as the source, it was found that the academic and nonacademic serials were similar in the most frequently found reasons for a title change. The subpopulations were different in the proportions of primary reasons for title changes that were subject changes versus function changes. Details follow:

- Similar frequently found reasons—academic (subject, function, and title word format changes), nonacademic (same)
- Different proportions of subject changes as the primary reason for a title change—academic (56.7 percent), nonacademic (71.5 percent)
- Different proportions of function changes as the primary reason for a title change—academic (28.3 percent), nonacademic (13.8 percent)

Textual Content as the Source

When using textual content as the source, it was found that the academic and nonacademic serials were similar in the most frequently found reasons for a title change. The subpopulations were also similar with regard to the kinds and proportions of subject changes that occurred. They were different in the kinds and proportions of function changes found. A similar proportion of new works was identified for each subpopulation but through different kinds and proportions of subject versus function changes. The subpopulations also differed in the proportions of serials that had no subject or function change. Details follow:

- Similar frequently found reasons—academic (subject and function changes), nonacademic (same)
- Similar proportions of subject changes as the primary reason for a title change—academic (50.0 percent), nonacademic (47.7 percent)
- Similar subject subcategories—academic (12 same, 1 unique), nonacademic (12 same, 1 unique).
- Similar proportions of new works identified—academic (29.2 percent), nonacademic (24.6 percent)
- Different proportions of function changes as the primary reason for a title change—academic (30.8 percent), nonacademic (41.5 percent)
- Different function subcategories—academic (9 same, 13 unique), nonacademic (9 same, 15 unique)
- Different proportions of new works identified from subject versus function changes—academic (subject

15.8 percent, function 13.3 percent), nonacademic (function 21.5 percent, subject 3.1 percent)
- Different proportions of serials with no subject or function change—academic (19.2 percent), nonacademic (10.8 percent)

Limitations of Findings

Limitations in applying the findings are discussed below in the four areas covered in the study: reasons for title changes, sources of information, subcategories explaining title changes, and evidence for new serial works.

Reasons

The reasons found for title changes can be generalized to all academic and nonacademic serials with the following limitations: only English-language serials were sampled, thus limiting generalizations to serials in the English language; the samples were not randomly selected, thus requiring that generalizations be tempered until further testing or sampling can be done; and certain kinds of academic and nonacademic serials had prominence in the samples, again suggesting that further sampling may be needed. The sample of academic serials focused on scholarly serials in the social sciences, humanities, and life sciences. The sample of nonacademic serials focused on trade and consumer serials.

Sources

There are pros and cons to using title words versus textual content in identifying reasons for title changes. Two limitations are noted in this regard: First, title words are often misleading in conveying why a title changed because of the personal interpretations that must be made for the word changes; consequently, generalizing from findings that use title words as the source has limitations. Second, in contrast, textual content (e.g., editorials) generally offers a clear explanation for the title change; however, about half of the sampled serials had no explanation in the text, thus limiting the usefulness of this source. An alternative for serials lacking a textual explanation would be to go directly to the editor or publisher for the information.

Subcategories

The subcategories devised to explain the title changes can be generalized with the following limitations: First, bias could exist in the way the reasons for title changes were grouped within the subcategories; however, the author anticipated that the proposed subcategories would provide a starting point that could be adjusted through testing and use. Second, the subcategories do not cover all possible explanations for title changes that might occur and will require that additions be made over time.

Evidence

The proposed approach for recognizing a new work gave prominence to the occurrence of a high-level subject or function change described in the textual content of the serial. The subject and function changes identified in the study were grouped into subcategories that were then ranked according to the evidence provided for a new work. Two limitations relating to the ranking are noted: First, bias could exist in assigning levels to the subcategories. For example, some high-level subcategories might have been classed as medium-level subcategories, and vice versa. The assignment of levels to the subcategories, however, was preliminary, pending input from the serials community. Second, a related issue was how broadly or narrowly to define the concept of a significant change. With a broader interpretation, more new works would be identified, and with a narrower interpretation fewer new works would be identified. This issue will also require discussion by the serials community.

Recommendations

The purpose of the study was to compare the characteristics of academic and nonacademic serials with title changes and to develop a collective strategy for identifying new works for these serials. Using findings from the study, two proposals were developed for improving the recognition of new works in *RDA* for serials with title changes. Option A, the ideal approach, correlates with the view of a work as defined in *RDA*, whereas option B, the practical approach, is based on a broader view of the work. The option A rules would require the identification of a significant change in the subject or function of the serial. The option B rules would only require a publisher statement indicating that a totally new serial has emerged. Before discussing the recommendations further, some general observations will be made, along with the identification of factors by which each option will be evaluated.

General Observations

The following general observations are made from points noted in the literature and from examining the current *RDA* rules and working with the serials in the two samples.

Sources of Information

The study's findings show that one cannot determine whether a new work has emerged because of changes in title words because publishers sometimes change titles for

reasons unrelated to having to do with a change in content or purpose (e.g., to shorten the title or to make the title more appealing). Determining the extent of change in the serial itself from a change in the title is also difficult. Of more value as a source of information are statements by the publisher or editor as to why the title changed.

Concept of a Work

RDA is based on the *FRBR* conceptual model in which the concept of a work plays a prominent role. However, the *RDA* rules for recognizing new works through major changes in the title proper do not (or only coincidentally) identify works that match the *RDA* definition of a work as a distinct intellectual or artistic creation. The rules do not provide procedures for identifying significant changes in the serial, which is needed to determine whether the serial has changed sufficiently to warrant recognition as a new work.[39]

Boundary of a Work

No clear way has been found to determine where boundaries between works should be drawn for serials with title changes because serials are in a constant state of change. Attempts can be made to develop criteria for recognizing significant changes and to draw corresponding boundaries, but the boundaries will be artificial because of the difficulty in distinguishing significant from insignificant changes.

Harmonization Requirements

Descriptions of the international rule-harmonization efforts in the early 2000s indicate that worthy but somewhat conflicting requirements were set for the rule revision process: the rules should recognize only significant title changes, the rules should recognize deliberate changes in the work, and the rules should be easily understood by a wide variety of people. Significant changes in a title do not always correlate with significant changes in the serial's content or purpose. Also, devising mechanisms that would be easily understood and applied by a variety of people is ideal but does not allow for the analysis needed to confirm that a new work has emerged.

Factors to Consider in Rule Revisions

The recommendations for RDA rule changes will be evaluated relevant to the following conditions deemed important from points made in the literature as well as when looking at workflow and the requirements of the *FRBR* model:

1. Number of new works identified: What percentage of serials with title changes would potentially be identified as new works using this approach?
2. Rationale for a new work: What is the rationale underlying the rules relative to identifying new works?
3. Clarity: Would the rules be understandable to catalogers as well as noncatalogers working with serials?
4. Consistency: Could the rules be consistently applied by various catalogers?
5. Efficiency: How much time would be required for a cataloger to apply the rules?
6. Latest or successive entry: If the rules incorporate either latest-entry or successive-entry conventions, how would the issues relevant to these conventions be solved?
7. Harmonization: How would the rules work with the ISBD(CR) and ISSN international standards?[40]
8. BIBFRAME: How would the rules potentially work in a BIBFRAME environment?

Option A—Ideal Approach

Option A represents the ideal approach for recognizing new works for serials with title changes. This option requires the identification of either a significant subject change or function change in the serial and draws on findings from the academic and nonacademic serial samples. As the characteristics of the two serial subpopulations were found to be similar in many ways, the recommendations previously made for the academic serials can also be applied to the nonacademic serials, with two addendums, consisting of additional types of function changes that would qualify a serial as a new work.[41] The recommendations below would require changes to the following *RDA* rules: rule 6.1.3.2.2, "Major change in the title proper," and 2.3.2.13, "Major and minor changes in the title proper of serials."[42] The recommendations relate only to title changes in serials and not to other kinds of changes, such as a change in responsibility. The proposed rules are specific to English-language serials but are general enough to have application to non-English-language serials as well, pending additional sampling and testing.

Option A Recommendations

Source

Use a credible source to determine the reason for the title change, preferably an explanation within the text of the serial's first issue under the new title.

- If no explanation is found in the serial, assume no significant subject or function change has occurred.
- Optional: If no explanation is found in the serial, contact the editor or publisher directly for an explanation. This may not be possible if the title change occurred in the past and the editor or publisher is no longer available or knowledgeable about the change.

New Work

Create an access point for a new work when the reason(s) for the title change meets one of the following conditions:

- The subject content of the serial has changed significantly in one of the following ways:
  - changed overall subject content
  - broadened content to a more inclusive field(s) of study
  - broadened geographic coverage
- The function of the serial has changed significantly in one of the following ways:
  - changed overall function/purpose of serial
  - changed overall function/purpose of serial to match changes occurring within the sponsoring organization
  - changed targeted audience[43]

Analysis of Recommendations

Number of New Works Identified

With this option, approximately 12–15 percent of serials with title changes would be recognized as new works because of findings from the sampling in which about half of the presampled serials had no explanation for the title change and of those having an explanation (250) 25–30 percent had a significant subject or function change.

Rational for a New Work

This option assumes that serials with title changes become new works because of significant subject or function changes in the serial. The proposed rules are founded on the *RDA* definition of a work as a distinct intellectual or artistic creation along with the *FRBR* guidelines for modified works, discussed previously. Further thought is needed, along with input from the serials community, on where the line should be drawn between a significant and insignificant change.

Clarity

The rules are straightforward but would require interpretation and judgment when determining whether a significant change has occurred. The rules thus might not be easily understood by all people working with serials, especially noncatalogers.

Consistency

There would likely be some inconsistency in applying the rules because of the judgment required in identifying significant changes.

Efficiency

Minimal time would be required to apply the rules, which would consist of the following steps: (1) check the serial text for the reason for the title change; (2) if no reason is given, do not create a new record; (3) if a reason is given, apply the criteria for determining whether a significant subject or function change has occurred; and (4) if a significant change has occurred, create a new record or access point. Less time would be required with this approach than with the current *RDA* rules because fewer new records would be created.

Successive Entry

This option applies successive-entry principles. A major issue with successive entry is that multiple records must be created, causing issues for catalog users. However, a minimal number of new records would be created with this option, which lessens the problem.

Harmonization

The new rules would be in conflict with the current ISBD(CR) and ISSN international standards, but the ISSN rules are up for revision in 2017, including plans to consider possible changes to the title-change rules.

BIBFRAME

It is not known how the rules would work with BIBFRAME, the new framework being tested to replace MARC. BIBFRAME will not consist of records as we currently know them and will instead link information. How successive entry cataloging will work in this new environment is yet to be determined. Whatever problems may occur, however, would likely be similar for both the rules proposed here and the current *RDA* rules as both are based on successive-entry principles.

Option B—Practical Approach

Option B represents a more practical approach for recognizing new works for serials with title changes. This option requires a publisher statement indicating the serial has started over as a completely new serial. The recommendations below would require changes to the following *RDA* rules: rule 6.1.3.2.2, "Major change in the title proper," and rule 2.3.2.13, "Major and minor changes in the title proper of serials."[44] The recommendations relate only to title changes in serials and not to other kinds of changes, such as a change in responsibility. The proposed rules are specific to English-language serials but are general enough to have application

to non-English-language serials as well, pending additional sampling and testing.

Option B Recommendations

Source

Use a credible source to determine the reason for the title change, preferably an explanation within the text of the serial's first issue under the new title.

- If no explanation is found in the serial, assume no qualifying change has occurred.
- Optional: If no explanation is found in the serial, contact the editor or publisher directly for an explanation.

New Work

Create an access point for a new work when a publisher statement is found similar to the following: "The serial has started over as a completely new serial."

Analysis of Recommendations

Number of New Works Identified

With this option, possibly 1 percent of serials with title changes would be recognized as new works because of findings from the sampling in which about half of the presampled serials had no explanation for the title change and of those having an explanation (250) six potential instances occurred (from the academic sample, twenty *Population*, thirty-three *International Affairs*, thirty-four *International Affairs Review Supplement*; from the nonacademic sample, thirty-seven *ColoradoBiz*, thirty-eight *ColorLines Magazine*, eighty-six *Nature Canada*).

Rationale for a New Work

This option assumes that serials with title changes remain the same work through successive title changes because of the constant change that occurs in serials and the difficulty in setting boundaries between one work and another. An exception is for the limited circumstance in which the publisher indicates that the serial has started over as a completely different serial. Further investigation is needed, including input from the serials community, to identify the varying language publishers might use to indicate the start of a new serial.

Clarity

The rules are straightforward but would require interpretation and judgment when determining whether a serial has started over. The rules thus might not be easily understood by all people working with serials, especially noncatalogers.

Consistency

There would likely be some inconsistency in applying the rules because the judgment required in determining if a serial has started over.

Efficiency

Minimal time would be required to apply the rules, which would consist of the following steps: (1) check the serial text for the reason for the title change; (2) if no reason is given, do not create a new record; and (3) if a reason is given and indicates a totally new serial has evolved, create a new record or access point. Less time would be required with this approach than with the current *RDA* rules because the need to create a new record would be rare.

Latest Entry

This option applies latest-entry principles. A major issue with latest entry is long records because information from all title changes must be entered on a single record. A way of dealing with this might be to collapse the details in records, similar to what is done in complex databases (e.g., the *RDA* Toolkit, which allows expanding and collapsing of rule details).

Harmonization

The new rules would conflict with the current ISBD(CR) and ISSN international standards, but the ISSN rules are due for revision in 2017, including plans to consider possible changes to the title change rules.

BIBFRAME

It is not known how the rules would work with BIBFRAME, the new framework being tested to replace MARC. BIBFRAME will not consist of records as we currently know them and will instead link information. Thus there will not be an issue with long records, a concern with latest entry cataloging.

Conclusion

The purpose of the study was to compare the characteristics of academic and nonacademic serials with title changes and to develop a collective strategy for identifying new works for these serials. The characteristics of academic and nonacademic English-language serials were found to be similar in some ways and different in others. Subject and function changes were the most frequently found reasons for title

changes for both subpopulations, according to explanations found in the sampled serials. There were similarities and differences in the kinds and frequencies of subject and function changes that occurred when a title changed, as indicated by the subcategories used to classify the changes. The subject subcategories were mostly the same for the academic and nonacademic serials whereas the function subcategories were more often different than the same.

Using findings from the study, two proposals were developed for improving the recognition of new works in *RDA* for serials with title changes: Option A, the ideal approach, follows closely from the findings of the study, requiring a significant subject or function change to occur in the serial. Option B, the practical approach, requires that a publisher statement occur indicating the discontinuance of the previous serial and the start of a completely new serial. Both approaches would result in fewer new records than with the current *RDA* major/minor rules, with option B resulting in the fewest number of new records.

The two approaches were analyzed according to several criteria to determine how efficiently the rules could be applied and the expected consistency of the results. With both options, minimal time would be required to follow the steps required, including checking the text for the reason(s) for the title change and if a qualifying change occurs creating a new record or access point. Option A would be problematic, however, because of the difficulty in defining a significant change. Option B would be less problematic in that a specific statement would be required indicating the start of a new serial. Inconsistency is likely with both options in how the rules would be applied by various catalogers.

The timing of rule revision is important in light of the efforts that have been made to harmonize rules on an international level. The "Meeting of Experts" in 2000 led to the synchronization of the rules for major and minor title changes in serials between *AACR2*, ISBD(S), and the *ISDS Manual* (for ISSN assignment). Since the ISSN rules are currently under review, including consideration of whether the title-change provisions should be updated, the time seems right for also examining the *RDA* major/minor rules, a carryover from *AACR2*.

Further research relevant to title changes for serials could be pursued in several areas, including the following:

- Study the characteristics of academic serials with title changes in additional disciplines, such as serials in the physical sciences.
- Study the characteristics of nonacademic serials with title changes for additional subpopulations, such as newspapers, annuals, bulletins, catalogs, and directories, as well as government publications.
- Study the practicality of identifying new works for serials with title changes using the approaches suggested in the current study.
- Seek input from the serials community on where the dividing line should be between a significant and insignificant subject or function change in a serial with a title change.
- Repeat the current study with a sample of non-English-language serials to determine whether additional strategies are needed to identify new works for serials in non-English languages.

References

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42. *RDA*, rule 6.1.3.2.2 and rule 2.3.2.13.
43. The the last two items in this list were added from the nonacademic serial findings.
44. *RDA*, rule 6.1.3.2.2 and rule 2.3.2.13.

Appendix A. Sample of Nonacademic Serials with Title Changes[i]

No.	New Title[ii]	Old Title	Format[iii]	Type of Change[iv] (textual content)	Type of Change[iv] (title words)	Evidence for New Work[v]
1	AARP Modern Maturity 2002	Modern Maturity	p	U	c	highU
2	AB Bookman's Weekly 1967	Antiquarian Bookman	p	FFF	f q	none
3	Advisor Today 2000	Life Association News	e	C	c f s u	none
4	America 1909	The Messenger	e	S U	g s u	medS, lowU
5	The American (Online) 2006	American Enterprise	e	S U	f s	medS, medU
6	American Banker Magazine 2011	US Banker	e	UU	u	lowU2
7	American City & County 1975	American City	p	SS	s	medS2
8	American Craft 1979	Craft Horizons with Craft World	p	UU	f g s	medU, lowU
9	American History (Leesburg) 1994[ii]	American History Illustrated	p	F S U	ff	medS, lowU
10	American Machinist 1988	American Machinist and Automated Manufacturing	p	F	f s	none
11	The American Scholar 1932	Phi Beta Kappa Key	p	UU	c f g s	lowU2
12	Appalachia 1967[ii]	Appalachian Digest	p	S U	f u	medS, medU
13	Appliance Design 2004	Appliance Manufacturer	e	S	s	medS
14	Appliance Magazine 1969	MPM Metal Products Manufacturing	p	F S	ff s u	medS
15	Architect 2006	Architecture	p	S U	s	medS, medU
16	Art on Paper 1998	On Paper	p	U	s	highU
17	Artnews 1923	American Art News	e	G S	f g s	lowS
18	Asia-Pacific Perspectives 2003	Pacific Friend	p	S	g s	medS
19	Back Stage East 2005	Back Stage	e	S U	g s	medS, lowU
20	Barron's 1994	Barron's National Business and Financial Weekly	m	U	f g q s	lowU
21	Beijing Review 1979	Peking Review	p	S U	f	medS, lowU
22	BioCycle 1981	Compost Science - Land Utilization	p	F S	f s	medS
23	Booklist 1969	The Booklist and Subscription Books Bulletin	p	C U	f s u	lowU
24	Broadcasting & Cable 1993	Broadcasting (Washington)	p	S U	f s	medS, lowU

No.	New Title[ii]	Old Title	Format[iii]	Type of Change[iv] (textual content)	Type of Change[iv] (title words)	Evidence for New Work[v]
25	Business Horizons 1958	Indiana Business Review	p	S UU	f g s u	highU2,medS
26	BusinessWeek 1929[ii]	Magazine of Business	p	UU	f q u	highU, lowU
27	California Wild 1997	Pacific Discovery	p	SS U	g s	medS2, lowU
28	Campaigns & Elections 2010	Politics	p	U	s	lowU
29	Canada's History 2010	The Beaver	e	U	g s	lowU
30	Capitol Ideas 2010	State News	e	S U	s u	medS, lowU
31	Carnegie Reporter 2000	Carnegie Quarterly	p	Q S	q u	medS
32	Chain Store Age 1995	Chain Store Age Executive with Shopping Center Age	p	U	f s	lowU
33	Child Education Plus 2007	Child Education	p	U	u	lowU
34	Civil Engineering (Reston) 1983	Civil Engineering - ASCE	m	U	c ff	lowU
35	Civil War Times 2002	Civil War Times Illustrated	e	UU	f	medU, lowU
36	CMA Magazine (English Edition) 2011	CMA Management	e	UU	f u	highU, lowU
37	ColoradoBiz 1999	Colorado Business Magazine	e	UU	ff u	highU, medU
38	ColorLines Magazine 1998	Third Force	e	S U	s u	highU, medS
39	Common Ground (Washington, DC) 1996	Federal Archeology	p	C S U	f s	medS. lowU
40	Community Banker (Washington, DC 2000) 2000	America's Community Bankers	e	S	ff g s	medS
41	The Conference Board Review 2006	Across the Board	e	F U	c u	lowU
42	Connected Planet 2009	Telephony	e	S U	s	medS, lowU
43	Contract 2000	Contract Design	e	F	f s	none
44	Control Solutions International 2003	Control Solutions	e	S	g s	highS
45	Current Health Kids 2010	Current Health 1	e	U	s	lowU
46	Dance Teacher 1999	Dance Teacher Now	p	UU	f	lowU2
47	Digital Content Producer 2006	Video Systems	e	S U	s	medS, lowU

No.	New Title[ii]	Old Title	Format[iii]	Type of Change[iv] (textual content)	Type of Change[iv] (title words)	Evidence for New Work[v]
48	Diversity Employers Online 2011	Black Collegian Online	e	UU	s	highU2
49	Econtent 1999	Database	p	F S	s	medS
50	EDN 1961	Electrical Design News	p	F	ff	none
51	EHS Today 2008	Occupational Hazards	e	S	f s	medS
52	Embedded Systems Design 2005	Embedded Systems Programming	e	S	s	medS
53	ENR 1987	Engineering News-Record	p	F	ff	none
54	Event DV 2004	EMedia Magazine	e	SS U	s u	medS2, lowU
55	FDA Consumer 1972	FDA Papers	p	U	s u	highU
56	Finance and Development (Print) 1968[ii]	Fund and Bank Review	p	UU	f s u	highU, medU
57	Financial Management 2000	Management Accounting	e	S U	s	highU, medS
58	Foreign Affairs 1922	The Journal of International Relations	e	UUUU	f u	highU2, lowU2
59	Games for Windows 2006	Computer Gaming World	e	U	s	highU
60	Global Cosmetic Industry 1999[ii]	DCI	e	S	f g s	medS
61	Golf Journal 1967[ii]	USGA Golf Journal	p	S U	c f	highU, medS
62	GP Solo 2000	General Practice, Solo, and Small Firm Lawyer: The Complete Lawyer	e	S	ff s	medS
63	Graphic Arts Monthly 1987	Graphic Arts Monthly and the Printing Industry	p	UUU	f s	lowU3
64	Headway 1996	National Minority Politics	e	FF S UU	f g s	highU, medS, lowU
65	Hotel Management 2011	Hotel and Motel Management	e	S U	f s	highU, medS
66	HR Magazine 1990	Personnel Administrator	p	C UU	ff s u	lowU2
67	ICIS Chemical Business. Americas 2006[ii]	Chemical Market Reporter	e	UUU	c g s u	lowU3
68	IEEE Signal Processing Magazine 1991	IEEEASSP Magazine	p	C	c	none
69	IEEE Spectrum 1964	Electrical Engineering	e	C S UU	c s	highS, medU, lowU
70	Industrial Engineer 2003	IIE Solutions	e	U	c	highU

No.	New Title[ii]	Old Title	Format[iii]	Type of Change[iv] (textual content)	Type of Change[iv] (title words)	Evidence for New Work[v]
71	Inside Smithsonian Research 2003	Smithsonian Institution. Research Reports	e	UUUU	f u	lowU4
72	Insight into Diversity 2009	Affirmative Action Register	e	S U	s u	medS, lowU
73	Internet at Schools 2011	MultiMedia & Internet at Schools	e	F S	f s	medS
74	JA 1991	Japan Architect	p	Q U	ff	lowU
75	Kiplinger's Personal Finance 2000	Kiplinger's Personal Finance Magazine	m	UU	f u	lowU2
76	Library Leadership & Management 2009	Library Administration and Management	e	C S	s	medS
77	Library of Congress Magazine 2012	Library of Congress Information Bulletin	p	U	f u	highU
78	Long-Term Living 2008	Nursing Homes	e	S U	s	medS, lowU
79	Material Culture 1984	Pioneer America	e	SSS UU	g s	medS3, medU, lowU
80	Minnesota History 1925	Minnesota History Bulletin	e	UUU	f u	highU, medU, lowU
81	Musical Mainstream (Large Print Edition) 1977	New Braille Musician	p	UU	f s	medU, lowU
82	National Parks 1981	National Parks and Conservation Magazine	p	F S U	f s u	highU, lowS
83	National Underwriter. Life & Health 2004	National Underwriter. Life and Health Financial Services	e	U	f s	highU
84	National Underwriter. P & C 2004	National Underwriter. Property & Casualty - Risk & Benefits Management Edition	e	UU	ff s	lowU2
85	Natural History 1919	The American Museum Journal	p	F S U	f g s u	medS, medU
86	Nature Canada 1972	Canadian Audubon	p	C S U	s	highS, highU
87	Network World 1986	On Communications	e	U	s	lowU
88	New Architect 2002	Web Techniques	e	F S	s	medS
89	New Statesman 1996	New Statesman & Society	e	F	f s	none
90	Northern Gardener 2000	Minnesota Horticulturist	p	F S	f g s	medS
91	Nuclear Engineering International 1968	Nuclear Engineering	p	G	g s	none
92	Office Solutions 2000[ii]	Office Systems (Year)	p	UU	s	lowU2
93	OfficePro 1997	The Secretary	e	F U	f s	highU

No.	New Title[ii]	Old Title	Format[iii]	Type of Change[iv] (textual content)	Type of Change[iv] (title words)	Evidence for New Work[v]
94	Outsourced Logistics 2008	Logistics Today	e	SSS	s	highS, medS2
95	PC Magazine (Print) 1986	PC: The Independent Guide to IBM Personal Computers	p	S U	c f s u	medS, lowU
96	People & Strategy 2008	Human Resource Planning	p	S UU	s	highU, medS, lowU
97	Preservation 1996	Historic Preservation	p	FF U	f s	lowU
98	The Presidency 1998	Educational Record	e	S U	s u	medS, lowU
99	Professional Builder 1993	Professional Builder and Remodeler	p	F U	f s	medU
100	Professional Photographer 1999	Professional Photographer Storytellers	p	SSS U	f s	medS3, lowU
101	Prologue (Washington) 1969	National Archives Accessions	p	UUUU	c ff g s u	highU2, lowU, medU
102	PT in Motion 2009	PT - Magazine of Physical Therapy	e	F UU	f u	medU, lowU
103	Quality Progress 1968	Industrial Quality Control	p	S UU	f s	medS, lowU2
104	Raising Black [and Biracial] Children 1999[ii]	Black Child: the African	e	U	s	medU
105	Rosie 2001	McCall's	m	S UU	c	medS, medU, lowU
106	Russian Life 1993	Soviet Life	p	SSS	f g s	medS3
107	Sales and Marketing Management 1975	Sales Management	m	F	s	none
108	Salt Lake 1998[ii]	Salt Lake City	p	F	f	none
109	Saturday Evening Post 1839	Atkinson's Evening Post and Philadelphia Saturday News	e	S U	f g s u	medS, lowU
110	Scandinavian Review 1975	The American-Scandinavian Review	p	U	f g s	highU
111	School Library Monthly 2009	School Library Media Activities Monthly	e	F UUU	f s	medU, lowU2
112	Science News 1966	Science News Letter	e	F	f u	none
113	Sierra 1977	Sierra Club Bulletin	p	UU	c f u	highU, lowU
114	Skeptical Inquirer 1978	The Zetetic	p	Q U	f s	lowU
115	Sound & Vision 2001[ii]	Stereo Review's Sound and Vision	p	S	f s u	medS

No.	New Title[ii]	Old Title	Format[iii]	Type of Change[iv] (textual content)	Type of Change[iv] (title words)	Evidence for New Work[v]
116	Strategic Finance 1999	Management Accounting	p	Q SS UU	s	medS2, lowU2
117	Supermarket Business 1979	Supermarketing	m	S UUU	s	medS, medU, lowU2
118	Sustainable Facility 2007	Energy & Power Management	e	S	f s	medS
119	T + D 2001	American Society for Training and Development. Training and Development	e	SS	c ff g	medS2
120	TDR 1988	The Drama Review	e	F	ff	none
121	Tech Directions 1992	School Shop - Tech Directions	p	UU	f s	highU, lowU
122	USA Today (Valley Stream) 1978	Intellect	m	G SS U	f g s	medS2, lowU
123	Vibrant Life 1985	Your Life and Health	p	FF UU	f s	lowU2
124	Warrior-Citizen 2007	Army Reserve Magazine	e	UU	c f s u	lowU2
125	Whole Earth 1997	Whole Earth Review	p	UUU	f u	medU, lowU2
126	Woman and Earth 1992[ii]	Woman and Russia	e	SS	g s	medS2
127	Workforce Management 2003	Workforce	p	S UU	s	medS, lowU2
128	World of Work 1992	ILO Information	p	UU	c	highU, lowU
129	World Press Review 1980	Atlas World Press Review	p	F	c f	none
130	World Today 1945	Bulletin of International News	e	UU	f u	medU2

i. Sample derived from serials listed in Ulrichsweb.
ii. Year began: obtained/clarified when needed from OCLC records.
iii. Format of serial sampled: e = electronic, m = microfilm, p = print.
iv. Type of change: C/c = Corporate change; F/f = Title word format change; G/g = Geographic change; Q/q = Frequency change; S/s = Subject change; U/u = Function change.
v. Evidence for new work: highS/U = high level of evidence from a Subject/Function change (32); medS/U = medium level of evidence from a Subject/Function change (58); lowS/U = low level of evidence from a Subject/Function change (26); none = no evidence (14). Numbers following codes indicate more than one occurrence of the subject or function change (e.g., "medU2" indicates two occurrences of a medium level function change).

Appendix B. Title Change Categories[i]

Category	Textual Content Guidelines[ii]	Title Word Guidelines[ii]
Corporate Change	Changes in [or within] the serial's corporate, society, or other affiliations, including name changes Example: changed Club name 1. Bulletin of the Torrey Botanical Club 2. Journal of the Torrey Botanical Society	Changes, additions, or deletions of corporate, society, or other organizational names in the title Example: deleted Federation name 1. Research journal of the Water Pollution Control Federation 2. Water environment research
Title Word Format Change	Changes in the serial's title words for the purpose of: clarifying title, distinguishing title from another title, updating terminology, changing language, shortening title, [making title appealing to a broader or different audience, emphasizing corporate sponsorship, or developing consistency with a publisher's/sponsor's other publications] Example: updated terminology 1. Black American Literature Forum 2. African American review	Changes in the format of the title or title words, including: replacing acronym with spelled-out form or other words, replacing spelled-out form with acronym, adding words to acronym, adding/changing qualifying words, updating/[simplifying] terminology, changing language, shortening title Example: shortened title 1. Journal of the Royal African Society 2. African affairs
Geographic Change	Changes in the [geographic realm of the] serial's clientele, membership, or contributors Example: changed to national 1. Midwest journal of political science 2. American journal of political science	Changes, additions, or deletions of title words denoting the geographic realm of the serial, including words in corporate names [No attempt was made to discern if a geographic word occurred with reference to the serial's domain of readers/contributors or to the serial's subject content. Geographic words were counted in both categories as seemed applicable.] Example: changed to regional 1. California folklore quarterly 2. Western folklore
Frequency Change	Changes in the serial's frequency Example: changed to annual 1. Biennial review of anthropology 2. Annual review of anthropology	Changes, additions, or deletions of title words describing the frequency of the serial Example: changed to quarterly 1. The semi-annual (Agassiz Association. Department of the Wilson Chapter) 2. The Wilson quarterly
Subject Change	Changes in the serial's subject content Example: changed to literature 1. Nineteenth-century fiction 2. Nineteenth-century literature	Changes, additions, or deletions of title words denoting subjects [or topical content], including words in corporate names [and geographic names]. [Acronyms (corporate and non-corporate) were included in the subject analysis.] Example: changed to biology 1. Systematic zoology 2. Systematic biology
Function Change	Changes in the serial's character or purpose [or targeted audience] Example: changed to journal 1. Bulletin of the American Musicological Society 2. Journal of the American Musicological Society	Changes, additions, or deletions of title words describing the function of the serial Example: changed to review 1. The south central bulletin 2. South central review

i. This table is based on an original paper published in Taylor & Francis: Mavis B. Molto, "Characteristics of Serial Title Changes and Recognition of New Serial Works: Theoretical and Practical Implications," *Serials Review* 37, no. 4 (2011): 279, table 2. Bracketed information represents modifications added to the guidelines when performing the current study.

ii. Examples show old title (number 1), followed by new title (number 2).

Notes on Operations
Finale and Future

The 2CUL Technical Services Strategic Alliance

Kate Harcourt and Jim LeBlanc

The Columbia and Cornell University Libraries' partnership (2CUL) is now in its sixth year. Its composite acronym (2CUL), which condenses a doubling of the two participating libraries' initial letters, summarizes its vision: a broad integration of library activities in many areas—including collection development, acquisitions and cataloging, e-resources and digital management, digital preservation, and reciprocal offsite use of collections. A key component in the partnership was the 2CUL Technical Services Integration, an initiative funded by a generous three-year grant from the Andrew W. Mellon Foundation, which ended on December 31, 2015. In this paper, the third in a series, the authors report on the final year of this grant-funded project and reflect on the results of the two institutions' attempt to achieve deep, operational integration within technical services.[1] In presenting an honest appraisal of the project's challenges and vicissitudes, the authors hope that their experiences and insights will help other libraries plan their own collaborative ventures.

A key component of the broad-based collaboration between the Columbia and Cornell University Libraries, known as 2CUL, was to have been the integration of the central technical services operations of both institutions.[2] This project, initially called 2CUL Technical Services Integration (TSI) and funded by a generous three-year grant from the Andrew W. Mellon Foundation, aimed to create a single, unified, and deeply collaborative operation that would support the broader goals of 2CUL by means of

1. a reconception of the institutions' separate library operations to achieve integration across both campuses by realigning staff responsibilities, workflows, and reporting lines; and
2. a transformation of the vision, priorities, and values of both libraries' technical services to support the overall institutional goals for 2CUL and to view institutional collaboration as fundamental to regular library operations.[3]

The libraries anticipated that the savings in staff time and effort in the integrated technical services divisions would create additional capacity for new or previously unrealized projects and initiatives.

The 2CUL TSI steering committee devoted the first year of TSI planning to creating an administrative infrastructure and encouraging staff buy-in to support the integration. They appointed ten working groups consisting of middle managers and other key staff to represent major functional areas of the two libraries' technical services operations. They charged these functional working groups to compile inventories of each unit's staff, expertise, policies, practices, and workflows; to exchange information regarding reporting and decision-making structures and

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dependencies for and limitations on the scope of each unit; and to share baseline productivity numbers, when available. The 2CUL TSI steering committee hoped that this "middle-out" approach would also foster new working relationships in preparation for the targeted 2015 integration. The teams did a remarkable job on these assignments and submitted a rich array of insightful and comprehensive reports.

The second phase of the project called for the newly formed TSI Joint Senior Managers Network (JSMIN) to review the reports and recharge the functional working groups with the overarching directive to begin an incremental "soft integration of 2CUL technical services operations, one idea at a time, over an 18-month period."[4] By the spring of 2014, however, it became clear that the functional teams were having serious difficulties fulfilling their renewed charge to plan for even a "soft" (i.e., stepwise) integration. The logistics involved in establishing institutional-level support for the project were far more complex than anticipated, especially in areas involving administrative differences at the university level, union restrictions, limits on access to each other's financial systems, and delays in purchasing a shared library management system (LMS). For these reasons, JSMIN recommended a reframing of the project as a technical services initiative rather than a technical services integration, with a focus on what the two institutions *could* do together—essentially, collaboration on discrete initiatives that would, or were likely to, lead to mutually beneficial improvements to quality, productivity, and service to the 2CUL user community.[5]

In retrospect, the need for this adjustment in the goals for 2CUL technical services should not have been a complete surprise. To our knowledge, no one had attempted this kind of integration of two large, geographically separate research library divisions before—an integration that called for neither the elimination of one or the other operation nor the integration of other library operations into the bargain. Yet the project aimed for an outcome that went significantly beyond mere collaboration.

Collaborative initiatives between libraries are not new, but have become even more popular and indeed necessary in recent years. A search of the literature over the past decade and a half reveals hundreds of essays, articles, and reviews related to collaborative library projects, including dozens of contributions on collaboration in technical services. Most of these latter articles focus on cooperative cataloging initiatives, sharing online catalogs, collaborative training and documentation efforts, collaborations with collection development and interlibrary loan operations, collaborative relationships with material vendors, and collaborative approaches to special projects. A particularly rich compendium of such efforts, specifically between cataloging units, is the 2014 publication *Cataloging Collaborations and Partnerships* edited by Rebecca L. Mugridge, a collection of commentary and case histories on recent efforts to leverage cataloging resources and expertise between libraries.[6] Reports and commentary on actual integrations or mergers of technical services operations are significantly more rare, however, because despite the collaborative ethos of present-day technical services departments, nearly all remain operationally independent.

Two notable exceptions have been the effort to create a "joint department of collection services" for the Kenyon College and Denison University libraries and the "fully consolidated, shared library technical services organization" known as BookOps, which serves the Brooklyn Pubic Library and the New York Public Library.[7] Like 2CUL TSI, the "KenDen" project sought to integrate a significant portion of technical services staff between two libraries that are not geographically contiguous, though at twenty-seven miles apart, Kenyon and Denison are considerably closer in proximity than Columbia and Cornell. The focus of the integration was primarily those processes related to the acquisitions and cataloging of print material. While the initial phases of the integration boded well for full implementation of the initiative, the focus of the collaboration eventually dimmed as the volume of print material the two libraries were acquiring decreased significantly following the project's inception. Because the acquisition and management of e-resources for the two institutions are closely tied to OhioLINK and Five Colleges of Ohio consortial agreements, their bilateral partnership gradually became less relevant.[8] BookOps, however, is the culmination of an initiative that was perhaps the more relevant to TSI, given the size of the two integrated operations and their libraries' continuing support for the venture. The BookOps venture will be discussed more extensively later in this paper.

From Initiative to Alliance

In early 2015 (at the beginning of the third year of the grant-funded project), the JSMIN group convened for a frank assessment of the first two years of TSI planning and to develop goals for the final year of the grant. The group reviewed both the process of preparing initially for integration and the shift to a series of more modest initiatives. After a year of planning for integration, followed by a year of exchanging this grand idea for a more modest initiative, what did 2CUL hope to accomplish in 2015? JSMIN compiled a list of twenty-three goals for the project's final year that seemed attainable and mutually beneficial. These goals ranged from the very concrete—such as evaluating ProQuest's Intota product together for its potential usefulness to the e-resource units at both libraries—to more open-ended, opportunistic, and perhaps idealistic commitments—such as examining "our imbalances to find

balances" (translation: how can we continue to benefit from each other's strengths?). Other goals for the third year of the project included collaboration on RDA training and documentation for support staff, sharing code and ideas for further development of each other's Blacklight discovery systems, examining possibilities for shared troubleshooting of e-resource access problems, working with catalog record vendors to improve the quality of their services, developing guidelines for joint negotiation with e-resource vendors, and conducting a comparative study of print serials workflows at both institutions (all of which were, in fact, eventually achieved). JSMIN agreed to review and comment on these goals at three-month intervals. The group also concluded that many of the ideas proposed during the first two years of the project were no longer worth pursuing, given the project's change in direction in mid-2014 and the delay in purchasing a shared LMS. JSMIN decided against rewriting the functional working groups' charges, but proposed a hiatus for those groups whose work did not immediately support potentially beneficial collaborative initiatives. For instance, the print serials, database maintenance, and print monograph ordering teams, in particular, had struggled to find ways to integrate their work productively. In contrast, the non-MARC metadata, cataloging, and e-resources teams had more success in working together to expand their respective scopes, even if these collaborations did not realize the kind of cost savings 2CUL had hoped to achieve through actual integration of its technical services operations.

The JSMIN group retained hope that a shared LMS might galvanize TSI and, in early 2015, nominated two representatives to serve on the joint 2CUL LMS Replacement Project Team. This team was composed of staff who represented financial services, information technology, public services, and technical services from both institutions. They were charged to compile an inventory of those LMS features required to support mission-critical tasks in all four areas, perform an environmental scan of viable products, and prepare a report for the administrations of both libraries. JSMIN viewed this revival of 2CUL planning for a next-generation system as a positive development, especially after an earlier effort had fizzled in 2014. Since 2CUL's inception, systems staff at both libraries had learned through previous joint investigative work to trust each other's judgment, and they had a sense that 2CUL expanded the range of technical expertise and provided stronger negotiating power with systems vendors. Additionally, from JSMIN's point of view, having the TSI teams established meant that an infrastructure was already in place for functional testing of technical services aspects of any new system. Although not explicit in the LMS Replacement Project Team's charge, the collaborative investigative work that group performed included the possibility of LMS replacement as a joint venture. For TSI, access to a shared LMS was crucial for realizing the full benefits of collaboration, especially in those functional areas like print serials, database management, and print monograph ordering that relied heavily on the libraries' current Ex Libris Voyager System to accomplish the majority of their routine, everyday tasks. Moreover, both institutions wanted to fast-track LMS replacement for various other reasons, including the anticipated retirements of key personnel, and saw the 2CUL collaboration as a way to make this happen. Staff from both institutions attended the May 5–8, 2015, Ex Libris Users in North America (ELUNA) meeting to study developements in Ex Libris' next-generation Alma system and began discussions on creating a joint sandbox with this system. The LMS Replacement Project Team prepared checklists of requirements, began planning for premigration cleanup, and conducted other tasks associated with system evaluation. They also considered Kuali's OLE system as a possible alternative to Alma. That summer, the process of creating a common checklist of requirements began to break down, perhaps because the previously critical requirement for a robust collaborative workspace for integrated technical services was no longer perceived as the driving factor for shared requirements. The team instead drafted a set of possible scenarios for moving forward, either together or separately. Meanwhile, the LMS market had evolved and Columbia was preparing for a major leadership change following the retirement of James Neal, its vice president for information services and university librarian. In the fall of 2015, in response to these factors, the 2CUL steering committee opted to decouple its interests regarding LMS replacement—a step leading to Cornell's immediate decision to implement Kuali OLE in mid-2017 and Columbia's decision to continue to use Voyager for at least another two years.[9] There was, however, unanimous agreement that each library's decision was better informed because of the joint investigation as 2CUL.

In part because of the 2CUL decision regarding migration to a next-generation LMS, JSMIN began to consider yet another change of focus—another reevaluation of the project goals—in its recommendations to mainstream 2CUL TSI at the conclusion of the three-year planning period. This change in perspective was also informed by decisions concerning 2CUL governance that JSMIN saw as relevant to the post-grant transition. Although the two institutions would continue to abide by the general principles set out in their 2CUL Consortial Agreement and its addenda, there would be no governance board exclusively charged with overseeing and resolving 2CUL issues. Nor would the 2CUL project managers, who played essential parts in the development of TSI, continue in their roles after 2015. The two library administrations issued a strong vote of confidence in, as well as a pledge for, continued limited support for TSI beyond the grant period. JSMIN, too, was unanimous in its desire to continue 2CUL collaborative technical services in

some form beyond the grant period. Its work in developing an infrastructure for integration had paid off, despite the aborted plan to integrate, in strong collegial relationships. In the words of JSMIN members, TSI activities had become more "natural" and "not as forced" as they had initially seemed when integration was the primary project goal. TSI was "getting [us] in the habit of thinking beyond ourselves," and "see[ing] others as a sounding board" for issues of mutual concern.[10] TSI working group leads affirmed this perspective that the project had started to feel "organic" and had created a "comfortable interpersonal climate," especially after the decision not to integrate.[11]

In late 2015, with the help of library assessment staff at both institutions, TSI planners issued a follow-up to an earlier TSI survey to technical services staff, which further substantiated these conclusions. While the survey was distributed to all central technical services staff at Cornell, union issues limited its distribution at Columbia to nonunion staff only. The earlier iteration of this survey was intended to measure perceptions of technical services *integration* in conjunction with individuals' satisfaction with their current units and libraries.[12] Although the libraries did not finalize their decision not to integrate until after the initial survey was distributed, TSI planners felt that this reassessment of attitudes, perception, and satisfaction would still be useful for a better understanding of the evolving climate for collaboration within 2CUL and beyond. The results of the follow-up survey revealed that respondents thought that the TSI initiative had been a bold, optimistic idea, but that the libraries had underestimated the effort required to execute the project for doubtful and somewhat irrelevant gains. Despite this result, the first-impression term most often associated with TSI in the survey was collaboration. Moreover, collaboration ranked highest among six areas measured for unit satisfaction in both institutions—the others being innovation, efficiency, communication, decision making, and risk-taking.

Given these developments, JSMIN proposed—and the 2CUL steering committee approved—a plan to mainstream TSI as a "2CUL Technical Services Strategic Alliance" following the completion of its grant-funded work in January 2016. The goals of this alliance are the following:

1. to work together on discrete projects and initiatives of mutual strategic interest, whenever collaboration is likely to lead to better quality, greater productivity, improvement of services, and fruitful innovation than working alone
2. to preserve, promote, and invoke the 2CUL brand in broader collaborative forums—for example, the Borrow Direct consortium, the Linked Data for Production (LD4P) initiative, and the Program for Cooperative Cataloging (PCC)—in which the 2CUL alliance is likely to serve as a catalyst or provide the partner libraries with increased leverage in negotiating and advancing mutual interests
3. to maintain a lightweight administrative infrastructure to foster and support the continuing alliance between the two institutions' technical services operations in conjunction with the broader 2CUL partnership

To our knowledge, no such framework for broad-based technical services collaboration between separate research institutions currently exists, as it is with this model that 2CUL Technical Services will henceforth be exploring new ground.

The 2CUL TSI project lasted three years and consumed enormous amounts of time and energy. It went through a major change in its goals from "integration" to "initiative" before TSI planners again regrouped to create an informal "alliance," which may or may not continue as other large-scale projects, such as Cornell's new LMS implementation, demand attention. Cornell and Columbia learned hard lessons about the need for a dedicated governing body to continually reaffirm the legitimacy and value of this challenging project early in the process, especially given the complexity of intractable, institutional work rules involving supervision and finance. Both sides underestimated the difficulty of aligning administrative priorities at the university level. Failure to purchase a shared LMS further hampered the project. 2CUL envisioned TSI as transformational, but was the only noteworthy change in its collective operations an increased openness to collaboration? What more did the two institutions learn from their efforts to plan and implement TSI? Was the idea of technical services integration as a "state of mind" (and one member of the JSMIN group astutely put it during the first year of the project) still useful for the future of 2CUL technical services and its joint, or even unilateral, collaborative ventures with other partners?

An Affinity in Interests

Given the results of the three-year project, one might legitimately wonder whether TSI has contributed to an enduring collaborative partnership at all, let alone a "transformative" one.[13] Its structure may, in fact, reflect as much a commitment to cooperation as to collaboration. Abram has stressed the importance of this distinction, noting that cooperation "just meets some simple transactional goals like saving money on volume discounts or agreeing to play well with interlibrary loans. Cooperation is *simple*; collaboration is *hard* since it hits so many of those human hot buttons that generate emotional intensity—territorialism, ego, identity, sharing power, etc."[14] Despite its original intent and its conceivers' bold vision, TSI, as "technical services *integration*," suffered from the outset and at the institutional level from

seemingly insurmountable legal and structural obstacles to the kind of deep, broad-based collaboration that its proponents envisioned. For this reason, 2CUL has not had to resolve cultural differences or manage the "human hot buttons" within the two institutions' technical services divisions. Instead, the two operations now find themselves in the unique, and potentially rewarding, position of being unusually well prepared to work closely together in ways that extend beyond simple cooperation but that do not force collaboration beyond what is strategically sound and culturally viable. In other words, the two operations can now seek ways to leverage their partnership without the mandate to merge operations and without the concomitant territorial and cultural impediments to working together that this mandate initially presented.

In this context, 2CUL's failure to achieve its original vision for TSI may ironically have led to a different kind of success, not as a single, unified technical services division but as a strategic alliance of two expert and highly functional separate operations. As a "natural" and "organic" product of the three-year TSI planning process, the 2CUL Technical Services Strategic Alliance may, in fact, turn out to be the best possible outcome for an initiative that, in retrospect, was unlikely to succeed fully in any case. It is important to examine this outcome more closely, starting with the successful integration of the Brooklyn and New York Public Library technical services operations.

BookOps—the "fully consolidated, shared library technical services operation that serves the Brooklyn Public Library (BPL) and the New York Public Library (NYPL)"—represents what is probably the most successful example to date of a technical services integration of two separate library operations on a large scale.[15] Processing more than 2 million items per year, the BookOps Library Services Center (LSC) in Long Island City opened in 2013 and realized more than $3 million in cost savings in its first year, chiefly through automation and the reduction of high-volume, duplicative efforts in technical services.[16] It is important to note that BookOps functions to a great extent as a separate business entity that is jointly directed and funded by BPL and NYPL, whose administrations established early in the process a governing board to remove institutional barriers to the project and to manage the high-level administrative, human resource, union and legal aspects of the consolidation. Importantly, however, the two libraries located their semi-independent, off-site processing center in nearby Queens—that is, within a ten-mile radius of each of the parent institutions. The BookOps model was based on a mandate to *consolidate* processing to achieve cost savings. The administrative details, governance structure and even the physical space were determined well in advance of integration. Further, NYPL and BPL predicated the rationale for establishing BookOps chiefly (or at least initially) on the idea of co-location, rather than reengineering—bringing staff together under one roof rather than deep workflow and cultural integration of the previous separate operations. They assumed they would need a shared LMS to accomplish the latter collaborative goal. A commonly shared centralized processing culture would come later.

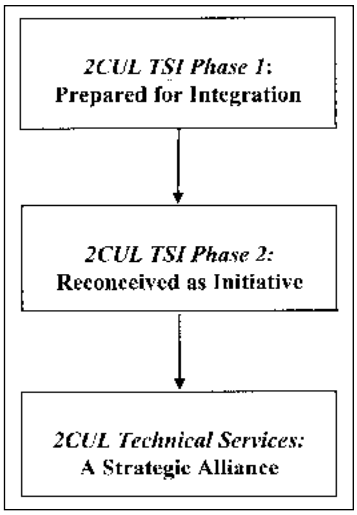

Figure 1. Evolution of the 2CUL Technical Services Strategic Alliance

TSI, in comparison, was never conceived as a separate business and legal entity with the kind of continued, though reduced, direct affiliation with its parent institutions that BookOps has. Nor was the establishment of an offsite processing facility in proximity to both institutions possible for 2CUL. TSI was, from the start, envisioned as a *virtual* union of two separate operations located more than two hundred miles apart, with a structure to be fashioned chiefly by its implementers, based on what the two institutions learned during the planning process. The vision was that two large and similar academic libraries did not need separate approaches to processing but could integrate those approaches and align their values to generate savings and repurpose those savings to other areas. Culture change and the administrative structure to support it would develop during the planning process. Therefore the implicit goal of the TSI project (clearer in hindsight, perhaps, than in its initial, highly optimistic beginnings) was to explore the *possibility* of deep collaboration within this context and to create a new model for broad-based, joint technical services activities. In this sense, the vision for TSI went further than that of the KenDen project, cited earlier. We can best describe the development of this model over the course of the three-year project as a progression from the original idea of deep, unified collaboration to technical services integration to support for strategically allied efforts that are less administratively structured and that require less bureaucratic governance and overhead than the project's initial hypothesis presupposed. Figure 1 illustrates this progression.

During phase 1 of the project, the two institutions sought *integration*, an operational state characterized by three important goals:

1. to realign 2CUL staff responsibilities, workflows, and reporting lines

2. to transform the vision, priorities, and values to support overall institutional goals for 2CUL
3. to accept the idea of inter-institutional collaboration as fundamental to regular operations

With the definitive elimination of the possibility of interinstitutional reporting structures and streamlined accounting protocols, with bureaucratic delays that undercut lightweight, nimble experimentation to forge possible pathways around these obstacles, and with the growing uncertainty regarding implementation of a joint LMS in the foreseeable future, the stepwise integration envisioned for phase 2 of the project came to seem unwise, if not impossible. Instead, the TSI implementation team chose to "pivot," to question the original hypothesis and ask "what *can* we do?"[17] At this point, 2CUL reimagined TSI as an "initiative" rather than an integration with what were essentially three revised goals:

1. to leverage the work and relationships of the TSI teams and functional working groups already in place
2. to focus on discrete projects that seemed to promise net mutual benefits
3. to accept the idea of interinstitutional collaboration as fundamental to regular operations

As phase 2 of TSI, with its investigative focus, came to a close, project leaders sought to mainstream the collaborative structures and workflows achieved in the three-year project on the basis of what the two libraries had built—and learned—during the TSI project. The idea of an alliance seemed to be most natural and viable alternative.

In addition to its denotation of a union or association formed for mutual benefit, an alliance can also describe a relationship based on an affinity in interests. As such, an alliance presupposes neither collaboration nor cooperation exclusively, but constitutes an understanding that lays the groundwork for both. Thus a "strategic alliance" describes—for 2CUL technical services, at least—an agreement to work together, in some way, whenever the partnership promises an overall or long-term benefit in matters of mutual interest. In this context, the 2CUL collaboration is better understood as a means to a strategically valued end, neither the *raison d'être* of the relationship nor the end in itself, for the goal of collaboration is always better performance leading to improved service.[18] Interestingly, in the evolution of its goal from integration to alliance, the TSI project has positioned 2CUL to leverage its similarities in institutional culture rather than forcibly realign its cultural differences, both of which project staff now understand considerably better as a result of the early work of the project (i.e., the preparation for integration). Moreover, it was through TSI's failure as technical services *integration* that 2CUL has been able to finesse its differences and focus on its shared interests. 2CUL's incipient collaboration on national linked data initiatives, such as the proposed Linked Data for Production (LD4P) project, is a good example of this aspect of the alliance: either institution could have chosen not to participate with the other and, in fact, could still make that choice. However, without the TSI project, it is unlikely that Columbia and Cornell would have immediately comprehended the potential utility of working together in this emerging area of interest for library technical services. As JSMIN had hoped, individual institutional imbalances can be replaced by collaborative balance. Moreover, the reflections of the TSI leadership team (JSMIN) on the progression from integration to alliance, plus the results of the follow-up survey of unit satisfaction and perceived ranking in key areas of performance, suggest that a certain amount of cultural realignment regarding the value of collaboration may already be occurring within the alliance. The challenge for the JSMIN group will be to continue to foster this cultural realignment, which may eventually, and hopefully, lead to deeper and richer 2CUL technical services collaboration.

Conclusion: A License to Collaborate

> Organizing people in such a way that leads to collaboration because you have a shared vision and mission.
>
> —Amber Guild, President of Collins brand consultancy, on her management style[19]

Thus TSI, as a project that fell short of its original goal of interinstitutional divisional integration in support of the 2CUL vision of deep and enduring collaboration, may have paradoxically better positioned the Columbia and Cornell University Libraries to collaborate—specifically, whenever discrete collaborative initiatives are likely to lead to improved quality, greater productivity, and overall better performance in 2CUL technical services. The libraries anticipate that the project may have also positioned them to take advantage of new opportunities to collaborate with other institutions, either as 2CUL or independently of each other, given our enhanced cultural inclination to work with partners beyond the administrative and geographical boundaries of our own institutions. Successful collaboration—unlike consolidation—cannot, it seems, simply be decreed; the conditions for its possibility may, however, be instituted and encouraged as a cultural value, "as fundamental to regular operations." What 2CUL technical services has hopefully achieved is a kind of "license to collaborate." Among those local arrangements that are likely to continue as 2CUL technical services makes its transition from the project to mainstreamed, strategically allied

activities are, most notably, its shared use of the Pre-Order Online Form (POOF!), developed by Cornell but with considerable input from Columbia; joint representation through a single staff member in some aspects of the PCC (e.g., Robert Rendall, Columbia's principal serials cataloger is currently serving as the 2CUL CONSER representative for both libraries); coordination of activities and speakers sponsored by the Metadata Working Groups at the two institutions, with both local and remote options for participation; and regular discussion, joint investigations, and coordinated development of e-resource acquisitions and processing models between e-resources unit staff at both libraries.[20] This last item is particularly important because it represents the most integrative outcome of the extensive TSI planning activities of the various project-related working groups, several others of which were on hiatus in 2015 and are likely to remain so indefinitely. The 2CUL e-resources staff, however, worked together first to migrate Cornell to a Serials Solutions e-resource management (ERM) platform, then trained together on new Intota ERMs to which both libraries simultaneously migrated. Additionally, e-resources staff continue to review certain types of problems, issues, and workflows (such as the acquisition and licensing of streaming video) together. Most fruitfully, 2CUL e-resources staff, in cooperation with 2CUL collection development officers, have successfully pursued joint negotiations with resources and service providers, leading to an estimated $200,000 in projected savings for the partner institutions.

Further, Columbia and Cornell's technical services operations are now frequently recognized nationally as 2CUL, an allied status that may subtly (or, in some cases, more overtly) give the two institutions greater influence on matters of mutual interest, such as PCC initiatives, aspects of linked data research and development, and pilot projects with larger organizations such as the Library of Congress and OCLC. The extent and precise benefits of this influence over the long term still remain to be seen.

Also yet to be determined is the medium- to long-term efficacy of the 2CUL JSMIN group and the technical services divisions' recently proclaimed "alliance." With the support of the Mellon Foundation and the initial push from their respective library administrations, 2CUL technical services staff have dedicated an extraordinary amount of time to building the relationships that uniquely position the two institutions for a rewarding partnership in this area of central library operations. It remains to be seen how the two libraries will sustain this momentum without the explicit obligations specified in the three-year planning grant from the Mellon Foundation and with the possibly reduced interest from Columbia and Cornell library leadership—which has undergone, and will continue to undergo in the coming months, significant changes in personnel. Nonetheless, those who have been directly involved in the TSI project now possess a much broader first-hand understanding of what can be done, and at what cost, by large research libraries in similar legal, administrative, and geographical circumstances as those of 2CUL—that is, short of outsourcing entire areas of functional responsibility to each other (with the extraordinary levels of trust this option would entail) or resorting to a separate, semi-independent organizational structure, such as BookOps. As the foregoing summary of and reflections on TSI project activities indicates, those in technical services leadership positions within 2CUL now have a far better sense than they did three years ago about

- when to cooperate, collaborate, or create formal or informal alliances for our mutual greater good;
- the challenges inherent in collaborating without a project-specific and/or exclusive governance structure, or in collaborating during a change of leadership ("one of the riskiest times for any collaborative venture");[21]
- the factors that support nimble collaboration and the importance of achieving the proper level of bureaucratic support for collaborative initiatives, both large and small; and
- the relative and varying importance of organizational structure and differences in institutional priorities, values and culture, in pursuing any collaborative vision.

As we mainstream the 2CUL Technical Services Strategic Alliance into the daily ethos of production and planning at the Columbia and Cornell University Libraries, we hope that our experiences and insights from the three-year TSI project will be in some way useful to other libraries, especially large research libraries, who wish to leverage the power of institutional alliances in innovative ways to improve productivity and the quality of service they deliver to their user communities. The future value of research libraries may depend on it.

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Notes on Operations
Diminishing Short-Term Loan Returns

A Four-Year View of the Impact of Demand-Driven Acquisitions on Collection Development at a Small Academic Library

Tina Herman Buck and Sara K. Hills

When St. Edward's University's library implemented demand-driven acquisitions (DDA) for electronic books (e-books) in 2011, the program affordably served as the monographic front list for this small liberal arts university library with minimal demands on the professional staff. Over four years, short-term loan (STL) costs have increased at an alarming rate and important publishers have altered what content was made available through aggregator DDA platforms plus the terms of availability of the content. The library examined how DDA fits into it collection-building and management processes in a continually changing environment and offers some strategies and considerations useful for helping in the choice of e-book purchasing models.

Significant changes to the cost and availability of short-term loans (STLs) associated with demand-driven acquisitions (DDA) has concerned the authors, who are librarians with collections and acquisitions responsibilities at the Munday Library at St. Edward's University. Specifically, steep cost increases, embargoes, and elimination of STL availability by some publishers led the authors to evaluate the viability of aggregator-based DDA as a primary collecting tool. This paper examines changes to the library's DDA program in light of the library's rationale for choosing it to provide its monographic front list four years ago: quick, affordable access to current, multiuser e-books from a wide range of academic publishers; minimal demands on librarian time; and paying only for content that is used. The authors discuss how DDA program changes are altering the nature of the library's monographic collecting, with a focus on the publishers most used by the St. Edward's University community.

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Background

St. Edward's University is a private, liberal arts university in Austin, Texas, with approximately four thousand undergraduates and six hundred graduate students.[1] Although historically a teaching university, faculty and student research has begun to play an increasingly important role. The Munday Library's collection development policy supports the current curriculum, rather than attempting to create a comprehensive or historical collection.[2] The Munday Library is the university's only library, with ten support staff and seven librarians; its collection includes approximately 74,000 print books and 214,000 e-books. About 55,000

DDA eligible e-books, making up about 23 percent of the e-book collection (as of September 20, 2015) are available on the EBL platform. A much smaller DDA collection from ebrary supplements the EBL titles.

The DDA program's primary collection goal since its inception in 2011 is to serve as the library's monographic front list, that is, titles published within the past twelve months. Second, the program is needed to minimize demand on librarian time. The ebrary Academic Complete subscription is the library's electronic monographic mid-list (published earlier than the past twelve months), with approximately 127,000 titles (as of September 20, 2015). Smaller collections, such as Credo Reference, PsycBooks, and several Springer, JSTOR, and Project Muse packages constitute the remainder of the library's e-books, plus the Early English Books Online (EEBO) collection. Thus the majority of the Munday Library's contemporary e-book collection is obtained through aggregators: EBL and ebrary, now both part of ProQuest.

The library began using DDA to provide access to a substantial, current collection of monographs for the St. Edward's University community. The small number of librarians on staff meant that maintaining a sufficient, current collection of print monographs selected on a title-by-title basis, had become impossible. The EBL DDA program allowed the previous collection development and acquisitions and metadata librarians to create a profile specifying publication date range, publishers, and subject focus, and to quickly build and maintain the much-needed collection of current, scholarly, and primarily multiuser, e-books.[3] Using EBL's auto-add feature, e-books meeting the specified criteria were automatically made available on the vendor's platform and MARC records for those e-books were emailed weekly to the acquisitions and metadata librarian to load into the library's Millennium integrated library system. The librarians also established criteria for EBL's auto-weed feature, specifying that e-books older than thirty-six months and without use for twenty-four months should be automatically removed from the platform. A MARC delete file of those titles was emailed weekly along with the auto-add file. The benefits of auto-add and auto-weed guaranteed the collection's currency with minimal demand on librarian time.

An equally important appeal of the DDA model was that the library would pay only for materials that were used. With a limited budget, the librarians could not afford to spend collection dollars on materials that were not relevant for the St. Edward's University community. Originally, the library's DDA programs allowed three STLs. Typically, an STL is defined as more than five minutes of use of the-books' contents, or any copying or printing. When the library's DDA programs were launched, each STL cost about five to fifteen percent of the cost of the book. The fourth use of the book initiated an auto-purchase.

The DDA program successfully served as the library's affordable and substantial monographic front list until programmatic cost increases and content reductions took effect in 2014 and 2015. This paper reviews the impact of those changes on collection development.

Literature Review

DDA programs are no longer a novelty, yet the debate over their merits and limitations continues. Librarians, publishers, and aggregators each have their own assessment. The literature reflects this diversity of opinion. Fulton overviews the history and current state of DDA (also referred to as patron-driven acquisitions or PDA) and enumerates the advantages and disadvantages as discussed in the literature. He weighs issues surrounding cost-effectiveness, access, staff time, and collection quality.[4]

Carrico et al. studied the cost-effectiveness of multiple e-book acquisitions methods, commenting on the time-intensive nature of title-by-title selection and ordering versus efficiencies offered by package-type acquisitions. The DDA program that they evaluated did not offer STLs. They are "staunch supporters of the cost-effectiveness of DDA because e-books [which] are purchased are used."[5]

Downey et al. offer a broad overview of DDA at a large Association of Research Libraries institution, determining that DDA was cost-effective because they only purchased materials that their patrons used and also gave patrons quick access to many e-books. They state that "the major advantage of this e-book acquisition model is that it can provide users with immediate electronic access to a large quantity of content while giving the library the assurance that funds are being expended for content that is actually being used."[6] Ferris and Buck cite the rationale for a small, academic library to heavily use an aggregator-based DDA program: minimal demand on librarian time; quick, unmediated access for patrons; and paying only for materials that are used.[7]

Machovec summarizes recent changes to DDA programs' pricing and content, and the publisher discontent that led to those changes.[8] Hiatt presents the main points of debate over short-term loan price increases, addressing both publisher and librarian concerns. He also highlights publishers' and librarians' differing perceptions: "Librarians have accepted DDA as a stable acquisitions model, but publishers still seem to consider it experimental."[9]

Gillett's interview with ProQuest Vice President Kari Paulson relates a benefit of aggregated collections: "Libraries want to buy from suppliers who offer content from a broad range of publishers and in a range of formats."[10] She also comments on what librarians might expect from ProQuest DDA programs going forward.

> DDA has become embedded as a standard part of the library collection development policy for many of our customers, so our roadmap includes enhancements to our current offering—again designed around feedback from our customers . . . we should expect to see further experimentation with both pricing and access models before we see full maturation of either.[11]

Seger and Allen provide a publisher's perspective on DDA, referring to it as a pilot and reinforcing the idea that publishers do not see DDA as a finalized business model.[12]

STL Changes and Challenges

The librarians at the Munday Library noticed significant STL cost increases beginning in June 2014. Each month, EBL announced which publishers had increased their rates and by how much, and the list grew every month. By October 2015, approximately fifty publishers were on the list of STL price increases. The average cost of a one-day STL rose from 10 percent to 25 percent of the cost of the e-book. The average cost of a seven-day STL rose from 16 percent to 34 percent of the cost of the book for those fifty publishers.[13]

Although only fifty publishers out of the many made available by EBL increased their STL costs, the publishers most used by the St. Edward's University community were, not surprisingly, a part of this trend. Of those fifty publishers, twenty-one initially had a one-day STL set at 5 percent of the e-book's cost. Forty-five publishers initially priced one-day STLs at less than or equal to 15 percent. By October 2015, thirty-eight out of fifty charged 20 percent or more for a one-day STL.

Because of profile settings, nearly 95 percent of St. Edward's University's STLs in the twelve months before June 1, 2014, were one-day STLs; the remainders were seven-day STLs. Thus, while STL costs for seven-, fourteen- and twenty-eight-day STLs also rose significantly, St. Edward's University was primarily affected by cost increases for one-day STLs. Of the 4,209 STLs generated by St. Edward's University's community members between June 1, 2013, and May 31, 2014, more than half were for e-books from just nine publishers, and the top three—Taylor and Francis, Wiley, and Palgrave-Macmillan—accounted for more than a third (see table 1).

Average STL costs for two of St. Edward's University's most-used publishers, Taylor and Francis and Palgrave Macmillan, nearly tripled (see table 2). As is evident from table 2, the average STL costs for Wiley increased less than 1 percent; this is likely because of the content embargoes that Wiley subsequently imposed on its front list content in the ProQuest E-Book Central in March 2015, which is discussed later in this paper.

In sum, the library saw an increased cost for a one-day STL, on average, from 11 percent (pre-June 2014) to 29 percent (post-June 2014). The average cost of an STL for St. Edward's University has increased by 76 percent, from $9.36 to $16.46 (see table 3).

Table 1. STL cost increases for St. Edward's University's most highly used publishers[i]

Publisher	STLs	Pre-June 2014 1-day STL cost	Post June 2014 1-day STL cost
Taylor and Francis	1,000	10%	25% (changed 6/1/14)
Wiley	472	15%	25% (changed 8/1/14)
Palgrave Macmilllan	144	10%	30% (changed 9/1/14)
Springer (all variants of name)	136	15%	25% (changed 7/15/15)
Cambridge University Press	112	15%	30% (changed 7/1/14)
Bloomsbury	111	5–15% (varied by imprint)	35% (changed 6/1/14)

i. Three publishers with high use did not increase their STLs.

Table 2. STL costs by St. Edward's University's highest-use publishers, June 1, 2013 to May 31, 2015

Highest Use Publishers	Average Cost June 2013–May 2014	Average Cost June 2014–May 2015
Taylor and Francis	$13.33	$34.63
Wiley	$9.96	$10.05
Palgrave Macmillan	$8.79	$22.07

Table 3. STL cost changes from 2013–2014 to 2014–2015

Year	Total STLs	Average STL Cost	Total STL Cost
2013–14	4,209	$9.36	$37,648.84
2014–15	1,279	$16.46	$22,529.69

Embargoes

In March 2015, EBL released its first list of publishers that planned to impose embargoes on STLs for their most recently published content. For example, Wiley has a twelve-month embargo on STLs, meaning that any book published within the last twelve months is available for purchase through EBL but is *ineligible* for STLs. STL-embargoed content triggers an auto-purchase on first use. Beginning in October 2015, three publishers removed their content from the risk-pool

(the available titles for patrons to browse and use), thus removing themselves from the DDA model. That content is still available for purchase via EBL, but a patron cannot trigger the purchase. A staff member with access to the administrative site must purchase titles to make them visible to the public and available for use. In table 4, the twenty-three publishers that changed their DDA availability are grouped by the changes made (as of December 20, 2015). The authors believe that this is the first of many such changes as big publishers try to move libraries from aggregator sites to purchases and/or subscriptions on the publisher's own platforms.

Library Response

During the initial increase in STL prices during June and July of 2014, the Munday Library's monthly invoice figures were alarming. The June 2014 invoice was approximately triple the cost of the June invoice in either 2012 or 2013, while the July 2014 invoice was nearly four times the amount of either of the prior two July invoices (see table 5).

Concerned about rapidly increasing STL expenses, the librarians implemented steps intended to reduce costs. The auto-purchase trigger was amended from purchasing on the fourth use to purchasing on the first use if STL cost was greater than 24 percent of the e-book cost. When the June 2014 invoice arrived, it became clear that that strategy was not effective at cost containment. Allowing three STLs before auto-purchasing an e-book was no longer fiscally feasible, but clearly neither was purchasing it on the first use. On further analysis of use patterns, the librarians changed the auto-purchase trigger again, allowing one STL with an auto-purchase on the second use for all publishers.[14]

The librarians also reduced the size of the DDA risk pool. By June 2014, ProQuest had purchased both EBL and ebrary, and the library's ProQuest customer service representative de-duplicated the EBL collection against the ebrary Academic Complete subscription, something that had proved impossible for the librarians to do efficiently in either Microsoft Excel or in the library's integrated library system when the e-book packages were purchased from separate companies. This reduced the DDA collection by about 9,000 titles. The librarians tightened the auto-weed policy to remove titles after twenty-four months if they had not been used in twelve months, as compared to the previous auto-weed policy of removal after thirty-six months if no use in twenty-four months. This reduced the risk pool by an additional 22,000 titles but retained the newest titles, thus preserving the front list nature of the collection while helping to control potential costs. Finally, the librarians became more vigilant about removing publishers whose materials were marginal to the collection development policy or were more suitable for leisure reading. These collection and policy changes successfully curbed the library's STL expenditures, though the change to the auto-purchase trigger resulted in increased expenditures for purchases. The net effect, however, was to keep the program affordable.

Table 4. STL embargo types by number of publisher[i]

STL Embargo Type	Number of Publisher
No STL offered	5
No DDA offered	3
6 months	1
12 months	10
18 months	3
60 months	1

i. Data collated from ProQuest, "Table of Publisher Short-Term Loan Pricing Changes," downloaded October 23, 2015.

Table 5. EBL invoice increases by total invoice cost, including STLs and autopurchases

	2012	2013	2014
June	$3,320	$2,942	$10,609
July	$1,673	$1,681	$6,156
Total	$4,993	$4,623	$16,765

Collection Changes and Impact

EBL's DDA program has provided a constantly updated front list to St. Edward's University's users, and it has been the primary means to maintain a current collection. While EBL continues to provide a front list for St. Edward's University, that front list is smaller because of cost increases and content embargoes, and EBL is no longer the library's preferred source for scholarly monographs. Before the cost increases, the library's e-book risk pool was largely inclusive, and the library added requested titles to the risk pool, giving the patron quick access, because the "surcharge" of the STLs was minimal. If a patron used an e-book once (i.e., a single STL), the library spent only 5–10 percent of the cost of the book, which the librarians considered to be a worthwhile expenditure. STLs had provided an inexpensive way to gauge demand before purchase. That flexibility has largely disappeared. Now, it may be less expensive for the library to purchase requests and front list titles outright from EBL or a print vendor based on the librarians' judgment as to whether the title will garner further use. Print versions of a title are generally cheaper than electronic, and the librarian must consider whether the title is likely to be in high demand (multiuser e-books are a better buy) or have narrow appeal (print may be more cost-effective). The collection development librarian now checks the weekly file of new titles to

remove publishers that do not strictly support the current curriculum. Using DDA to determine whether the title has value to multiple users is no longer feasible for this library.

There are positives and negatives to these changes. While the EBL collection is now refined to meet the specific needs of important classes at St. Edward's University, students are no longer exposed to serendipitous discoveries of nontraditional presses nor the broader scope of publishers and subject matters. A tightly managed EBL collection is fiscally sustainable, while a more inclusive one is not. To provide that more inclusive collection, the collection development librarian selects titles individually using input from subject-liaison librarians and considering patron requests, purchasing these materials using a variety of acquisitions methods.

Staffing and Community Impact

A significant impact of the DDA program changes is the amount of time that the collection development librarian spends monitoring the program. Vendor and publisher changes, library expenditures, risk pool composition and use, mediated use requests, and monographic collecting outside the DDA program all require more attention than in earlier years. A major impetus for the Munday Library's move to EBL's DDA program was its comparatively automated nature, given the library's small number of librarians. This benefit is now considerably lessened.

The library has also used EBL and ebrary to support reference and interlibrary loan (ILL) by giving those staff members access to the administrative sites, where they can search all of the available titles (i.e., not limited to those in St. Edward's University's risk pool) and "turn them on" for immediate access for community members.[15] Reference librarians can meet student demand during the reference interview, rather than referring a student to ILL, to a suggest-a-purchase form, or to another area library. This sort of action fits the collection development policy of supporting the curriculum. Similarly, ILL staff could fulfill community requests by turning on titles in the administrative sites. In both cases, the patron's research needs are satisfied quickly and possibly more quickly than with most alternatives. With the increases in STL costs, the collection development librarian must be more selective with this option; buying a request outright in print or electronic or using ILL may be more cost-effective, though the patron likely faces a longer wait.

Expectations Moving Forward

Moving forward, what is the future of DDA? From the publishers' perspectives, it seems there are concerns about generating enough revenue to support the business. Many publishers are promoting evidence-based access or acquisitions (EBA) models on their platforms, subscription models, or direct purchase of e-books, either as collections or individually to fill that revenue gap. Aggregators like ProQuest are trying to change the DDA model to satisfy both publishers' need for revenue and librarians' need for affordability. As more publishers place embargoes on front lists, increase STL costs, or discontinue the DDA model altogether, ProQuest has responded with an Access to Own acquisition model. ProQuest promotes this model as a compromise between the publishers' and libraries' needs.[16] Aggregators want to continue their revenue streams, and ProQuest's investment in this new model makes sense. Librarians value the cost effectiveness that DDA offers, but there is concern about sustainability.

The primary mandate of the Munday Libary's collection development policy is to support the current curriculum. Choices of platform and acquisitions model are lesser concerns. The Munday Library will trial the options discussed below to provide content to the community.

First, the Collection Development Librarian will further tailor the publishers included in the library's ProQuest DDA program, with an increased focus on large, high-use trade publishers and university presses, such as Taylor and Francis, Oxford, and Cambridge. Some of those publishers have agreed to the Access to Own model, whereby the STL becomes a part of the book's final cost. Because this model is so new, no data exists to model what cost changes the Munday Library may expect. The librarians will treat the first year of Access to Own as a trial and assess costs and cost per use accordingly. It is possible that the Access to Own program could replace the original DDA model and the librarians will want that data to respond effectively to that change.

Second, the Munday Library will trial an evidence-based access (EBA) model with Project Muse. This trial will serve two purposes: provide front list titles from additional university presses, possibly more affordably than the same content via EBL, and allow the librarians to compare EBA costs and use to that of the library's DDA program.

Third, the library will investigate a DDA program with JSTOR, providing access to university presses not available through Project Muse. The JSTOR article platform is heavily used at the Munday Library, and providing e-books on that platform might result in serendipitous discovery by users.

Finally, the librarians will explore a demand-driven-preferred approval plan.[17] Selecting and acquiring e-books for numerous platforms is consolidated in one library vendor (such as YBP or ProQuest) in such a plan, potentially saving librarian time and providing a wide range of publishers. An approval plan trialed several years ago had limited buy-in from staff and subsequent content use by the Munday

Library's patrons, but the market has changed enough to warrant another look.

Numerous concerns need to be addressed as these trials proceed. Primary among them is whether the library can efficiently de-duplicate titles across multiple platforms, which was problematic in the past. The quantity of print purchases that a demand-driven preferred approval plan may yield is another concern as shelf space is very limited in Munday Library's stacks. What role will the subject liaisons play as monographic collecting becomes more complex? The small number of librarians precludes extensive reliance on subject liaisons, yet the liaison program has never been revamped to meet changing needs, and liaison roles are sometimes unclear. Finally, having most of the library's monographic front list on the EBL platform facilitated less frustration and confusion from the St. Edward's University community. As the library strives to provide more content, more platforms will require training and support of both users and public services staff.

Conclusion

The changes to DDA beginning in 2014 came to the attention of the St. Edward's University librarians largely because of the immediate financial impact. As the first STL increases were instituted, St. Edward's University librarians could not have predicted how greatly the DDA model would change, and with it, the way the library provides its community with a sufficient quantity of current, scholarly monographs. The pressure of limited librarian time for collection development has resurfaced as multiple platforms and means of acquisitions are examined. The collection development librarian will determine how subject liaisons can be best deployed to fulfill collection needs.

The aggregator-based, STL-driven DDA program is no longer viable as a primary collecting tool for this small, liberal arts university library. Cost increases and content reductions mean that additional collecting mechanisms must be trialed and evaluated. The DDA program will be a significantly smaller part of the collection. The affordability of the original DDA program is gone; however, the appeal of paying only for content that is used may still be realized via EBA and other nonaggregator DDA programs. Trials are needed to evaluate their cost-effectiveness. New means of supporting the curriculum must be pursued to provide access to a cost-effective, staff efficient, and timely collection.

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Notes on Operations
Perpetual Access Information in Serials Holdings Records

Andrew R. Grissom, Steven A. Knowlton, and Rachel Elizabeth Scott

Many librarians find it difficult to compile information about perpetual access to their e-journals because it may be scattered across numerous license agreements. Rather than creating and maintaining a database for perpetual access information that is separate from the order records and holdings information found in integrated library systems (ILS), the University of Memphis is using Innovative Interfaces' Sierra ILS. By leveraging fixed and variable-length fields to record perpetual access information, we can perform queries and generate reports that are helpful in making collection development and preservation decisions.

Much of the work of librarianship is anticipatory—librarians purchase materials to have them available in case patrons need them, they familiarize themselves with the library collection in case a patron requires guidance, and they bind journals or purchase microfilm in case a current issue will be desired in the future. It is a rare felicitous moment when a librarian sees that anticipatory work put to use almost immediately.

At the University of Memphis (UofM) Libraries, we had the bittersweet circumstance of needing to cancel journal subscriptions for budgetary reasons while simultaneously seeing the outcome of an anticipatory project have an immediate effect on the library's operations. In previous rounds of journal cancellations, we experienced difficulty identifying which titles had perpetual access and processing records appropriately to maintain patron access to the content covered by perpetual access. This is because we had not applied administrative metadata to indicate access rights and changes to e-resource links that would be needed in the event of cancellation. Expecting another round of cuts, we undertook a project to identify perpetual access rights in a stable location. As we reviewed the cancelled titles at the end of our subscriptions, we made use of the perpetual access information that was recorded. This paper outlines some of the issues surrounding perpetual access rights information, alternatives explored by other libraries, and our own experience.

Literature Review

The Digital Library Federation's Electronic Resources Management Initiative defines perpetual access as "the right to permanently access licensed materials paid for during the period of the license agreement."[1] Glasser's survey of e-resource perpetual access rights among libraries further defines perpetual access as material held "before the affected serials were canceled, ceased

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publication, or transferred to different publishers."[2] In the print environment, perpetual access was attained by purchasing, storing, and preserving print volumes of academic journals. This is greatly complicated, however, in the electronic world. Scholarly collections are "licensed" rather than "owned," and any change in the relationship between a library and a publisher (e.g., a canceled subscription, a merger or new acquisition on the part of the publisher) can threaten long-term access to that content. License agreements between libraries and vendors/publishers then become the primary means of communicating agreed-on perpetual access rights and procedures.

Clearly, perpetual access helps fulfill an academic or research library's obligation to preserve scholarly content because it ensures long-term electronic access to that content. In general, most publishers appear to be moving toward granting perpetual access in some form to academic libraries, though Stemper and Barribeau found that commercial publishers are more likely to do so than society or noncommercial publishers.[3] Zhang and Eschenfelder echo these conclusions in an analysis of e-journal licenses, finding that inclusion of license clauses granting perpetual access on expiry of subscription termination is reaching a moderate level of institutionalization among the academic community.[4] While perpetual access is increasingly becoming the norm among publishers, tracking perpetual access policies requires close reading of the most up-to-date e-journal license agreements, which are far from straightforward.

The language in perpetual access provisions is often vague, leading to more than one interpretation of a given policy. This may be partly because of rapid technological changes and consequent attempts by publishers to leave their provisions open to unforeseen circumstances. Clauses also vary tremendously in the terms and conditions of perpetual access. The publisher may deliver content in the form of an archival DVD or CD-ROM, host content electronically from their own server, use a third-party archival service such as LOCKSS or Portico, or simply provide print copies of the affected issues. The license may also require a fee for perpetual access, such as a one-time set-up fee or regular maintenance fee, but the specific costs are usually not provided in the license.[5] In sum, the vagueness and variety of license clauses reflects a larger lack of standardization among scholarly publishers regarding their role in digital preservation.[6] The policies outlined in licenses are not as specific as libraries would like, but careful negotiation during the acquisition process (initial subscriptions, annual renewals, moving from a "big deal" to title-by-title subscriptions, etc.) may allow for compromises that satisfy both parties.[7]

Staffing, time, and finances are also barriers to tracking perpetual access. Carr finds that academic research libraries are largely committed to seeking perpetual access for their e-journals but are willing to compromise this commitment when faced with budget cuts.[8] Glasser discusses the challenges of missing licenses or other documentation, lack of staff, and difficulties in attaining perpetual access for transferred journal titles.[9] Libraries often struggle to keep updated holdings information because of rapid changes in subscriptions and publisher policies.[10] Indeed, Marshall and Bulock state that "perpetual access means perpetual effort."[11]

Just as there are many technological tools for access to and assessment of e-resources (e.g., Serial Solutions, Ex Libris, CORAL), many approaches are available for tracking the diverse nature of perpetual access information. Bulock provides an overview of these systems, with examples to illustrate their advantages and disadvantages. These include electronic resource management systems (ERMS), integrated library systems (ILS), spreadsheets, link resolvers, and subscription agent platforms. These practices are highly divergent between libraries, and most institutions use combinations of these systems that best suit their workflows.[12] Beh and Smith developed customized codes for perpetual access to e-journal packages, which were entered into the order records of their ILS. Their team also developed a workflow to collaborate via spreadsheets on a shared drive, allowing them to update their link resolvers when perpetual access was activated.[13] Blanchat used spreadsheets to track these changes, applying the Knowledge Bases and Related Tools (KBART) guidelines to update OpenURL linking for journal titles with perpetual access.[14]

Finally, Calvert's work was instrumental in the initial development of this project. Drawing on the experience of building a perpetual access workflow for Hunter Library at Western Carolina University, the paper provided basic questions to ask before we began examining licenses and developing a tracking strategy: "Does the publisher/license grant perpetual access? To which years are we entitled access? Which years can we currently access? How much time should staff spend on resolving discrepancies?"[15] Calvert's library also generated three outcomes, which we found to be similar to our overall goals: "to ensure perpetual access is set up properly when a journal is cancelled; to assist staff when troubleshooting access problems; and to verify ongoing access to the title."[16]

Method

Drawing on Calvert's model, we decided to track perpetual access information via a customized metadata scheme in our ILS, Innovative Interfaces' Sierra. The project was initiated by Steven Knowlton, the head of UofM Libraries Collection Management Department at the same time, who long had considered the tracking and storing of perpetual access information to be a much needed step in e-resource management processes. However, lack of staff time was a significant

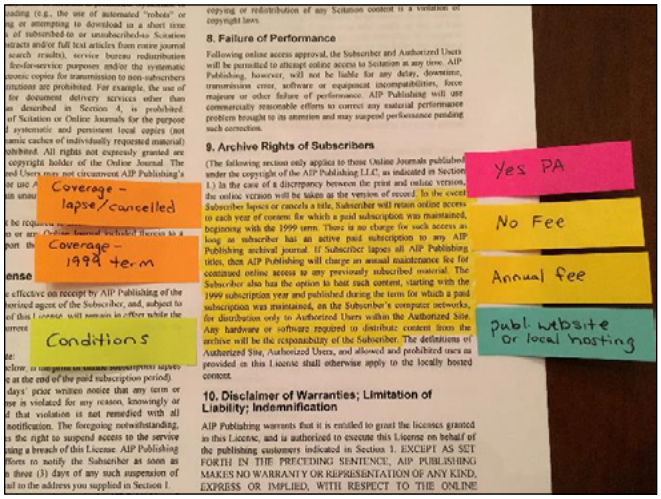

Figure 1. Example of license agreement coded for perpetual access

barrier to implementing such a project—at that time, two of the three positions dedicated to e-resources were vacant. The availability of a practicum student offered a temporary solution. Andrew Grissom, a graduate student in the University of Tennessee's School of Information Sciences, conducted a practicum in the Collection Management Department in the fall 2015 semester. Grissom spent twelve hours per week at UofM Libraries and devoted approximately 95 of the required 150 total hours of the practicum to this project. Rachel Scott, UofM Libraries' integrated library systems librarian, provided strategic planning and systems support.

The first stage began with a review file of order records comprising all active and cancelled serial subscriptions. In Sierra, the "Create Lists" function enables one to compile query results into a list of records, called a review file. This file omitted publisher names, so we identified the publishing body of each title, using both Ulrichsweb Global Serials Directory and EBSCO's online interface, our subscription agent. This list of publishers served as a guide for locating hard copies of license agreements on file within McWherter Library's administrative offices. Using the license agreements in our possession, we conducted a document analysis to determine the perpetual access terms of each publisher's agreement. A color-coding scheme exploying sticky notes was used to identify perpetual access-related topics in the license agreements. For example, yellow tags indicated fee structures for perpetual access, orange tags for coverage information, and green tags indicated special conditions. Figure 1 shows an example of a license agreement coded for perpetual access terms.

A Microsoft Excel spreadsheet built on the review file was used to track each publisher and the perpetual access information obtained from the analysis. The spreadsheet enabled us to note common trends among publishers and their approach to perpetual access, and to consider the most significant information to record later in our ILS.

The color-coding scheme and analysis revealed three recurring topics in the publishers' discussion of perpetual access in license agreements: coverage, location, and cost. We decided to encode this information in our Sierra ILS. Each record type (bibliographic, holdings, item, order, etc.) comprises both fixed and variable-length fields. Fixed-length fields are encoded with either a date, monetary amount, or a code; Sierra limits the length of the code, the code's definition, the length of the code label or name, and the maximum number of codes used within the ILS. The definition—that is, the legend explaining the meaning of the single letter used as the code—for holdings records fixed-length fields, for example, may not exceed twenty-five characters. Variable-length fields allow for free-text writing and maintain much longer limits on length (up to ten thousand characters). Variable-length fields are repeatable, whereas fixed-length fields are not, and variable-length fields are not required, whereas fixed-length fields, if enabled, will appear in every record of a given type.

Early in the project, we identified fixed-length fields as advantageous for encoding perpetual-access information. Because fixed-length fields are encoded with a single character or "code" and are not repeatable, they generate cleaner lists and reports than variable-length fields. Variable-length fields leave room for human error both in data entry and in report generation. The question then became which of the existing fixed-length fields should be used to encode perpetual access information. Because creating new fixed-length fields or enabling existing fields requires a service commitment or opening a ticket with Innovative Interfaces, we investigated which of the available fixed-length fields might be serviceable. Including perpetual access information in the serial's order record makes a great amount of sense; however, all the order record fixed-length fields were already being used to encode order-specific information. Instead, we selected serial codes 1, 2, and 3 in the holdings records because they were not already in use. Selection of these fields for storing perpetual access information was presented and discussed during a meeting of the University Libraries' Integrated Library Systems Advisory Council before implementation; the council unanimously accepted this course of action.

A metadata schema was developed for serial codes 1, 2, and 3, corresponding with the coverage, location, and cost information obtained from the license analysis. The schema includes a single character code and definition up to twenty-five characters for each serial code. Table 1 provides the full schema.

In addition to fixed-length fields, a variable-length field (i.e., internal note) was used to augment serial codes 1, 2,

Table 1. Fixed-length fields in Sierra holdings records with perpetual access information.

Serial Code 1 (Coverage)	Serial Code 2 (Location)	Serial Code 3 (Cost)
b BACK CONTENT	a PHYS ARCHIVAL MEDIA	a ANNUAL FEE
c PUBL+CEASED CONTENT	c PUBL CHOICE OF LOCATION	f FREE ACCESS
f PA INFO NOT FOUND	e E-FILES SENT BY PUBL	o ONE-TIME FEE
n NO PERPETUAL ACCESS	f E-FILES OR PUBL ONLINE	n NON-SPECIFIED FEE
p CONTENT PUBL UNDER SUB	m ARCH MEDIA OR 3RD PARTY	r ONE-TIME+REPLACEMENT FEES
s SEE NOTES	o PUBL OR 3RD PARTY ONLINE	s SEE NOTES
t PUBL+TRANSFERRED CONTENT	p PUBLISHER ONLINE ACCESS	
u PUBL OR BACK CONTENT	r ARCH MEDIA OR PUBL ONLINE	
	s SEE NOTES	
	t 3RD PARTY ONLINE ACCESS	

Table 2. Examples of publishers with fixed-length and variable-length fields for perpetual access information.

Publisher/License	Serial Code 1	Serial Code 2	Serial Code 3	Internal Note
AIP Publishing	p CONTENT PUBL UNDER SUB	p PUBLISHER ONLINE ACCESS	s SEE NOTES	Annual fee (waived if subscribed to at least one AIP archival journal).
Emerald	t PUBL+ TRANSFERRED CONTENT	f E-FILES OR PUBL ONLINE	s SEE NOTES	Free access to merged journals unless a title substitution is made. Perpetual access to all licensed materials requires new license.
London Review of Books	p CONTENT PUBL UNDER SUB	s SEE NOTES	f FREE ACCESS	Publisher sends copies in facsimile or text format.

and 3. For example, a publisher that required an annual fee for perpetual access but indicated that the fee could be waived under certain conditions was coded "s SEE NOTES" under serial code 3 and given an internal note that explained this case in more detail. Table 2 displays examples of publishers with both fixed-length and variable-length codes to represent perpetual access. Figure 2 shows a screenshot of a holdings record with perpetual access codes, in this case from a title published by AIP (American Institute of Physics).

Publishers were contacted in those cases where clarification was needed or a license was not on file. While all respondents answered our query regarding perpetual access information in terms of coverage, location, and cost, others sent us the most current license template for academic institutions. Delayed or incomplete responses from some publishers forced us to begin entering the fixed-length codes in stages: first a batch of entries for the publishers whose licenses we had on file, then new batches of entries based on publisher responses.

Limitations

Coding the holdings records was not efficient for several reasons. The fixed-length codes were manually entered, rather than by global update. Doing so made sense as we determined the parameters and scope of the project, especially at initial stages when only a few licenses had been obtained. However, even after the schema was approved and the plan was devised, we struggled to generate a comprehensive and accurate review file on which to run global updates. Running lists on particular data in bibliographic records was not successful because bibliographic records for serials are not regularly updated via an automated process and are inconsistently encoded.

The spreadsheet used to track workflows contained the title, database order record number, status (active or cancelled subscription), publisher, and codes for perpetual access information. Because the lists included the Sierra order record number and not the holdings record number, and the two different record types do not necessarily have a 1:1 relationship, there was some hesitation to compile a review file with the available data. Generating a list of holdings records with corresponding order records would potentially omit data. The most recent Sierra software update (2.1) includes the capability to import record numbers into a review file. Previously, this was achieved by creating macros to compile review files from a list of record numbers or by converting a list of order numbers into a MARC file using the Delimited Text Translator tool (in MARCEdit) and loading it via Sierra's Data Exchange module. MARCEdit is an external editor that enables users to convert to and from MARC from a variety of file formats. Using MARCEdit for this purpose requires one to export data from Sierra, ensure that order numbers contain check digits, create or customize a load table that does not compromise the integrity of the

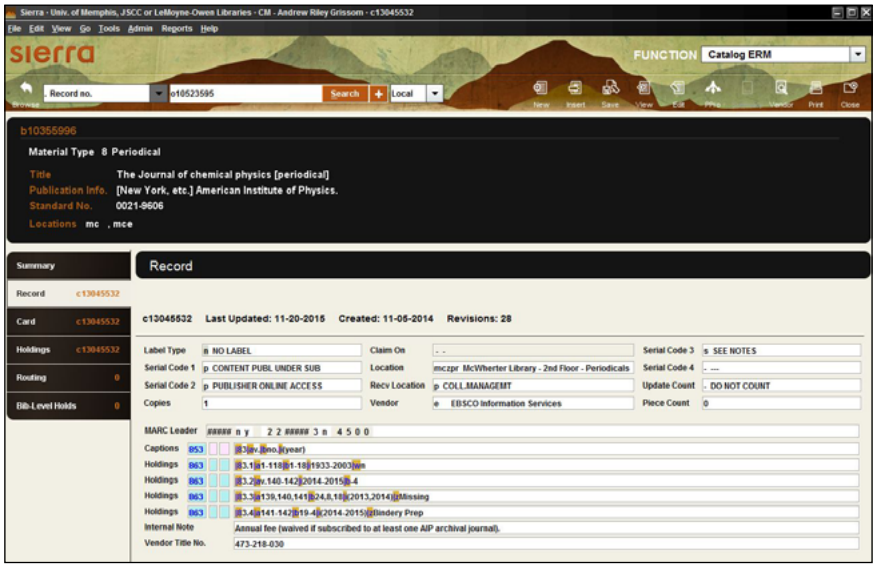

Figure 2. Example of a single serial title

data at the point of the load, instruct the database to "Use Review Files" before beginning to load the data, and, finally, load into Data Exchange.

Global updates occurred instead for the variable-length field (i.e., internal note). After manual coding of serial codes 1, 2, and 3, running accurate lists became possible via Sierra's "Create Lists" function. Most publishers differed in their perpetual access information as represented in our designated codes; therefore we were able to run lists of titles not through the commonality of their publishing body but through their unique combination of fixed-length codes. For example, the query shown in figure 3 produces only titles published by Emerald. Sierra's "Global Update" was used to insert internal notes in the holdings records.

Results

The coding system for perpetual access is now applied to 1,660 unique titles in UofM's e-journals collection. For this system to continue to perform as intended, workflows have been planned to keep the information up-to-date. At the point of adding a new subscription to the ERM, we will determine whether the title falls under an existing license agreement. If it does, we will apply the predetermined serial code values for the publisher. If the title requires a new license agreement, we will analyze the agreement for the values of coverage, location, and cost of perpetual access, and apply appropriate serials codes. We explored the possibility of hosting PDFs of license agreements in Sierra's "Media Management" module. However, although documents can be scanned, uploaded, or linked, suppressing the document from public display is impossible.

Shortly after completion of this project, UofM Libraries terminated subscriptions to several hundred journals. Because each title has been encoded with perpetual access information, it was easy to run a review file of cancelled titles and export the perpetual access information. In most cases, publishers offered perpetual access directly via their online platform, requiring us to only change the "dates available" metadata fields in Serials Solutions and Sierra. Others delivered perpetual access content under more complex terms, such as through an agreement with Portico, prompting staff to contact publishers and initiate the process to activate alternate means to access our entitled content. Still others provided no perpetual access, requiring links within our link resolvers to be disabled. A process that in earlier years would have required manual lookup of scores of titles, requiring many hours of work, was reduced to a simple "Create Lists" query and a few hours of work interfacing with publishers.

Conclusion

We recommend a project such as this for libraries that provide e-journals to their patrons; it simplifies the necessary tasks surrounding journal cancellations and in the future will allow us to more easily make informed decisions about cancellation of titles when perpetual access is a concern. This is also an advantageous opportunity for collaboration between library personnel. As perpetual access affects the long-term accessibility and preservation of e-resources, it also affects all the means by which library staff can effectively provide services to their patrons. An effective process for tracking and storing perpetual access information requires everyone's expertise—including, but not limited to, access services, reference, collection management, and ILS personnel. Sierra users may drastically differ in which fixed-length fields are open or in-use for specific record types—we used holdings records because of currently existing internal practices—but others may discover options that provide the best solutions for storing perpetual access information. By generating these solutions, library personnel will gain invaluable knowledge of their own systems and serial inventories.

Staff time is a significant barrier to tracking perpetual access. A project such as this one demands hours of examining license agreements, developing a strategy to record and store perpetual access information in a stable location,

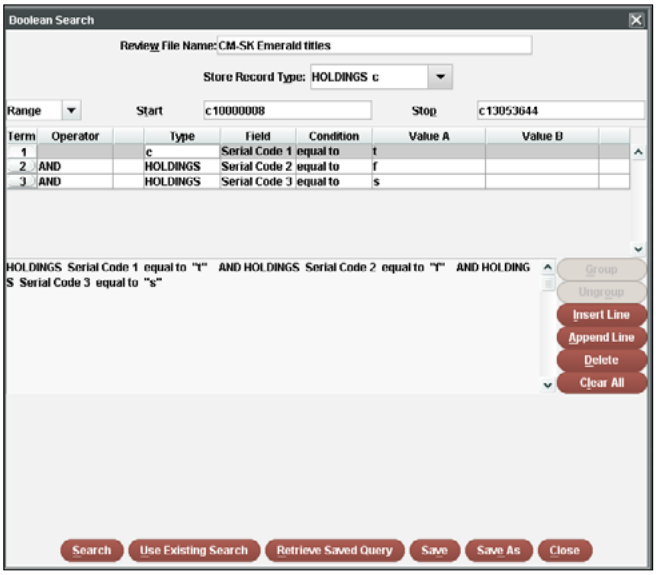

Figure 3. Example of a query across single serial code fields to produce a list of titles from a single publisher

and establishing a workflow to carry these processes into the future. In our case, the contributions of two full-time staff members and a practicum student proved essential to tracking perpetual access across a substantial portion of the university's e-journal collection. Starting from scratch on perpetual access may seem overwhelming, but this kind of project is a proactive step toward ensuring that perpetual access is provided whenever it is available.

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Book Reviews

Elyssa M. Gould

Managing eBook Metadata in Academic Libraries: Taming the Tiger. By Donna E. Frederick. Amsterdam: Chandos, 2016. 280 p. $78.95 paperback (ISBN: 978-0-08-1001516). Chandos Information Professional Series.

This volume is part of the Chandos Information Professional Series, designed to provide easy-to-read and practical coverage of subjects that are of interest to librarians. The book is written for newer librarians and librarians transferred to technical services, but it is meant to be useful to anyone working with e-books and the metadata associated with them. The approach of the book is to guide the reader through the various definitions, concepts, and approaches related to metadata management so that they can be applied in the reader's library. This is not a how-to guide on managing e-books, but rather a guide to help the reader examine the metadata and e-book environment at their own library and create their own management plan using the principles, practices, guidelines, and standards presented in the book.

The book is divided into nine chapters, taking readers from basic concepts to special topics in e-book metadata, and it includes a bibliography and index. Frederick uses the introductory chapters to define the terms used throughout the book (e.g., e-books and metadata) and offers the perspective that e-books are a disruptive technology for academic libraries, or, a tiger that needs to be tamed by designing a library specific method for managing e-book metadata. Frederick uses analogies and real library situations to explain library technical processes to a new or new-to-technical services librarian.

For the purpose of this book, e-books are defined as electronic monographs including digitized documents, maps, and music scores, streaming music, video, audio, and podcasts. "Metadata are structured information which represents a resource or service. This information is used to store, discover, retrieve, use and/or manage that resource in the present and over time" (3). The introductory chapters outline the best practices for planning metadata and also offer practical advice, such as to avoid customizing e-book records for user-friendly display in the integrated library system (ILS) or library management system (LMS), but instead to customize the ILS or LMS to display all e-book records in a user-friendly way. Frederick not only introduces the reader to thinking holistically about managing e-books, but also reveals the reality of working with e-books in academic libraries. Librarians often have to learn through their own trial and error. Mistakes made in the past will be discovered and new mistakes will be made as librarians traverse this complex metadata environment.

The book contains helpful questionnaires to guide the reader in asking the appropriate questions of their own library to collect information regarding the cycle of e-book metadata from selection and acquisition to discovery and maintenance over time. Managing e-book metadata in academic libraries is not just about batch or bulk loading bibliographic discovery records into the catalog, but a comprehensive system supporting a greater range of library processes.

Of particular note is chapter 4, which focuses on the often overlooked metadata of acquisitions. E-books appear on the surface to be acquired just like hard-copy books, but librarians must also consider access fees, licenses, renewals and cancellations, consortia purchasing, demand- or patron-driven acquisition, and platform and vendor changes. Frederick outlines five principles for creating acquisitions metadata and provides hints to applying those principles. Although the principles may seem like common sense, they are often not followed in practice, and the book does an excellent job of reminding librarians why it is important to use controlled vocabularies, provide clear guidelines and instructions to staff for creating and using the metadata, focus on future as well as present needs, and always keep the big picture—the library's larger systems—in mind. In addition to acquisitions metadata, access metadata must be recorded following the same best practices, making sure the people involved with creating and using the information know where and how it is recorded.

Frederick anticipates that many experienced librarians will skip directly to chapter 6, but the introductory chapters should be considered essential reading as they inform the reader of how "managing record sets is integrated within the framework of a larger eBook metadata management plan" (144). Catalogers must keep in mind that e-books cannot be physically browsed for, so high-quality discovery metadata are essential whether creating original records, copy cataloging, or loading record sets. Record sets from vendors or publishers typically need to be customized with a program like MARCEdit, but generally the quality of record sets provided by vendors and publishers has increased significantly over the years. The record sets cannot just be loaded and forgotten about, so the metadata-management plan must address tracking of the record sets. "This process of recording information for tracking purposes is somewhat similar to what libraries have done historically to deal with

the check-in of their print journals" (151). The book focuses almost exclusively on MARC metadata, and it also introduces readers to Knowledge Bases and Related Tools (KBART) for use within discovery services.

E-book metadata maintenance extends beyond discovery metadata into preparing for and troubleshooting platform changes, loss of rights, access issues, and subscription changes. Preservation metadata are also discussed for e-books with perpetual access from vendors in light and dark archives and for locally hosted digital monograph collections (e.g., electronic theses and dissertations). Even though the deselection process for e-books is underdeveloped, Frederick uses a case study to illustrate the challenges of deselection and deduplication with an emphasis on the need for well-planned acquisitions and access metadata to assist in decision making.

Managing E-book Metadata in Academic Libraries: Taming the Tiger is an excellent introduction to e-book metadata management; it offers practical advice on the management of all types of e-book metadata and working through the issues that come with e-book collections. Readers will be prepared to tame the tiger in their own libraries by knowing what questions to ask and what information needs to be gathered to create their own e-book metadata-management plan. Frederick often reminds the reader that they are not alone and provides resources and toolkits shared openly by librarians and other tiger tamers to help one another. By focusing on principles, best practices, guidelines, and standards, the author has written a book relevant to academic libraries of all sizes, as well as a great introduction for students to the complexities of managing e-book metadata.—*Jennifer Fairall (jfairall@siena.edu), Siena College Library, Loudonville, New York*

Metadata. By Marcia Lei Zeng and Jian Qin. Chicago: ALA Neal-Schumann, 2016. 555 p. $84.00 softcover (ISBN: 978-1-5557-0965-5).

The second edition of Qin and Zheng's *Metadata* is a welcome and thorough update of an already valuable text. The authors have expanded on the first edition in a way that reflects a detailed understanding of an often complex subject. Metadata are a constantly shifting landscape with new schema and tools emerging and fading at an amazing pace. Qin and Zheng deal with the subject deftly, providing content that is clearly situated in its own context that will serve as ample reference material even in such a fast-paced landscape. In addition, the book is complemented by valuable online content that includes a metadata tutorial, chapter outlines, and exercises. The website includes a section with similar content to the first edition of the book, allowing users to compare the structure of both editions and to benefit from additional practice exercises. Additionally, the links available in the online appendixes are invaluable for readers, providing an extensive reference source for further research and work in metadata.

One of the best features of the text is that it is highly structured. This reflects the authors' thorough understanding of the subject matter; the book is as navigable as any strong metadata record. Chapters are subdivided frequently, making them easy to reference and creating digestible sections for readers that may be encountering this highly technical subject for the first time. *Metadata* provides a strong introduction to the subject of metadata in general and its role with the library and information community. Terms are explained thoughtfully, with special attention to why they matter to library and information science professionals. Broad concepts are complemented by detailed examples. Definitions are presented clearly and reviewed in further chapters, enabling each section to stand on its own while the text can still be taken as a whole without feeling redundant. It is refreshing to see authors use such a wide variety of schema in their examples; discussions of library metadata often mention any number of schema while continuing to provide concrete models of only one or two. Qin and Zheng tackle Metadata Object Description Schema (MODS), Metadata and Encoding Transmission Standard (METS), Categories for the Description of Works of Art (CDWA), and Dublin Core, just to name a few. Their discussion of the difference between a schema and how it is encoded is also one of the clearest and detailed that this reviewer has ever encountered. In addition, significant attention is paid to Resource Description Framework (RDF), including its evolution from a standard for describing web content to its current role in describing and encoding information about almost any person, place, or concept and the relationships it has with others. The authors also devote an entire chapter to interoperability, which is a growing concern for institutions looking to integrate various schema without having to start from scratch. Qin and Zheng provide a detailed examination of the challenges and opportunities that occur when trying to integrate data from multiple schema into a cohesive repository. Again, discussions of these concepts often attempt to explain the various complications while failing to provide examples that illustrate them; *Metadata,* in contrast, balances the two exceedingly well. The visualizations employed by the text are useful and build on one another and provide examples using real objects. Metadata texts for libraries and archives can sometimes default to using print book examples to illustrate how schema work, and while that is somewhat useful, it does not illustrate the real complexity of using various metadata schema to describe museum objects or digital files. Qin and Zheng include multiple demonstrations of how to apply various schema to different types of resources, which creates a more holistic understanding of the subject.

The text is not only valuable for those looking for an A-to-Z examination of the role and use of metadata in library

and archival communities. It is a valuable reference tool, providing an entire chapter on various schema and their implementations. The authors provide cogent discussion of the advantages and disadvantages of each, along with ways different schema can and should be used together to produce useful and standardized metadata statements. The book goes beyond a discussion of metadata as the next iteration of library cataloging and classification, and instead presents it in its larger context as part of the Semantic Web and all of the potential that that entails. *Metadata* is a welcome addition to the growing body of work on the potential and importance of moving resource description in libraries and archives into a new age: one that is more visible, more flexible, and more focused on integration with the Semantic Web and information landscape as a whole.—*Elizabeth Miraglia (miragliaelizabeth@gmail.com), UC San Diego, San Diego, California*

An Emergent Theory of Digital Library Metadata. By Getaneh Alemu and Brett Stevens. Amsterdam: Chandos, an Imprint of Elsevier, 2015. 122 p. $78.95 softcover (ISBN: 978-0-08-1003855); $78.95 e-book (978–0-08–1004012). Chandos Information Professional Series.

This slim volume is a recent release in the long-running Chandos Information Professional Series. Author Getaneh Alemu has an international work history, and is currently cataloguing and metadata librarian at Southampton Solent University in the United Kingdom. Co-author Brett Stevens is a lecturer in the School of Creative Technologies a few miles down the road at the University of Portsmouth.

Alemu and Stevens' main objective is to state a case for library systems that support the creation and use of socially constructed metadata as a diverse and contemporary addition to expert-created metadata. Users, they argue, are currently relegated to passive consumers of library metadata rather than participants in its creation. The authors posit that effective use of socially constructed metadata is only possible in an atmosphere of open, linked data.

The book opens with a foreword "Re-thinking library metadata," which provides a concise abstract of the authors' aims. The first two chapters offer a summary of the history of cataloging beginning with Pannizi's 1841 *Rules of the Compilation of the Catalog* and touching on the works by fathers of librarianship Cutter and Ranganathan.[1] The authors then cherry-pick four principles from Svenonius to apply to their argument by explaining how these four principles are no longer adequate for describing information resources in a digital environment.[2] They make some valid points in this section; for example, that the principle of sufficiency and necessity "may significantly impact users' needs" (12). A weakness of the text is that the authors spend the time working through problematic aspects of these principles yet only barely mention any effect of these issues on the theory they are evolving after this portion of the book.

The first three chapters, where Alemu and Stevens lay the groundwork for their theory, have some properties of a literature review, but their strategy here is frustrating. Throughout these chapters the authors present information that is often followed by four or more citations of articles or books without any page references. They largely fail to directly address any cited authors' distinct contributions. This approach leaves the reader in doubt about the specificity and grounding of the opinions presented in the book.

Alemu and Stevens recognize and discuss the need to monitor and apply some controls to socially created metadata such as homonym elimination. Other forms of control, such as deletions of malicious comments, would evolve in the hypothesized system much like the self-healing qualities of Wikipedia. The authors give a great deal of responsibility to users for contribution, discernment, and knowledge regarding competing metadata elements.

The background and conclusions of this book are directly related to a trio of reports issued by the OCLC Social Metadata Working Group relating to social metadata; however, the authors do not cite any of the findings of that group.[3] For example, the OCLC Executive Summary (2012) states clear findings about the success of user-contributed metadata that directly supports the authors' assertions about the utility and importance of socially constructed metadata. Additionally, the OCLC reports enumerate trends and themes that emerged from their survey that correlate on several points to Alemu's and Steven's arguments from their own survey. The text would have benefited from the inclusion and discussion of OCLC's findings.

The bulk of the authors' conclusions rest on a series of "57 in-depth interviews . . . with metadata librarians, metadata experts and library users" (45). Unfortunately, only their results are reported without any additional information about the interview structure or questions asked, leading readers to question the extent, specificity, and uniformity of the interviews. This is the first opportunity to understand the academic nature of the theoretical work. Although the series this volume belongs to is targeted to academic librarianship, this individual work never identifies their specific audience. Their interviews were almost exclusively conducted at universities (forty-six), which is the first clear indication of the constituencies they are addressing. The results of these interviews are selectively quoted throughout the rest of the text. This reviewer found it curious that in more than twenty-five quotations from interviews in a text focused on user-generated metadata, only four unique users were quoted in the text.

There are at least two key components related to the authors' theory that are either scantily addressed or altogether omitted. One is an all-too-brief discussion of how to

engage users in metadata creation. In three short pages they summarize both the barriers to user participation and their solutions for eliminating those barriers. Additionally, they do not address the idea that users will only contribute to a small portion of any institution's resources, but socially generated tags and reviews may have the effect of causing users to prefer certain materials without considering the full range of information available.

The evidence for the authors' theory is often martialed in a nonlinear manner. They have presented what, to a reader, appears to be a complete theory at the end of chapter 4 but then take up with the second part of their argument regarding open, linked data that is largely based on reiterating the main points of their previous conclusions about socially constructed metadata.

The text itself sadly manifests many distracting qualities. Certain words are used too habitually (i.e., "however" and "obviate"), and the text suffers from grammatical mistakes and poor copy editing. The volume is illustrated with several charts, but they generally either illustrate concepts that are abundantly clear from the text, or the graphics are so confusing that they becoming meaningless.

Alemu and Stevens have evolved a professionally interesting theory that bears discussion and consideration. Regrettably, they have not presented it in this volume with sufficient precision to adequately bring the theory to light.—*Elizabeth Shoemaker (shoemakerelizabetha@sau.edu), St. Ambrose University, Davenport, Iowa*

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