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Looking Back, Moving Forward in the Digital Age

A Review of the Collection Management and Development Literature, 2004–8

Daryl R. Bullis and Lorre Smith

The collection and management of digital resources dominated collection development and management literature produced during 2004–8. Themes covered the changing nature of local collections, redefining collection management responsibilities and practices, cooperation and collaboration, and collection assessment and evaluation. The literature reflected the struggle to manage a vast array of resources while library budgets stagnated. While publishers continued to offer more bundles of electronic publications, librarians responded with strategies to collaborate and negotiate for feasible pricing structures. A culture of continuous assessment was a major topic. During this review period, access to and ownership of digital resources reemerged as a pervasive theme. The mood of the literature was generally optimistic in light of the considerable challenges libraries faced in managing their resources to accommodate the rapidly growing and ever-shifting digital landscape. While looking back on the established philosophy of traditional collections activities, authors moved decisively into the digital age and emerged with a positive vision of the future of library collections.

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The authors of this review focus on selected resources published 2004 through 2008 that addressed collection development and collection management. The authors follow the lead of Phillips and Williams' previous literature review and of Casserly's book chapter, both of which focus exclusively on North American academic libraries.¹ To collect appropriate items for review, the authors scanned issues of the major peer-reviewed journals in collection management and development (e.g., *Collection Management*, *Collection Building*, and *Library Resources and Technical Services*). The authors also identified monographs, scholarly journal articles, professional reports, and papers published during this period by performing literature searches in Library and Information Science Abstracts (LISA); Library, Information Sciences, and Technology Abstracts (LISTA); and WorldCat. What follows is a selective but not comprehensive list of publications. Excluded were electronic discussion lists (e.g., LIBLICENSE-L, COLLDV-L, and ERIL-L), conference proceedings (e.g., Charleston), non-scholarly publications, and some peer-reviewed pieces that were deemed too locally focused or peripheral. Although preservation, scholarly communications,

and serials management often are included in the definition of collection management, they were generally excluded from this review and may be covered in separate literature reviews devoted to those subjects. Some overlap occurs with Casserly's review of the research in the field of collection management covering the period from 1990 to about 2007. This review, however, is not restricted to research studies and therefore includes some publications that discuss collection management theory and practice.

Phillips and Williams' literature review, which spanned the collection development and management literature from 1997 through 2003, identified several themes that continued to be of importance during this period: the changing nature of local collections, redefining collection management responsibilities and practices, cooperation and collaboration, and collection assessment and evaluation.² While librarians developed strategies, procedures, and policies encompassing many new and emerging information formats and new tools for managing them, they reflected the struggle to manage a vast array of resources while library budgets stagnated. Publishers continued to offer more bundles of electronic publications and librarians responded with strategies to collaborate and negotiate for feasible pricing structures. A culture of continuous assessment was a major theme. In the period 1997 through 2003, the serials crisis eclipsed access versus ownership in the literature; in this review period, access to and ownership of digital resources emerged as a pervasive theme.

Changing Nature of Local Collections

The literature of this review period was characterized by calls to reassess collection management. Chief among these was Atkinson's outline of six key challenges initially presented at the Janus Conference, "Research Library Collections: Managing the Shifting Ground between Writers and Readers," held at Cornell University, October 9–11, 2005.³ Atkinson identified the reasons for building collections as creating institutional capital, preserving scholarly materials, and privileging or identifying materials of quality. He briefly discussed the collection in terms of formats and forms of material, types of scholarly output (or what he called notification sources), and the players in the information exchange process before identifying the challenges he saw facing collection managers. The challenges he identified are coordinating efforts to achieve full-text retrospective conversion of print materials (recon), working with publishers to accelerate their transition to digital publishing (procon), defining core collections, creating a library market that will negotiate with and stipulate terms to publishers, archiving print and nonprint materials, and developing alternatives or supplements to the existing (somewhat irrational) scholarly

communication system. All of these require that research libraries work as a collective—a change in the culture of collection building that will require some surrender of individual or institutional leadership and collection distinctiveness. As he noted, "Collection services will either move forward as a group, or they will remain where they are."⁴

Edelman and Sandler both spoke at the Janus Conference and published versions of their talks.⁵ Edelman took responsibility for providing a fascinating backward glance in his personal account of the emergence of collection development and management as a specialization within librarianship over the twentieth century. Sandler addressed how libraries and collection development librarians should remain relevant in a rapidly changing information environment and said collaboration in the larger world is essential while librarians tailor their collections and services to local user needs.

Martell, Schmidt, and Wilson summarized broader themes within the period and deserve attention for their astute distillations of issues and challenges.⁶ Martell observed a slight decline in circulation and a more significant decline in reference service along with skyrocketing use of electronic resources and concluded that librarians and users will interact more frequently in virtual space. Schmidt outlined contemporary issues concerning the future of collection development, such as reduced financial resources and the changing marketplace and envisioned collaboration as a key strength of collections librarians. Wilson speculated on the future of her library at the University of Washington and attempted to summarize a vision of the coming Global Research Library. She explained how the world of research and libraries has changed fundamentally and is moving inexorably toward the Global Research Library as an "interoperable network of services, resources, and expertise."⁷ Wilson emphasized collaboration between libraries and a culture of assessment that will steer the movement toward the Global Research Library she described.

Atkinson's challenges regarding recon, procon, and defining core collections spoke to the need to redefine and refocus the local collection.⁸ Also speaking at the Janus Conference, Sandler focused his comments on the nature of research library collections and the role of the collection manager.⁹ Sandler noted that collection development efforts that are focused on truly local needs including those built on geographic interests, institutional collection strengths, specific program needs, and demographic characteristics will be those that are most highly valued going forward. Beyond the Janus Conference, several authors articulated new definitions of both libraries and their collections because of the profound changes in scholarly communication and in publishing practices. Kaufman proposed that libraries focus on moving from collections to services and support, called for larger consortia as a collaboration avenue, and identified

special collections as a means of achieving distinction from other libraries.¹⁰ Gherman recommended shifting libraries' emphasis from developing traditional collections to creating institutional repositories with what he called more up-stream materials and edge collections.¹¹ Lee's study of the users' perspective on the collection suggested that the users' focus on access, personal convenience, and flexibility should be incorporated into the librarians' definition of the collection rather than the more traditional model of a library-centered and fixed collection.¹² Lewis proposed a strategy for academic libraries to address the wide application of digital technologies by completing the migration from print to electronic collections; retiring legacy print collections; redeveloping library space; repositioning library and information tools, resources, and expertise; and migrating focus from purchasing to curating electronic content.¹³

Size and Growth of Local Collections

Literature about the size and growth of collections was dominated by a focus on libraries' unique holdings and on the effect of shifting collecting from print to electronic resources. The Association of Research Libraries (ARL) published statistics that showed distinct shifts in collecting practices and collection data reporting practices. In their discussion of 2004–5 data, Kyrillidou and Young acknowledged the growing importance of capturing more precise data about electronic resources and modified their reporting statistics to accommodate them.¹⁴ The same authors, in their analysis of 2005–6 data, stated that counting the number of volumes held, volumes added, and serials subscriptions in a library is no longer the best measure of valuing the importance of the local collection.¹⁵ The ARL adjusted its approach from counting the addition and cost of serials subscriptions to counting the addition and cost of serials titles in their 2006–7 discussion.¹⁶ By 2008, Kyrillidou and Young noted that ARL libraries were acquiring 60 percent fewer monographs per student than they purchased in 1986, following a downward trend over a two-decade period.¹⁷

Stoller surveyed academic library holdings between 1994 and 2004 and found that libraries still focused on monographic and print collections even as they developed their electronic libraries.¹⁸ He foresaw this model as unsustainable and even inappropriate considering that academic libraries had not yet confronted the more serious issues surrounding the dramatic changes in scholarly communication. Lavoie, Connaway, and O'Neill's 2007 survey of academic libraries' digital holdings using WorldCat showed that libraries were collecting a growing proportion of electronic titles.¹⁹ Two articles identified unique library holdings. Bernstein's study of a random sample of OCLC WorldCat's bibliographic records for print books determined that the vast majority of items are held by fifty or fewer participating

libraries.²⁰ Chrzastowski and colleagues' study found that more than 50 percent of print serials collections held in the Consortium of Academic and Research Libraries in Illinois (CARLI) and ten other Illinois research university libraries were unique last copies.²¹

Collection Composition

Several publications addressed collection composition, including the conversion of print collections to electronic, new approaches to hybrid collections, and a focus on local collections. Although most of the literature focused on local issues of collecting practices, the Council on Library and Information Resources (CLIR) published two large surveys covering the state of specific national collections. Brogan and Rentfrow assessed the scope of e-resources on American literature and found that scholars agreed that the ready availability of digital resources has transformed the landscape of the study of literature in many positive ways, but that significant issues complicate the broader acceptance of digital scholarship.²² These include insufficient peer-review processes, lack of trusted platforms for preserving digital scholarship, copyright complications, lack of viable business models, and a lack of specialists. Smith, Allen, and Allen's survey of the state of audio collections in American academic libraries showed an increased demand for the use of audio resources in both teaching and research, but significant recurring problems with access issues, both technical and legal.²³ They concluded that money alone will not solve the problems; rather, new approaches to intellectual control, new technologies, and aggressive approaches to access policies will help ensure the ongoing importance of audio collections. Hunter stated that libraries are inevitably moving toward a digital collections environment, but warned that bulletproof digital archiving has not yet been guaranteed.²⁴ She further observed that the lack of this guarantee precludes the movement to end subscribing to print journals and that librarians, scholars, and publishers must explore concerns and options together. Baker countered that the largest challenges in taking responsibility for digital information and knowledge management are less technical in nature than they are financial and social.²⁵ Martell wrote that the use of physical collections plummeted between 1995 and 2006 while use of electronic resources skyrocketed.²⁶ Because of the dramatic increase in demand for electronic resources, he recommended a proportional increase in budget allocations for electronic resources with declining allocations made for monograph and print collections.

Case reported in 2004 that in 2001–2, the average academic library spent an average of 92 percent of their \$1.4 million acquisitions budget on electronic journals.²⁷ She identified a trend toward more libraries canceling print journals and subscribing to electronic versions. DeVoe's

2005 survey of academic libraries showed that 85 percent of the respondents cancelled their print journal subscriptions when the library had access to electronic versions of the same titles.²⁸

Connaway and Wicht provided a historical retrospective of the evolution of the e-book and maintained that e-books, despite well-known problems, are worth the effort because they are what users want.²⁹ They urged a broader dialogue between librarians, content providers, and publishers to overcome academic libraries' reticence in adopting the e-book. Bailey conducted a study at Auburn between 2000 and 2004 in which he showed e-book usage through netLibrary increased by three to five times while use of the print collection decreased by a third.³⁰ Robbins, McCain, and Scrivener reported that ARL libraries were trending toward the cancelling print reference sources, relying instead on electronic access to the same sources.³¹

Open Access

While open access (OA) continued to be discussed as an aspect of collection management, many unresolved issues remained. Brogan's *Contexts and Contributions: Building the Distributed Library*, a major contribution to the Digital Library Federation's (DLF) suite of work, focused on the Open Archives Initiative Protocol for Metadata Harvesting (OAI-PMH).³² Van Orsdel and Born provided an important snapshot of the status of the OA movement.³³ They stated that the serials crisis has morphed into a crisis of public policy and described academic libraries' responses to both publisher strategies and federal policy initiatives. Johnson projected that OA would benefit the sciences more than other disciplines and that it would be a widely anticipated cost-reducing option.³⁴ Anderson, in her monograph about digital library ethics, reasserted Stewart Brand's principle that information wants to be free and indicated that OA follows that principle.³⁵ Hunter discussed the road by which OA found its place in collection management, observing that collection development in the 1990s moved to collection management, and that in the 2000s collection management combined with online access management (the "right resource, right now" perspective).³⁶ Hunter noted that OA might provide an avenue for libraries to explore alternative collections options. Heath and Duffy showed that the rising costs of scholarly journals have changed the relationship between researchers, librarians, and publishers.³⁷ They urged OA, despite the concern that its sustainability had not yet been demonstrated. Schmidle and Via illuminated the crisis in library information and science serials and used this problem to advocate for affordable OA.³⁸ Johnson advocated for the Open Content Alliance (OCA) model for mass digitization over Google's commercial enterprise.³⁹ He discussed the OCA's embrace open accessibility principles as a better

fit for the academy and urged libraries to pursue policy initiatives to help shape the global digital library. Hood reported that a majority of ARL member libraries surveyed for a SPEC Kit were providing links to journals most commonly associated with the OA movement.⁴⁰ However, most of those responding libraries had no collection development policies that addressed criteria for selection of externally hosted OA resources. Walters analyzed the potential impact of OA on institutional journal expenditures and concluded that a small number of the top research libraries would end up paying a far higher proportion of the aggregate cost.⁴¹ Buczynski warned that the OA movement is undermined by direct-to-consumer user-pay options in collection development.⁴²

Changing Focus in the Local Collection

Numerous publications addressed collecting materials not traditionally associated with academic library collection development policies. Attitudes changed toward collecting materials that once were considered ephemeral to library collections as academic and user demands influenced academic libraries to think more locally. This period saw an increasing interest in collecting materials relating to both the study of and engagement in popular culture.

To encourage academic libraries to focus more on their local needs, authors addressed the opportunities and challenges of catering to users whose language needs may not be within the scope of the library's capabilities. Agee and Solis urged Spanish language collections experts nationwide to share their knowledge openly and widely so that libraries that have no Spanish language expert can benefit from their collective expertise.⁴³ On a smaller scale, Schomberg and Grace outlined how the library at Minnesota State University–Mankato tailored its collection development efforts to meet the needs of their growing Somali student population.⁴⁴

Video games and popular forms of fiction, two areas of popular culture materials, received attention. Harris and Rice reported that video gaming collections were becoming more prevalent in academic libraries.⁴⁵ Ward, Laskowski, and Sandvig conducted a 2007 study that found that 70 percent of public libraries supported gaming in some capacity; they recommended academic libraries consider doing the same.⁴⁶ Gick, Baker and colleagues, and Tappeiner and Lyons wrote about the pros and cons of developing video games collections at academic libraries.⁴⁷ Kane, Soehner, and Wei noted that the emergence of academic degree programs in gaming, such as the Computer Game Design degree program at the University of California–Santa Cruz, can prompt the development of department-centered collections.⁴⁸

The growing practice of collecting graphic novels in academic libraries was discussed by O'English, Matthews, and Lindsay.⁴⁹ Conversely, Matz observed that comic book

collections in academic libraries are almost nonexistent despite their recognition as a scholarly medium in many fields of study.⁵⁰ Collecting chick lit, a genre of popular fiction focusing on the role of modern women in society, was explored by Alsop and Davis-Kahl.⁵¹ Koh, Stoddart and Kiser, and Gisonny and Freedman discussed the growing importance of collecting zines in academic libraries.⁵² Several studies revealed some categories still not collected within the larger scope of the most popular materials. Hsieh and Runner found that although academic libraries are purchasing leisure reading materials, they were not collecting textbooks even though they are very much in demand.⁵³ Mulcahy reported that science fiction novels, despite their popularity, were not extensively collected by ARL libraries.⁵⁴ Halley and Heinrichs found from a survey of academic library holdings in WorldCat that popular culture periodicals were not widely collected.⁵⁵

Cost of Information Resources

ARL published statistics that revealed important indicators of how libraries were handling the dramatic increase of electric resources being added to their collections. In their 2004–5 summary, Kyrillidou and Young noted that the serials crisis was further disrupted by the emergence of the electronic environment, but that the cost of serials had dropped slightly, possibly because of consortial arrangements and Big Deal (bundled journal packages) offerings.⁵⁶ In 2005–6, Kyrillidou and Young noted that indicating the value of unit cost of a serial subscription becomes relatively uninformative when libraries have access to the same serial title through multiple subscriptions and platforms.⁵⁷ In 2006–7, Kyrillidou and Bland concluded that the cost of accessing electronic materials had far outpaced the cost of acquiring other materials.⁵⁸ Indeed, by 2008 the average ARL library spent 51 percent of its materials budgets on electronic resources.⁵⁹

Brewer and colleagues reported on the results of a 2003 ARL retreat in Tucson, which sought to envision a fundamental restructuring of academic libraries in light of ongoing budget crises.⁶⁰ Several articles discussed Big Deals. Hahn reported on a 2005 ARL member survey that measured the satisfaction of ARL libraries with publishers' Big Deals and concluded that although most libraries conducted frequent journal cancellation projects, journal bundles were often protected from cancellation.⁶¹ Despite this, libraries were generally satisfied with the cost of publishers' bundled journal packages. Frazier discussed the liabilities and opportunities of not buying into Big Deals and focused on journal cost-effectiveness.⁶² He argued that the most cost-effective Big Deals are not financially sustainable. Ebert discussed the utilization of the Big Deal by a consortium of independent academic libraries in New York State and saw this to

be an emerging model of collaboration between libraries demonstrating cost-effective uses of Big Deals.⁶³

Barnes, Clayborne, and Palmer discussed the need for a dialogue between publishers, vendors, and libraries to ensure the ongoing viability of monograph publishing.⁶⁴ Walters observed that book prices were not rising at the same rate as journal prices and that undergraduate libraries could achieve economic sustainability if they were to renew their focus on books rather than journals.⁶⁵ Lawall and Di analyzed library monographic and serials allocations and believed that librarians were struggling with the instability of electronic resource pricing.⁶⁶

Boissy, Feick, and Knapp reported the publisher view of factors considered when setting pricing and how those factors were being changed by the advent of the electronic journal.⁶⁷ Gerhard found that electronic journal pricing models were in extreme flux and that libraries could not sustain their current budgeting strategies.⁶⁸ Hahn discussed the particular problem larger institutions faced with tiered pricing models for journals because they make cost versus benefit decisions more frequently than smaller institutions.⁶⁹ Spencer and Millson-Martula observed that college and small research university libraries have adopted a highly rational approach to managing escalating print serials costs and developing hybrid serials collections.⁷⁰ In their CLIR report, Schonfeld and colleagues projected a future cost analysis and concluded that recurring costs for e-journal titles would remain substantially lower than their print counterparts during a twenty-five-year period.⁷¹

Cooper presented six models to analyze the cost options for providing electronic journal access in the University of California system while acknowledging the importance of print serials to researchers.⁷² Via and Schmidle investigated the return on investment of serial expenditures for increasingly expensive journals in the library and information science field and suggested that librarians must play a proactive role as consumers of the publications.⁷³ They questioned the relative value to library collections of some journals if their prices are high and the journals are seldom cited by researchers. Romero showed that subscription prices of communication studies journals outpaced all other U.S. journals between 1994 and 2004, tripling during the period.⁷⁴ Data like these, she noted, are needed to leverage negotiations with journal publishers.

Redefining Collection Management Responsibilities and Practices

The influx of electronic resources required academic librarians to review a broad range of policies and procedures. Almost every aspect of library practice was affected, and many librarians shared their experiences in meeting challenges,

changing processes, and changing their thinking about library materials and services. This section addresses organization, administration, responsibilities, education, training, collection building, and selection tools and processes.

Organization and Administration

Johnson's general discussion of collection development and management captured most of the themes—including electronic resources—of the period that librarians must consider in all aspects of collections.⁷⁵ Although many authors felt that libraries were still in transition, most described policies, procedures, staffing structures, and budgetary considerations for electronic resources as though they were regular features in the contemporary library landscape.

Walton, Hoffman and Wood, and Perez concentrated on the policy aspects of monograph collections and, while they continued to cover traditional policies and practices such as allocations, subject coverage, and selection, all included discussion of electronic resources either as deserving of particular policy discussion or as subsections of traditional policy areas.⁷⁶ Bodi and Maier-O'Shea asked what should determine collection development policy.⁷⁷ They considered local needs of students, what should be available locally and what should be available remotely, and whether policy should be based on curriculum support or learning outcomes of the curriculum.

Waters attempted to summarize emerging strategic issues for the ARL and identified six: materials become "processable" or subject to computational processing, intellectual property issues surrounding processible materials, new and expanded search and research capabilities, new discipline-based research methods, new publication emphases, and interaction between digital library, digital publishing, and learning management systems.⁷⁸ Collins and Carr edited a volume on the hybrid nature of journal collections, a clearly visible and dramatic shift from 2004 to 2008.⁷⁹

Bosch and colleagues, Anderson, and Mitchell and Surratt described the institutionalization of processes created to handle acquisitions of electronic materials of all kinds.⁸⁰ Although the policies, procedures, and organizational structures are new, the days of being stymied by electronic resources are over; library organizations have developed the necessary changes to ensure orderly processing of acquisitions. Newly created positions (in particular the electronic resources librarian), processes, and negotiation principles are in place and part of the expected organization scheme in acquisitions departments.

Pritchard discussed needed changes in library organizations because of shifts in information formats.⁸¹ Chadwell looked at emerging trends and asked librarians to take seriously the effects of OA, electronic theses and dissertations, consortial collaboration, and the substantive funding

decreases that libraries experienced.⁸² She noted that these important factors for library collections will affect library organizational structures. Anderson urged librarians to reduce allocations to older practices and lesser used materials and services, and increase allocations to newer practices and increasingly popular materials and services.⁸³

Responsibilities, Education, and Training

The subject specialist position was the focus of much attention because of evolving duties and the changing nature of what is being collected. Dorner's study of five major institutions used data to document changes in subject specialist duties and responsibilities.⁸⁴ In their discussion regarding workforce diversity, Kim and colleagues noted the need to recruit subject specialists and librarians of color and various cultural and ethnic backgrounds to best serve the current diversity in users.⁸⁵ McAbee and Graham verified that subject specialists frequently share duties at a general reference desk.⁸⁶ Goetsch documented the expansion of subject specialists' role to include reference, instruction, and liaison responsibilities, with knowledge of electronic resources increasingly required.⁸⁷ Logue and colleagues documented how liaison services changed from collection-centered activities to more user services.⁸⁸ Tchangelova and Feigley discussed the impact of emerging technologies on the traditional subject guide and a need for subject specialists to improve this common tool for user instruction.⁸⁹ Hahn and Schmidt looked at Scholarly Publishing and Academic Resources Coalition (SPARC) member websites and the information about scholarly communication provided in collection policy webpages, viewing this as an outreach concern of subject specialists.⁹⁰ Stoller described liaison responsibilities as a way to build bridges between the collections and researchers.⁹¹ Cassner and Adam's findings revealed traditional subject specialist functions have expanded to include services for distance learners.⁹² Cheney proposed shifting the traditional role of social science specialists to include collection development and user services for government information.⁹³ Carter discussed the creation of manuals for training bibliographers.⁹⁴ Tucker and Torrence spoke to new collection development librarians from the perspective of the trenches.⁹⁵ Dilevko and colleagues recommended using scholarly book reviews to develop subject expertise.⁹⁶ Lyons explored the value of subject specialists attending academic conferences.⁹⁷

Collection Building

What Atkinson called the challenge of defining the core played a large role in collection building literature.⁹⁸ The integration of electronic resources was a collection policy topic and prompted discussion regarding the nature of

library collections. Several writers examined new scholarly and popular cultural phenomena and considered them important emerging areas of collection building. Bodi and Maier-O'Shea asserted that libraries are in a user-centered rather than collection-centered world and that collection management policy and practices must reflect the post-modern era by meeting emerging expectations.⁹⁹ Myall and Anderson informally surveyed electronic resources librarians and speculated on the competencies required to structure collection plans in the changing information environment.¹⁰⁰ Corrigan discussed posting collection policies on the web for outreach purposes and as a staff resource.¹⁰¹

Collection development manuals reflected the codification of policies and procedures for the newly integrated emerging formats and provided tested collection management advice. Evans and Saponaro, and Disher, discussed integrated collection development.¹⁰² Gregory, Boyle, Reese and Banerjee, and Kovacs guided librarians through the digital collection building landscape.¹⁰³ Curtis focused on electronic journals collections and Albitz offered up a detailed discussion on licensing and management.¹⁰⁴ The institutional repository collection building manual by Gibbons and a workbook by Barton and Waters provided guidance for that nascent area of collection responsibilities.¹⁰⁵ The National Information Standards Organization released the third edition of *A Framework of Guidance for Building Good Digital Collections* containing standard definitions and basic collection building principles.¹⁰⁶

Selection Processes and Tools

Shifting techniques in selection was a major theme. The Internet and electronic vendor systems fueled discussions of many new tools for selectors. Emerging themes in scholarly research led librarians to identify selection challenges. Most of the literature discussed technical aspects of the tools and processes.

Quinn discussed the judgment and decision making involved in selection as he looked at cognitive and affective processes of selectors.¹⁰⁷ Johnson and Brown, Levine-Clark and Jobe, and Williams and Best looked at the use of reviews for selecting and analyzed their impact, utility, and predictive value.¹⁰⁸

Various aspects of approval plans continued to receive attention. Fenner provided an overview and introduction for new librarians or students who may not be familiar with approval plans.¹⁰⁹ Jacoby surveyed college libraries and concluded that use of approval plans is not declining.¹¹⁰ In case studies, Brush looked at titles in an engineering monograph approval plan and found that the circulation of mechanically selected titles was more frequent in all categories than the circulation of the books in those areas as a whole.¹¹¹ Kamada found both efficiencies and limitations in an approval plan

for her Japanese studies collection.¹¹² Gyeszly experimented with using a vendor's database to determine categories of materials for selection.¹¹³

Selecting in specialized areas continued to be a topic of interest. Challenges included changes within academic culture and new disciplines organizing within the academy. Multidisciplinary academic fields and broad-based area studies departments compelled selectors to broaden collecting. A collection edited by Hazen and Spohrer discussed selection techniques and issues for new broad-based area studies programs.¹¹⁴ While communication is not a new discipline, Popoff highlighted the ongoing issues with communication journals that arise because of loosely defined disciplinary boundaries.¹¹⁵ Dali and Dilevko provided techniques for selecting Slavic and East European languages.¹¹⁶ Issue 31/32 of *The Acquisitions Librarian* (2004) was dedicated to selection in many subject areas and highlighted how varied selection can be in different subject areas.

Several specialized areas were discussed in monographs. Fling, writing about music, and Benedetti, writing about art museum libraries, assisted selectors who need to understand core collections, specialized publishers and formats, and techniques particular to collection management in these areas.¹¹⁷ Emerging genres in art and literature, including graphic novels, zines, manga, and anime, received attention as important collection areas for the study of popular culture. Miller, Bartel, and Brenner provided core collection advice and techniques for discovering and acquisition in these new areas.¹¹⁸ Connor and Wood edited a volume that considered the issues confronting medical librarians, including licensing of electronic resources, medical publishers, and library liability.¹¹⁹ The Association for Library Collections and Technical Services Sudden Selector's Guides provided core collection and acquisitions advice for business and communication studies for selectors who may not have background knowledge in these areas.¹²⁰ These guides acknowledged budget restraints that made necessary the practice of assigning subjects to selectors without backgrounds in those areas.

Several books and articles discussed selecting types or formats of materials that require particular skills and knowledge. Perez updated a 1996 ALA manual on reference materials to include important electronic resources.¹²¹ Morrison focused on government information, emphasizing the impact of web technology.¹²² Tafuri, Seaberg, and Handman explained techniques for collecting out-of-print materials using the web and print-on-demand services.¹²³ Schmidt, Shelburne, and Vess surveyed hate group websites and explored technical and other issues involved in the collection of entire websites.¹²⁴ Walters looked at selection criteria for electronic journals that take into account new considerations, such as consortial and collaborative selection and publisher bundling.¹²⁵ Kulp and Rupp-Serrano surveyed

the Greater Western Library Alliance and found that many libraries were experimenting with decision-making processes and organizational practices regarding electronic resources.¹²⁶ Cassell and colleagues developed guidelines for gifts, a category of materials that is perennially problematic.¹²⁷

On-demand acquisition using interlibrary loan (ILL) user requests to trigger acquisition procedure and books-on-demand programs received attention. Ruppel analyzed ILL requests to make collection development decisions.¹²⁸ She found that requested titles were of high quality and inexpensive enough to make an on-demand acquisition policy cost effective when compared to ILL. Mouyal studied titles requested by users and concluded that requests can be used to determine additional subjects to be added to collection development policies.¹²⁹ Mortimore analyzed subjects of materials users requested and the implementation of just-in-time acquisitions to achieve an appropriate blend of access and ownership.¹³⁰

Publications addressing collaboration with faculty for collection building focused on serials cancellation. Chamberlain, Caraway, and Andrews reported discussing journal price inflation factors with faculty to inform and engage them in deselection decisions.¹³¹ Srivastava, Linden, and Harmon, and Clement and colleagues, discussed journal deselection factors with faculty and learned about faculty needs and values to inform journal cancellation decisions.¹³² Walther took a detailed look at factors librarians and faculty use to determine the value of journals by surveying both groups in his university.¹³³ He found that the factors used by the two groups were similar and that librarians consulted with faculty to make collection decisions. White explored the extent to which collaborative collection building decisions affected research and instructional support.¹³⁴

Weeding continued as an important aspect of collection management because of perennial questions about the finite space in library buildings and about how to assign priorities to available space. Handis described a process of carefully designing the purpose of the collection and revising the collection policy to fit current programs and collection priorities.¹³⁵ Weeding followed as a way to implement the policy and deselect materials no longer relevant to the programs and priorities. Ward and Aagard discussed using WorldCat and other collection data to deselect serials in their large storage facility at Purdue.¹³⁶

Cooperation and Collaboration

Philips and Williams, in their 1997–2003 literature review, observed that although cooperative collection development had been accepted by academic libraries as standard practice, authors continued to question the benefits of cooperative collection development in light of costs.¹³⁷ During

2004 through 2008, authors no longer questioned the cost/benefit relationship of cooperative collection development, instead they wrote about best practices. In 2005, Hazen wrote that cooperative efforts are often difficult because of the demands on local needs and that some libraries seek cooperative means to sustain or expand coverage, while others withdraw and focus solely on local demands.¹³⁸ In 2007, he wrote that convincing models of consortia had not yet emerged but that cooperation is necessary as the shift in user habits and information formats makes managing collections from within individual institutions more difficult.¹³⁹ Outlining the six key challenges that emerged from the Janus Conference, Hazen asked for a fundamental adjustment in librarians' thinking about collaboration. Conger suggested that a dramatic change was underway in libraries and recommended that library managers undertake more collaborative decision-making processes.¹⁴⁰ Jackson and colleagues stated that in the fifty years before 2004, ARL libraries were adding fewer books from abroad (as reflected in WorldCat).¹⁴¹ The authors suggested that ARL libraries might use these data to inform more formal or informal collaborative collection efforts.

Goldenberg-Hart, in a 2004 Coalition for Networked Resources and ARL forum, discussed how e-research and cyberinfrastructure have transformed scholarship. Goldenberg-Hart stated that transformation demanded that federated libraries form coalitions with local information technology departments because even the most well-endowed institutions can no longer sustain themselves independently.¹⁴² Edwards discussed a solution for collaborative de-accessioning and collecting historically important materials across different types of institutions to foster active relationships.¹⁴³ Eaton, MacEwan, and Potter reported on the initial stages of an innovative collaboration between the university libraries and the university press at Penn State.¹⁴⁴

Several publications addressed regionally managed consortia. Curl and Zeoli wrote about a shared approval plan with YBP Library Services between four Ohio CONSORT colleges (Denison University, Kenyon College, Ohio Wesleyan University, and College of Wooster), a promising model for monographic cooperative collection projects.¹⁴⁵ Lester and Wallace discussed collaborative efforts in an article on the Oklahoma Department of Libraries (ODL), a statewide database program that fosters positive relationships between ODL, academic libraries, and Oklahoma State Regents.¹⁴⁶ A use study by Irwin at five Ohio liberal arts colleges recommended using careful observation of request patterns to address local collection concerns.¹⁴⁷

Two articles addressed collaborative storage efforts. Seaman outlined the initiative of four Colorado academic libraries to open a shared high-density storage facility, a rare example of public-private collaborative collection management.¹⁴⁸ The collaboration also allowed nonparticipating

institutions direct access through a statewide union catalog. O'Connor and Smith reexamined the space used in Ohio regional depositories to assess the viability of making them more service-centered.¹⁴⁹

Articles by Wisneski, Gilliland, Connell, and Sanville addressed various aspects of the OHIOLink project.¹⁵⁰ They provided an introduction to OHIOLink's consortial environment for new bibliographers, data analysis to determine use patterns in libraries where patron-initiated borrowing is allowed, a policy reevaluation at John Carroll University for faculty-initiated selection, and a cost-per-use analysis of consortially licensed electronic resources.

Kohl and Sanville proposed that the academic library community focus on improved cost effectiveness through cooperative efforts rather than become preoccupied with the short-term problems of budget reductions.¹⁵¹ Torbert concluded that libraries that purchase a publisher's entire journal lists (Big Deals) place restrictions on their budgets that ultimately prove detrimental to their collections.¹⁵² She noted, however, that publishers are becoming more flexible in allowing libraries to collaborate on journal title lists. Anderson looked at apportioning costs within consortia and proposed options—equal division by institution, proportional division by institutional full-time equivalents (FTE), and combination of the two models.¹⁵³

Collection Assessment and Evaluation

The rise of electronic resources also made its mark in the area of assessment. New tools brought about a fresh look at assessment and the context for old tools changed, requiring a new look at them and their role in the overall assessment picture. A few authors offered overviews of different methods to provide context for techniques and models. Agee discussed several assessment strategies and the type of data provided by each.¹⁵⁴ Osburn called for a theoretical reconsideration of assessment and concluded that evaluation of collection management will ultimately result in evaluation of the collection.¹⁵⁵ White and Kamal provided a logical extension of the ARL e-metrics efforts of previous years.¹⁵⁶ Borin and Yi discussed collection-based and user-based models, providing an overview of assessment literature based in practice and encompassing traditional and new resources.¹⁵⁷

Collection-Centered Assessment

Discussion regarding the Conspectus (a collection analysis tool developed by the Research Libraries Group (RLG) and its member libraries in the early 1980s) wound down, and subsequent methods were tried and scrutinized for their improvements over the problematic subjectivity many saw in the Conspectus approach. Skaggs used the Washington

Library Network Conspectus method to assess an integrated government documents collection.¹⁵⁸ Munroe and Ver Steeg interviewed thirteen experienced Conspectus users and outlined the uncertainty resulting from subjectivity within the Conspectus techniques.¹⁵⁹ Beals moved beyond the subjectivity of Conspectus to discuss experiences using the brief tests of collection strength method developed by Howard White.¹⁶⁰ Beals and Gilmour added a discussion of the WorldCat Collection Analysis tool to their brief tests experience, concluding that both methods may be used on a variety of sizes and types of collections and that both are limited by the need for precisely defined LC classification.¹⁶¹ White continued to develop ideas regarding methods and in 2008 described his coverage power tests, improving on brief tests.¹⁶²

Many librarians reported on their use of various tools for collection analysis and assessment. Metz and Gasser used Ulrich's Serials Analysis System to look at the Virtual Library of Virginia (VIVA) serials with the aim of identifying the last subscription titles, and they discovered much more about what VIVA did and did not have.¹⁶³ Nisonger defined core and presented a taxonomy for classifying core journal lists in hopes of helping librarians select the appropriate lists for their purposes.¹⁶⁴ Because of the lack of a defined set of core journals in German Studies, Rutledge and Partikian analyzed WorldCat holdings and determined a consensus journal list rather than core journal list.¹⁶⁵

As they moved from print to electronic formats, librarians used various assessment approaches to make decisions about eliminating print materials. University of Arizona Libraries' Bracke and Martin analyzed electronic content from ScienceDirect for completeness and quality in deciding to discard print and reallocate space.¹⁶⁶ Assessment for decision-making support in academic program reviews was undertaken at Oregon State University by Bobal, Mellinger, and Avery.¹⁶⁷ They questioned the worth of assessment when it does not help to increase library budget allocations for new programs.

User-Centered Assessment

Authors reported on work to determine what methods would produce satisfactory assessment tools for use and user needs. The call for standards continued as librarians looked at usage data produced by commercial and other sources and discussed the use of multiple techniques to assess collection value for users. Moen, Oguz, and McClure looked at Texas State Library and Archives Commission data to determine how disparate standards might be reconciled automatically for use assessment and what would be needed to develop significant standard statewide usage data.¹⁶⁸ Covi and Cragin discussed bundling of electronic resources, and factors that affect use or non-use and their implications

for collection management.¹⁶⁹ Sullivan advised librarians to look at expectations and user needs of the “chip” generation and the functionality provided in electronic formats to try to find the best match.¹⁷⁰ In looking at OhioLINK consortium chemistry journals and collaborating with chemistry faculty, Feather, Bracken, and Diaz sought to balance cost-effectiveness based on objective factors (such as price and usage data) with subjective factors (such as e-research value) to assess consortium collections.¹⁷¹ Samson, Derry, and Eggleston also developed a hybrid assessment method that included data covering cost, collection coverage, quantity of full text, and, as much as possible, usage comparison, for comparing electronic databases.¹⁷²

Only two articles discussed the LibQual assessment tool. Self looked at LibQUAL+ data from ARL libraries and noted that journals are the most important items in libraries for faculty.¹⁷³ Mentch, Strauss, and Zsulya discussed results of their use of focus groups to supplement their LibQual+ survey information through which they learned more about users and user satisfaction with library service quality.¹⁷⁴

The continuing change from print to electronic and the need to look at assessment methods was a frequent theme. Electronic journals received the most attention. Davis looked at the Eigenfactor as an emerging tool for calculating journal impact, and he also examined download logs to estimate the size of user population for a given journal.¹⁷⁵ Working with Price, Davis evaluated the emerging Counting Online Usage of Networked Electronic Resources (COUNTER) standard in a study that looked at data from thirty-two research institutions and six publishers, concluding that the standard appeared to be skewed by the journal interface.¹⁷⁶ In dealing with hybrid collections, practitioners struggled to discover ways to look at user behavior to inform their choices between formats and make other collection decisions. McDonald used statistical techniques to reach an understanding of both citation analysis for ranking journals and use counts in the era of electronic citation analysis and online journal use data.¹⁷⁷ Duy and Vaughan looked at print journal citation and use patterns and found that electronic journal use data may be an effective replacement for citation data as an indicator of journal use and that electronic use data correlates with local reshelving data, indicating that popular journals in print also were popular in electronic format at their institution.¹⁷⁸ Their findings led them to conclude that impact factor as determined by global metrics did not correlate with their local use data; thus impact factor may not be a good metric for local selection decisions.

Print books and e-books received less attention but still garnered interest. O'Neill discussed the quantitative measure of the audience level field in an OCLC record to assess the appropriateness of books for given collections.¹⁷⁹ Connaway and Snyder reported that the transaction log can be used as a valuable analysis tool for tracking e-book usage.¹⁸⁰

Citation analysis continued as a basic tool in collection assessment, with numerous articles written about the use of this tool in local studies. Two articles looked at citation analysis itself, questioning its use in assessment and shedding light on its value relative to other methods. Beile and Boote examined citations in doctoral dissertations at three institutions and determined that they are not a reliable measure to make collection building decisions.¹⁸¹ Coleman used the journal *JELIS* as her example and advised taking more facets, beyond citation impact factor, into account when assessing the value of specialized journals that reach small audiences of scholars.¹⁸² The institution-based studies examined more focused questions of local interest and provided documentation for lessons learned while using this tool.

Conclusion

From 2004 through 2008, the collection and management of digital resources dominated the peer-reviewed collection management and development literature regarding academic libraries. Philips and Williams noted that the literature in the review period 1997–2003 was primarily applied and it continued to be applied during 2004–2008 as practitioners reported changes in practices and policies for emerging collections.¹⁸³ Libraries responded to user needs and expectations and publisher output by making changes in the content and format of their local collections. The increasing demand for both electronic serial and monographic titles led to a dramatic increase in the amount spent on electronic resources as a percentage of the average library budget. While the literature reflected a general satisfaction with buying into Big Deals, some showed philosophical discomfort with vendor pricing structures. Many authors during this period wondered about the sustainability of OA. Will libraries assume a significant leadership role in the promotion of OA to further its sustainability?

The reevaluation and redefinition of collection management responsibilities became important themes. As the library community settled into the digital age, academic collections professionals were adapting policy as well as library organizational structures and management practices to keep collections and services relevant. Librarians continued to be challenged to define their core collections in an environment of globally accessible resources. Collaborative collections efforts offered new possibilities for innovation. Consortium building for purchasing and coordinated collection development continued to be important, but the literature showed more limited applications of collaboration than the collective that Atkinson proposed as his fourth key challenge.¹⁸⁴ Continuous assessment and evaluation of collections and the assessment of user preferences and needs using new tools also were important.

Librarians remained optimistic in light of the considerable challenges libraries faced in managing their resources to accommodate the rapidly growing and ever-shifting digital landscape. While looking back on the established philosophy of traditional collections activities, librarians moved decisively into the new and at times uncertain digital age and emerged with a positive vision of the future of library collections.

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