

Selection for Digital Conversion in Academic Libraries

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Electronic technology has begun to change the way scholars conduct their research. Before this new approach to scholarly inquiry becomes a viable and productive method in institutions of higher learning, the existing resources that a scholar normally would use in the library must be converted to a digital format in order to be accessible electronically. How do academic libraries set about creating a body of knowledge and begin to convert traditional print collections to a digital format in order to satisfy what today's researchers want? This article examines previous methods of selection and collection building, and applies those supporting principles to today's collection-building efforts for digital collections.



Selection decisions in academic libraries have never been clear-cut or straightforward. One has only to examine the literature to confirm that. However, a rudimentary principle that library professionals historically have agreed on is this: Like other processes in the library, selection should be aligned closely with the mission and goals of the parent institution. This simple, but important, tenet of academic librarianship is supremely meaningful in light of the resources that digital conversion activities consume, such as staff and funding. More strongly stated, it is incumbent upon the academic library community to develop a carefully reasoned approach to the selection of library materials for digital conversion that is fiscally responsible to both itself and its parent institution. To select and select well is critical to the success of the digital library. As Clifford Lynch has pointed out:

Libraries face both opportunity and potentially unmanageable budgetary demands from all quarters. The questions now facing libraries arise less from the availability of technology than out of the development of strategies for collection development and management and supporting resource allocation choices.¹

Despite the urgency to develop a coherent and sustainable approach to the selection process, the academic library community has yet to produce one. Perhaps the biggest reason for this hesitation has been the newness of digital technology itself. Much experimentation has taken place in the formative years of this technology in libraries, and more research and development is needed to explore the capabilities of digital technology, specifically, for what it has to offer

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the research community. Those efforts should be deliberate, well planned, and designed for the greater good of this community on a global scale. At the same time, however, it now is clear that a critical mass of a newly reformatted body of knowledge must be created to assist in this new electronic approach to research.

This article examines the process involved in developing an implementable rationale for the selection of library materials for digital conversion by reviewing analogous conditions in collection-building history. In the hope that the past may inform the future (if not in practice, at least in principle), what follows is a reexamination of past collection building, including the advent of the printing press and the ensuing drive to develop print collections; an overview of the selection process as it evolved in modern research libraries; and the selection criteria developed to cope with brittle books and preservation microfilming. Then, turning to contemporary efforts, a small sampling of project managers of recent digital projects provides information about some of the contemporary selection methods used in today's projects.

Developing Print Collections

The act of selecting and acquiring books to build and develop printed book collections has evolved over the centuries since the time of the manuscript book. During the secular period of the manuscript book and the early rise of the university in the twelfth century in Europe, the demand for books began to move beyond the monasteries. The drive to produce manuscript books was fueled by the need for books in education and research. Universities employed professional craftsmen to copy texts by hand "expeditiously and cheaply" for their courses.² Following Johannes Gutenberg's invention of the printing press and William Caxton's perfection of movable type and the inking process, both in the mid-fifteenth century, the race was on to duplicate and convert scholarly works from manuscript books to printed books.

In the words of Lucien Febvre, the book

rendered vital service to research by immediately transmitting results from one researcher to another... . By doing so, it gave their ideas a new lease on life and endowed them with unparalleled strength and vigour [sic]. They came to have a new kind of coherence and, by the same token, an incomparable power for both transformation and propagation. Fresh concepts crossed whole regions of the globe in the very shortest time, wherever language did not deny them access.³

This produced a remarkable transition in both library history and the book trade, and in many ways is comparable to the transformation facing libraries today. Febvre goes on to say that the magnitude of reproducing texts in print was quite staggering at the time: "[S]oon the potential of the new process became obvious, as did its rôle as a force for change as it began to make texts accessible on such a scale as to give them an impact which the manuscript book had never achieved."⁴

With respect to the selection of texts for printing, Febvre reminds us that the process of setting up a printing shop—acquiring equipment and supplies—required a significant investment. Therefore,

15th-century publishers only financed the kind of book they felt sure would sell enough copies to show a profit in a reasonable time. We should not therefore be surprised to find that the immediate effect of printing was merely to further increase the circulation of those works which had already enjoyed success in manuscript, and often to consign other less popular texts to oblivion. By multiplying books by the hundred and then thousand,

the press achieved both an increased volume and at the same time more rigorous selection.⁵

Most of the earliest books were religious because clerics generated most of the demand. But as the demand for books broadened, "selection soon became imperative as the decision had to be made as to which of the many thousands of medieval manuscripts were worth printing."⁶ Febvre aptly mines the depths of this issue, but for the purposes of this article, what his research distills very clearly is that the selection of manuscripts for printing was based on the profitable demands of an elite society for education and knowledge. Later, this would expand to include a broader audience with a thirst for learning.

What is most strikingly similar in this limited comparison between the early days of printing and the current status of electronic technology is the need to develop a body of knowledge. Today, this endeavor supports an effort to realize the potential of electronic technology similar to what Febvre recognized when he said the printing effort sought "to make texts accessible on such a scale as to give them an impact the manuscript book had never achieved." We now seek to realize the potential of electronic technology "to make texts accessible on such a scale as to give them an impact" that, indeed, surpasses what the printed book has achieved. If today's libraries are to take any direction from the past, they would not go wrong to follow the example of their medieval counterparts and focus resources and attention on the education of the communities they serve. For academic libraries, this is the research community, with faculty and students of the university being the primary beneficiaries. Strictly followed, this entails allocating internal funds for the digital conversion of collections exclusively to support the needs of the immediate user community. It is this mandate of the academic library that precludes a focus on K-12 educa-

tion, leaving those needs for digital materials to places such as the Library of Congress, the New York Public Library, and other public libraries.⁷

The exclusive application of resources for specific mission-related uses and needs may be construed as something too obvious to point out. However, much of what has been scanned by libraries and archives to date are low-use special collection materials, simply because they are "signature" collections. Although these efforts produce educational information sites, rarely do they actually produce a digital collection deep enough to satisfy the broader research needs of the local constituency. In effect, many of these sites are more suitable to the needs of the K-12 audience, rather than higher education. Given the costs of conversion, selection decisions must remain organic to the mission of the parent institution, or the library stands to lose its credibility within the university and its scholarly structure.

Overview of Past Collection-Building Practices

Though in no way new, the question of how libraries should proceed in building a body of knowledge is quite daunting in the electronic environment. In a very broad assessment of what digital technology portends, Carla Hesse saw the current environment as an opportunity to achieve the "most cherished ideal of modern democratic politics and the libraries they have created: universal access to all forms of human knowledge."⁸ For academic libraries and their selecting policies, the idea of collecting "all forms of human knowledge" is an old one. In the nineteenth century, early book selection in academic libraries began to adhere to the ideal of comprehensiveness and completeness.⁹ However, in the twentieth century, the idea of completeness was

given up as its practical impossibility came to be realized. The cause was the enormous proliferation of

knowledge and the resulting vast increase in publication.¹⁰

Now, with the technology and the demand in place to convert library materials into digital form, we find ourselves in a situation comparable to our earlier counterparts. As in the traditional print environment, the stultifying problem of overabundance amplifies the need for

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selectivity and increases the need for professionals to do the selecting: “the more there is to select out there, the more subject expertise is needed to select quality and specifically in order to satisfy needs and demand.”¹¹

In the early days of collection building in American academic libraries, most collections were built by faculty.¹² J. Periam Danton emphasized the vagaries that resulted in this practice:

The majority of titles in the book stock of the typical American university library are there as the result of scores of thousands of individual, uncoordinated, usually isolated decisions, independently made by hundreds of faculty.¹³

Danton was not the earliest or only critic of the system that permitted faculty the exclusive responsibility for selecting library materials. Corroborating this view, Raven Fonfa cited the period 1876–1939 as a period of widely shared discontent and criticism among librarians and others, noting that data collected for the Waples and Lasswell study, published in 1936 and entitled *National Libraries and Foreign Scholarship*, stated that collections developed by faculty in academic institutions were both unbal-

anced and lacking, whereas collections developed by librarians in public institutions “showed significantly more balanced holdings.”¹⁴ Danton also cited the Waples and Lasswell study, which found that Harvard and the universities of Chicago, California, and Michigan had significantly lower percentages of 500 English, French, and German works in the areas of social sciences, “judged by specialists in those fields to be of primary scholarly importance,” whereas the New York Public Library, “where book selection is ... entirely the responsibility of a corps of subject specialist librarians, held 92 percent.”¹⁵ In the years after 1939, as librarianship became more professional, librarians began to win support for collection development in academic libraries and the theories and practices that inform materials selection evolved simultaneously.

Undoubtedly, at its most basic level, the “selection of materials has almost always been based on clientele.”¹⁶ In the academic environment, the university, as the parent institution, dictates the development of collections for the research and teaching needs of the faculty and students. Ross Atkinson, clarifies this condition by saying,

[w]hile the individual library can make the micro-decisions concerning the particular items to which access should be provided, the broader policy decisions that define the parameters within which the library’s collection building effort must operate, are largely based upon stipulations made in advance by the supported (and in support of) [the] user community.¹⁷

As stated above, the huge expense of digital conversion of library and archive materials requires a fiscal responsibility to the academic library’s parent institution. In fact, this responsibility to the university is heightened further by potential misjudgments and technical vagaries that could grossly waste precious re-

sources and would, in the end, represent a glaring disservice to the library's clientele. With this in mind, there is an amplified need for an implementable plan that adheres to the basic tenet that collection development—what John Rutledge and Luke Swindler defined as the “macro-decision”—should coincide with the directives of the parent institution.¹⁸ In addition, libraries' collecting decisions should be consistent and cognizant of holistic responsibilities. Hendrik Edelman broadly defined collection development as the first level in the development of a policy or plan that considers

the goals of the library as far as the collections are concerned, taking them into account and correlating them with the environmental aspects such as audience demand, need, and expectation, the information world, fiscal plans, and the history of the collections.”¹⁹

In the digital environment, conformity to this established principle is certainly possible and looms as a fiscal imperative. However, David Fielding and Carl Lagoze raised a good point in the context of digital libraries when they asked, “is it really necessary to select materials in specific groupings or ‘collections’ to begin with, or just proceed on [a] use basis, or curriculum needs basis?”²⁰ In other words, does the “distributed digital library” or “virtual library” obliterate the need to follow traditional collection development principles as they have been applied broadly to the macro-collection-building function? Indeed, digital technology affirms the capability to forego the need for one institution to build and develop isolated “collections,” especially when such an endeavor can otherwise be accomplished on a multi-institutional, collaborative basis with individual institutions contributing on what Rutledge and Swindler call a micro-decision level. As long as an institution's selection efforts coincide

with the goals of the parent institution, cooperatively built virtual collections can satisfy the needs of the immediate user community as well as the pressing need to be fiscally responsible.

Proceeding from the idea that traditional (macro-level) collection building could be jettisoned, the need to formulate a strategy to build digital collections still persists. It is possible that the clue to a coherent selection strategy is embedded elsewhere in traditional collection development practices. Moving on to Edelman's second level of collecting practice, he defined the title-by-title selection process as implementation of the library's overall collection development policy.²¹ Rutledge and Swindler called this the micro-decision and set out the six “most relevant” factors that a selector must consider in title-by-title selection: “(1) subject, (2) intellectual content, (3) potential use, (4) relation to collection, (5) bibliographic considerations, and (6) language.”²² These categories could be adopted easily in a micro-level decision-making process for electronic collection development; however, they are too broad and too inclusive to be selective enough. Even more than in the print world, the caution to “remember that selection implies selectivity” is profoundly relevant.²³ Here, at this micro-level of collection building for the digital library, is where the real crux of the problem exists. Following the established traditions of the omnivorous library (“which sees nothing as out of scope”) is no longer appropriate, nor is the “just-in-case” model of selecting.²⁴ Both are far too inclusive to be compatible with the implied fiscal responsibility of digital technology.²⁵

Selection Methodologies for Preservation

A third avenue to explore as a path toward a digital conversion strategy lies in the methodologies that evolved to support the decision making for the preservation of brittle books using microfilm technology. This, too, is a reformatting

decision and, perhaps, explains why there is a persistent practice in the library community of linking preservation and digitization particularly with regard to selection activities. The choices involved in microfilming brittle books are recognizably similar to the choices libraries must make in deciding what to reformat digitally, but that intersection is brief and extends only backward, not forward. Whether driven by the demands of researchers or the demands posed by poor condition, the similarity between microfilm and digital technologies lies only in the initial desire to duplicate what already exists. Beyond that, the two technologies diverge significantly in purpose. Nevertheless, a brief tour of the selection decisions established for preservation microfilming is a useful exercise and possibly may distill a vision of purpose in developing digital collections, even if only in the obverse. What follows is a brief description of the decision processes applied to microfilming.

Tangentially, it is too tempting to resist the observation that digital technology may serve to rescue much of what exists on microfilm—a format that researchers tend to avoid.

An early and popular selection methodology for brittle books was developed in the 1980s and adopted by the Research Libraries Group (RLG) for use in cooperative preservation microfilming projects. The “clean-sweep” approach utilized date parameters applied to subject areas of a collection. The date parameters attempted to approximate those years in which paper manufacture produced highly acidic paper, 1870 and 1910.²⁶ The distinctive feature of this approach was its comprehensiveness: It sought to include *all* materials within a subject area between the chosen date parameters on the grounds that what had been collected in the past would have potential use in the future. Initially, this method had great attraction primarily because “little time is expended on deci-

sion making... . And it is argued that there might someday be a use even for materials whose importance is not evident at present.”²⁷ Thus, the merit of this approach lies squarely in its lack of selectivity. The efficiency of such a prospective approach works well when applied to microfilm technology, due to microfilm’s low storage costs. But the inherent weakness of the clean-sweep approach “is that materials which may never be needed by scholars take up time and money and thus displace more important materials that aren’t in the chosen group.”²⁸ High labor costs associated with pre- and postmicrofilming activities hardly justified the benefits of its built-in decision-making efficiencies, and the clean-sweep method of selection fell out of favor. In the electronic world, the vagaries of this approach are equally intolerable given the high cost of digital conversion. Therefore, this paradigm is clearly one to avoid.

In an effort to improve upon the clean-sweep approach, the RLG later fostered the concept of great collections based on the RLG Conspectus rating of a collection as a measure of its worth for preservation.²⁹ This selection method also was subject driven and focused attention on those comprehensive research collections, built over time, that were in danger of disappearing due to embrittlement. The great collections approach retained many of the characteristics endemic to the clean-sweep approach but also introduced the element of physical condition. Date parameters were still observed, but if an item was not brittle, the great collections approach excluded it from microfilming. Comprehensive in its approach, this method also was not very selective. Again, microfilm technology lends itself well to the massive attempt to reformat brittle books, but evaluated from the perspective of digital technology, the problem of what to do with low-use materials resurfaces. In the digital environment, it makes little sense to enhance access to low-use materials because it is difficult to justify their costly conversion.

A more practical approach to selection for preservation was provided by Ross Atkinson, in "Selection for Preservation: A Materialistic Approach," in which he discussed three classes of library materials and their appropriate corresponding preservation treatment.³⁰ Class 1 includes special collection and unique materials, such as rare book and manuscripts; class 2 "consists of high-use items that are currently in demonstrable demand for curriculum and research purposes"; and class 3 are low-use, or less frequently used, research materials.³¹ The preservation treatment that Atkinson advises for these groupings of materials are conservation treatment for class 1; replacement and/or preservation photocopying for class 2; and microfilm reformatting for class 3. This is an acceptable formula, generally, for organizing preservation treatments, and it works well for low-use materials when microfilm is your reformatting tool of choice. Unfortunately, like the previous two methods described above, this approach is not appropriate either. A strict translation of Atkinson's paradigm would substitute digital conversion as the reformatting agent for class 3 materials instead of microfilm—a fruitless and costly undertaking for low-use materials.

Before leaving Atkinson's model, it cannot be overlooked that many, if not most, digital projects to date have focused largely on Atkinson's class 1 special collections and unique materials. These efforts have attracted funding and attention and have provided fertile ground for testing this new technology. Whether they do now or ever will suit the research objectives of academic libraries is debatable. Research requires in-depth collection building. Converting that depth to electronic technology in a specific subject area for scholarly use would be extremely expensive and inefficient because it would lead to the conversion of materials that are used by only a small segment of researchers. In addition, build-

ing electronic collections on this basis requires the bibliographer, as in print collections, to speculate and project which materials will be needed by the researcher, an activity that has been deemed both subjective and difficult, often leading to overbuying.

Still pursuing the analogy of selection methodologies for preservation microfilming, additional strategies include the condition-and-use model and the editorial model. Selection based on condition and use for preservation microfilming was an approach first suggested by Christenger Tomer in 1979 (and again in 1985) and then later by Barclay W. Ogden in 1987.³² Proponents of this method argue that scarce resources should be allocated for preservation based on poor condition and the amount of use an item receives, the theory being that the combination of use and poor condition places an item in a higher-risk category than those items that remain untouched on the library shelf. Tomer logically explained that

the documents at most serious risk are those whose interest to readers exceeds in longevity their physical capacity to support the consequent handling.³³

As part of this process, identification of items in need of preservation occurs at the point of use. Condition plays the largest role in the decision and, thereby, makes access to materials currently in demand its initial priority. Of course, bibliographic review of these materials is essential because everything used in a library is not necessarily worth preserving. The condition-and-use selection decision proceeds on a title-by-title basis and assumes that the heart of the preservation mission should first consider the end user for whom the material is saved.

The condition-and-use selection method brings us closer to a translatable decision-making paradigm for digital conversion primarily because of its fo-

cus on use; however, the element of condition is misplaced. In the digital environment, it is important to distinguish between the factors that motivate a preservation decision and those that seek to enhance access. The two decisions may “overlap where materials are both endangered and in demand,” but in the context of collection building (i.e., creating a body of knowledge in a new medium for research purposes), selection decisions for digital conversion need not consider physical condition of the original.³⁴ Digital technology is ideal when used to enhance access but assists in preservation only when creating surrogate copies of materials that are likely to benefit by reduced handling. It cannot be used to actually preserve an item.³⁵

The editorial model of selecting materials for retrospective collection development has been employed commonly by commercial microfilmmers as a method of distributing collected works and genres. It was not widely used as a method for selecting materials for preservation microfilming. Only a few preservation-microfilming projects explored the use of editorial boards of scholars and national bibliographies to identify important titles and core materials. Most notable among them are the American Theological Society Serials Project and the American Philological Association’s effort to preserve classics materials.³⁶ It is not entirely clear why the editorial method was not used more widely to make preservation decisions. Perhaps the general distaste among scholars for microfilm is responsible, compounded by a fractious relationship between faculty and the library in the wake of large microfilming grants. Digital technology seems to be bridging that chasm as libraries look to their respective faculties to assist them in selection decisions for digital conversion. Currently, several conversion projects are using this method to develop digital collections in specific subject areas: the Perseus Project and the National Agriculture Library’s CORE Project.³⁷

For the most part, it seems that selection models for preservation microfilming are inapplicable to digital technology. The clean-sweep approach is wholly unsuited to guide the selection decision for digital conversion because it is far too inclusive and would involve the reformatting of items that may never be needed or used. Likewise, the great collections approach is equally inappropriate for the same reason. Although Tomer’s condition-and-use approach is more appealing, strictly applied, it is only appropriate in digital conversions where protection of the original is an issue. It appears that even though the choices involved in digital conversion are reminiscent of the choices required for preservation microfilming, they are not translatable. True, both approaches involve a reformatting decision, but their trajectories diverge from there because their intents conflict in purpose. At the most basic level, one thwarts or decreases access whereas the other enhances or increases it.

Tangentially, it is too tempting to resist the observation that digital technology may serve to rescue much of what exists on microfilm—a format that researchers tend to avoid. Just as Febvre recognized that printing in the fifteenth century “resurrected long-forgotten writings in which the fifteenth century seem[ed] to have new interest,” it is possible that when libraries begin to offer on-demand digital conversion of microfilmed materials, much of the scholarship “hidden” on microfilm will be “resurrected” in the same way.³⁸ Conversely, Febvre’s notion that printing was responsible for “consigning ... less popular books to oblivion” has a rather unattractive, yet valid, modern-day correlation to the reformatting of brittle books to microfilm.

Conclusion

Salient points taken from the collection-building and selection decision-making models offered above settle most harmoniously around the overriding directive of research libraries to align their collec-

tion development practices with their parent institutions and the utility of doing so. The idea of use, especially high use, is fundamental to collection development and is the common thread in all selection decisions. Coupled with the extraordinary access capabilities permitted by digital technology, use holds significant promise as a guiding factor in selecting materials for digital conversion. It represents an opportunity to extend more resources and offer highly improved services to the academic library's local user community—undergraduates, graduates, faculty, and scholars alike. Whether digitizing core collections, following a curriculum-based approach, or creating partnerships with faculty, collection-building efforts based on use are more likely to garner the support of the parent institution.

A use-based directive never succeeded in preservation reformatting, but it has been widely accepted and, indeed, very successful in replacement and physical treatment decisions in collections conservation activities—where funding tends to be most scarce and decision making most practical. Here, Atkinson's proposal for class 2 materials is quite relevant. In its application to digital conversion, it offers three advantages: first, it could dovetail nicely with the work of faculty and students and thus support the teaching process and curriculum. Second, high-use items suffer from the wear and tear of heavy handling, which digital reformatting would alleviate, or at least reduce. And third, because high-use materials are the most likely to be duplicated across academic collections, it might foster opportunities for interinstitutional collaboration. In fact, because use is often similar across institutions, especially at the core collection and curriculum levels, the latter could lead to the development of a digitized core collection and, in so doing, force the issue of cooperation to exploit the efficiencies and economies of sharing, carefully tailored to avoid duplicate efforts and expenditures.

In Atkinson's parsing of library materials into three classes, he says,

the objective of class 2 [high-use] preservation ... is to preserve materials currently being used, or very likely to be used as projected on the basis of what is currently being used. It is in class 2 preservation, moreover, that bibliographers have the most important role to play in the preservation process, for the knowledge amassed by bibliographers as the current needs and activities of the users and the current trends in the subject are precisely the criteria that must be applied to class 2 preservation selection decisions. Class 2 preservation is, in fact, really only an extension of or supplement to the core building and maintenance done by most selectors in most libraries.³⁹

This statement is just as pertinent when read in the context of today's environment and applied to selection efforts for digital conversion, using the same argument in favor of converting materials in support of an institution's core curriculum. Demonstrable use motivated current efforts such as the National Science Foundation's Digital Library Initiative Phase II (1998–2002), which seeks to "explore the linking of digital library research efforts and testbeds for undergraduate education" in science, mathematics, engineering, and technology.⁴⁰ Similarly, one of the findings of the studies conducted as part of the Columbia On-line Book Project was that faculty had a high regard for the usefulness of offering students Internet access to reading assignments.⁴¹

Except for a few examples such as these, however, it seems that a use-based approach still is no more popular as a selection criterion for digital conversion than it was a selection criterion for preservation microfilming.⁴² Having reviewed an array of possible selection criteria and approaches deployed in the

past to develop book collections and preserve brittle books in academic libraries vis-à-vis digital conversion, it is surprising to discover what is actually driving the endeavor to create digital collections in academic libraries today. An informal survey of twenty-five current digital projects in academic libraries showed that the most popular approach to selecting collections for digital conversion is a subject-and-date-parameter approach applied, by and large, to special collections, with little regard for use, faculty recommendations, scholarly input, editorial boards, or curriculum.⁴³ When queried about their goals, project managers most often responded that improved and/or enhanced access was the primary goal of converting collections to an electronically accessible format. It is hard to imagine that a broad-based local

user community benefits by the improved access to special collections. It is only a matter of time until the question emerges as to how long the parent institution will be satisfied with supporting the costly conversion of their library's materials to improve access for narrowly defined audiences that may not even be their primary local constituents. Harking back once more to the mid-fifteenth century, the building of printed book collections in libraries was driven initially by the education and research needs of the academic community. Simplistic as it sounds, half a millennium later, the education and research needs of the academy are still the academic library's primary responsibility; thus, it must be prepared to account for a digital conversion selection methodology that supports and complements that relationship.

Notes

1. Clifford Lynch, "The Role of Digitization in Building Electronic Collections: Economic and Programmatic Choices," in *Selecting Library and Archive Collections for Digital Reformatting*, proceedings from an RLG Symposium held Nov. 5–6, 1995, Washington, D.C. (Mountain View, Calif.: Research Libraries Group, 1996), 2.

2. Lucien Febvre and Henri-Jean Martin, *The Coming of the Book*, trans. David Gerard, eds. Geoffrey Nowell-Smith and David Wooton (New York: Verso, 1997), 19; first published as *L'Apparition du livre* (Paris: Éditions Albin Michel, 1958).

3. *Ibid.*, 11.

4. *Ibid.*, 248–49. Febvre says, "Some 30,000–35,000 different editions printed between 1450 and 1500 have survived, representing 10,000–15,000 different texts, and if we were to take into account those which have not survived the figures would perhaps be much larger. Assuming an average print run to be no greater than 500, then about 20 million books were printed before 1500, an impressive total even by 20th-century standards." However, he further qualifies this estimate in a footnote saying, "Of course we mean only to indicate some idea of scale. According to Vladimir Loublinsky, production would be somewhere between 12 and 20 million copies."

5. *Ibid.*, 249.

6. *Ibid.*, 260.

7. An exception to this would be when grant and/or donor funds are available to the academic institution to scan and make available on the Internet educational materials that would benefit an outside constituency or, perhaps, in those cases where the institution of higher education is publicly funded and mandated to provide K–12 access to their collections. The idea expressed here—that the academic library's commitment to higher education (to the exclusion of K–12) as part of their mission—is most appropriate to research libraries and is based on a historic and economic perspective that acknowledges the traditional purposes of the academic library. This, however, is an emphasis that could undergo radical changes in the future. See the Library of Congress's "American Memory Collections" for an excellent example of selection for a broader constituency that includes K–12 and others.

8. Carla Hesse, "Humanities Scholarship in the Digital Age," in *What's Happened to the Humanities*, ed. Alvin Kernan (Princeton, N.J.: Princeton Univ. Pr., 1997), 110–11.

9. J. Periam Danton, *Book Selection and Collections: A Comparison of German and American University Libraries* (New York: Columbia Univ. Pr., 1963), 34.

10. *Ibid.*

11. William S. Monroe, "The Role of Selection in Collection Development: Past, Present and Future," in *Collection Management for the 21st Century* (Westport, Conn.: Greenwood Pr., 1997), 114.

12. Danton, 71. See also Raven Fonfa's, "From Faculty to Librarian Materials Selection: An Element in the Professionalization of Librarianship," in *Leadership and Academic Librarians*, eds. Terrence F. Mech and Gerard B. McCabe (Westport, Conn.: Greenwood Pr., 1998), 22-36.

13. Danton, *Book Selection and Collections*, 74.

14. Fonfa, "From Faculty to Library Materials Selection," 29.

15. Danton, *Book Selection and Collections*, 75.

16. Robert N. Broadus, "The History of Collection Development," in *Collection Management: A New Treatise*, eds. Charles B. Osburn and Ross Atkinson (Greenwich, Conn.: Jai Pr., 1991), 9.

17. Ross Atkinson, "The Conditions of Collection Development," in *Collection Management: A New Treatise*, eds. Charles B. Osburn and Ross Atkinson (Greenwich, Conn.: Jai Pr., 1991), 36.

18. John Rutledge and Luke Swindler, "The Selection Decision: Defining Criteria and Establishing Priorities," *College & Research Libraries* 48, no. 2 (Mar. 1987): 125, 128.

19. Hendrik Edelman, "Selection Methodology in Academic Libraries," *Library Resources & Technical Services* 23, no. 37 (winter 1979): 34.

20. David Fielding and Carl Lagoze, "Defining Collections in Distributed Digital Libraries," in *D-Lib Magazine* (Nov. 1998). Available online at: www.dlib.org/dlib/november98/lagoze/11lagoze.html.

21. Edelman, "Selection Methodology in Academic Libraries," 34.

22. Rutledge and Swindler, "The Selection Decision," 128.

23. Monroe, "The Role of Selection in Collection Development," 107.

24. *Ibid.*, 106. See also Broadus, "The History of Collection Development," 3-28, for a deeper treatment on the subject of size of collections and for an excellent bibliography on the history of collection development.

25. Interestingly, John Price-Wilkins takes the opposing view and argues in favor of just-in-case collections, and has applied the just-in-time selection model to the decision to create and store derivatives (i.e., images derived from larger TIFF images) in "Just-in-time Conversion, Just-in-case Collections," 5 Aug. 1999. Available online at: <http://www.dlib.org/dlib/may97/michigan/05pricewilkin.html>.

26. For an excellent overview of selection methods for preservation, see Margaret S. Child, "Selection for Preservation," in *Advances in Preservation and Access*, vol. 1, ed. Barbara Buckner Higginbotham (Westport, Conn.: Meckler, 1992).

27. Roger S. Bagnall and Carolyn L. Harris, "Involving Scholars in Preservation Decisions: The Case of the Classicists," *Journal of Academic Librarianship* 13, no. 3 (July 1987): 141.

28. *Ibid.*, 141.

29. Child, "Selection for Preservation," 149-151.

30. Ross Atkinson, "Selection for Preservation: A Materialistic Approach," *Library Resources & Technical Services* 30 (Oct./Dec. 1986): 344-48.

31. *Ibid.*, 346.

32. See Christinger Tomer, "Identification, Evaluation, and Selection of Books for Preservation," *Collection Management* 3, no. 1 (spring 1979) and "Selecting Library Materials for Preservation," *Library and Archives Security* 7, no. 1 (spring 1985). See also Barclay W. Ogden, "Preservation Selection and Treatment Options," in *Preservation: A Research Library Priority: Minutes of the 111th Meeting of the Association of Research Libraries* (Washington, D.C.: ARL, 1987), 38-42. Margaret Child's summary of the condition and use methodology is excellent in "Selection for Preservation," 153-55.

33. Tomer, "Selecting Library Materials for Preservation," 2.

34. Janet Gertz, "Selection Guidelines for Preservation," in *Guidelines for Digital Imaging: Papers Given at the Joint National Preservation Office and Research Libraries Group Conference in Warwick 28th-30th Sept. 1998*. Available online at: <http://www.rlg.org/preserv/joint/gertz.html>. See also her more recent article, "Selection for Preservation in the Digital Age: An Overview," *Library Resources and Technical Services* 44, no. 2 (Apr. 2000): 97-104.

35. Paula De Stefano, "Digitization for Preservation and Access," in *Preservation: Issues and Planning* (Chicago: ALA, 2000): 307-22. See also Stephen Chapman, Paul Conway, and Anne Kenney, "Digital Imaging and Preservation Microfilm: The Future of the Hybrid Approach for the Preservation of Brittle Books." Available online at: <http://www.clir.org/cpa/archives/hybridintro.html#full>.

36. The American Theological Society's serials microfilming project lasted more than

twenty years in which "selection seems to have been mainly by consensus among the theological librarians who constituted the Board," see Child, "Selection for Preservation," 148. For the American Philological Association's microfiche project, see Bagnall and Harris, "Involving Scholars in Preservation Decisions: The Case of the Classicists," 140-46, and "Who Will Save the Books? The Case of the Classicists," *New Library Scene* 6 (Apr. 1987): 17.

37. See Mary Summerfield, "Online Books: What Roles Will They Fill for Users of the Academic Library?" 23 Apr. 1999. Available online at: <http://www.columbia.edu/cu/libraries/digital/texts/paper>. See also the "Perseus Project: An Evolving Digital Library," ed. Gregory Crane, Tufts University. Available online at <http://www.perseus.tufts.edu>, July 16, 1999; Entlich, R. et al, "Making a Digital Library: The Contents of the CORE Project," *ACM Transactions on Information Systems* 15, no. 2 (Apr. 1997): 103-23.

38. Fevre and Martin, *The Coming of the Book*, 260.

39. Atkinson, "Selection for Preservation," 346.

40. "Digital Libraries Initiative—Phase 2," sponsored by the National Science Foundation, Defense Advanced Research Projects Agency, National Library of Medicine, Library of Congress, National Aeronautics & Space Administration, National Endowment for the Humanities, in partnership with the National Archives and Records Administration and the Smithsonian Institution. Final draft version: Feb. 18, 1998; announcement number NSF 98-63 (NEW).

41. Summerfield, "Online Books."

42. Paula De Stefano, "Use-based Selection for Preservation Microfilming," *College & Research Libraries* 56 (Sept. 1995): 409-18.

43. This author queried twenty-five project managers at academic libraries through an informal e-mail survey. Many thanks to those individuals who responded to my questionnaire. Sources used to identify digital projects were: the National Endowment of the Humanities "Top Humanities Web sites" (<http://edsitement.neh.gov,6/24/99>); IFLA's IFLANET Web site document, "Digital Libraries: Resources and Projects" (<http://www.ifla.org/II/diglib.htm,7/16/99>); Rutgers's "Digital Library Resource Page," 7/16/99; and the University of California, at Berkeley's, SunSITE Hosted Projects (<http://sunsite.berkeley.edu/R+D,7/3/99>).