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# Collection Development in the Humanities and Social Sciences in a Transitional Age: Deaccession of Print Items

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# **Collection Development in the Humanities and Social Sciences in a Transitional Age:**

## **Deaccession of Print Items**

David Woolwine

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*A literature review of user preferences, research habits and needs, and citation studies are used to argue that de-accession of print titles in the humanities and social sciences in academic libraries should occur in a conservative fashion as libraries transition to greater digital holdings. The issue of retention of translations is given special emphasis. The centrality of engaged research for undergraduate education makes the retention, at present, of both a rich print and digital collection necessary as the distinction between a collection geared toward faculty research and one for undergraduate research becomes less important.*

## **INTRODUCTION**

Academic libraries are in a transitional period to what will, most likely, become almost entirely electronic collections. This period began with the introduction of electronic journal databases to replace print journal holdings and the replacement of print indexes with algorithms as the primary search mechanism for finding scholarly articles. This was followed by the introduction of licensed databases of electronic books (e.g. Ebrary, Ebsco) and the purchasing of individual electronic books for perpetual access. This period has also witnessed a de-emphasis of print resources in reference collections, achieved by licensing databases of reference materials (e.g. Credo) and/or the replacement, when feasible, of out-of-date print items with electronic

versions (e.g. *The New Catholic Encyclopedia*). Some use of free online content has also occurred in this earlier transitional period but the problem of how to make efficient and full-scale use of open-access material has not yet been solved. These dramatic changes have led to a popular (and sometimes administrative) belief that print collections in academic libraries should now be rapidly de-accessed as they can be largely replaced by free online content supplemented by licensed or purchased electronic content (Menchaca, 2014). The number of books not digitized is difficult to determine. However, to give some indication Darnton (2013) has argued that there are approximately 543 million books in research libraries in the United States but that as of 2008 Google only had plans to digitize 15 million. These recent dramatic changes have also led to the belief that interlibrary loan and consortia (or larger scale library networks) may allow for rapid de-accession of much of local academic print collections. This paper will argue that such beliefs are not based on a thorough consideration of the scholarly and teaching needs of even smaller academic institutions and that the process of further transition should be a careful one, best thought of as proceeding in a step-wise fashion. This should be a transition based on a consideration of local needs and on descriptions of how scholars in various disciplines use library materials. Other factors should be an understanding of the nature of student and faculty research and an acknowledgement of the limitations presently existing in electronic resources. Monitoring of resources and the external environment and a willingness to de-access judiciously is called for. The paper will take this position despite calls to use regional and other forms of consortia as a way of reducing local print holdings and despite changes in interlibrary loan. These last two issues will be addressed as especially important ones before taking up the main argument of the paper.

At the present time electronic book publishing, acquisition, access and reading exist in an unstable and somewhat confusing environment. This environment contains licensed books in databases and books purchased in perpetuity, multiple vendors with differing pricing models and different access provisions, the possibility of licensing whole collections of works in a specific discipline (e.g. University Press Scholarship Online: Philosophy from Oxford University Press), the presence of free content, reference books in electronic format (which are easily searchable for pieces of information) and non-reference books meant to be read from front to back which may not be as user-friendly. It also includes changing readability, downloading capabilities, and searchability for electronic books, as well as incompatible electronic book readers. It includes free content, some of it stable and organized with standard library cataloging metadata making access easy. A prime example of this is HathiTrust (Christenson, 2011). Other open-access material is unstable, or not easily searchable, or in some cases fraudulent or posted as free content but in violation of copyright laws.

Advocacy of quantifiable criteria for de-accession has a long history in the library science literature (Slote, 1997; Banks, 2002; Lugg, 2012; Snyder, 2014). The employment of use-data, along with availability of books in other libraries (which could then be accessed via interlibrary loan or consortia) and the supposedly sufficiently extensive digitization of older items have most recently constituted the core of such arguments. This paper will argue instead that the professional judgment of the librarian informed by knowledge of other factors is more important than such information in making de-accession decisions. Citation studies and studies on information seeking behavior, book format preferences and use, and studies on the research and study habits in various disciplines (including the use of translations) are presented to get a picture of the needs of faculty and students. A second line of argument will be developed based

on the centrality of the research experience for undergraduates in the humanities and social sciences. The benefits of participating in research, and developing the highest level of information seeking and research skills, will be discussed. It will be argued that local collections which support the development of such skills in the social sciences and humanities may, at present, need to be large, with uneven use patterns.

Methodologically, this work is not a meta-analysis of the literature in a specified and narrowly defined area of research as the factors weighed are drawn from studies in many fields. But it is not a subjective assessment either as it references publically shared works which mostly employ standard social science methodology. The method is probably best thought of as a traditional literature review from which conclusions can be drawn (Torgerson, 2003).

## INTERLIBRARY LOAN AND CONSORTIA

The claims that interlibrary loan and increased used of consortia or library networks can replace strong local print and electronic collections will be the first issue taken up before moving on to a treatment of the core of the paper which entails a discussion of research habits in the humanities and social sciences and the type of collections needed for student research. There is indication that interlibrary loan use has been rising in the United States since the 1990s (Williams & Woolwine, 2011). The presence of online databases which increase patrons' ability to discover journal articles and books, improved technology (e.g. url resolvers), the presence and use of free online scholarly search engines (e.g. Google Scholar), as well as decreases in collection development budgets have probably all contributed to the increase in interlibrary loan use. This is contrary to what might have been expected, when it was initially thought that

digitization would have reduced or even eliminated the need for interlibrary loan. However, a system in which large numbers of smaller-to-medium-size institutions radically reduce their loaning capacity by significantly de-accessing print collections may place a strain on the system forcing larger libraries to restrict loaning. On the other hand, the picture may change as electronic book purchases increase and licensing agreements for loaning such items change. At present, however, loaning of electronic books remains problematic. There are copyright issues, particularly those related to right of first sale (Müller, 2012; Wicht, 2011). Restrictive licensing agreements have made loaning entire electronic books difficult although chapters may or may not be loanable depending upon licenses (Randor & Shrauger, 2012). Librarians may not know what licenses allow or may not have set up a workflow which allows the loaning of electronic books or chapters (Woolwine & Williams, 2010; Frederiksen, Cummings & Carroll, 2011). But a greater transition to electronic texts may not present an insurmountable problem although it may lead to changes in how short term access occurs. For instance, one change which has already begun is that some vendors are making electronic books directly available to libraries for a short period of time and for a small fee (Levine-Clark, 2011; Wicht, 2011). Changes in the loaning of resources, especially short term loans at small costs, should be monitored and adopted as they become feasible but, at present, interlibrary loan remains a complement to a local collection which supports the teaching and research needs of the university.

Another promising emerging area is the loaning by consortia of electronic books in a manner that may circumvent some of the issues which exist with interlibrary loan. (Wicht, 2011; Lippincott, Brooks, Harvey & Ruggenberg, 2012; Horva, 2013; Shepherd & Langston, 2013). Consortiums' sharing of print books is a separate issue. Much of the scholarly work on large scale or regional consortia has been projective. The literature describes the present distribution of

print books but is essentially speculation about future developments (Lavoie, Malpas & Shipengrover, 2012 ; Dempsey et al., 2013; Dempsey, Malpas & Lavoie, 2014). The better articles lay out the next steps toward achieving regional or large scale consortia (Kieft & Payne, 2012). Libraries are far from achieving these goals, although such changes may allow for the reduction of local print holdings when achieved. Difficulties in reducing duplications, calculating savings and coordinating collection development have existed even in long-standing regional consortia such as OhioLink (Kairis, 2003). Consortia collection development, at present, does not necessarily lead to reduction in duplication, although improvements may be made (Levine-Clark, Jobe & Holladay, 2009). Some overlap in collections, however, may be necessary, to ensure ease of access. Clement (2012) and Stambaugh (2012) have laid out a vision of such arrangements and have also indicated the steps that may be needed to achieve it. Given that the necessary conditions have not yet been met discussion of de-accession of local print collections must proceed, for the time being, along other lines and with other criteria. This paper attempts to supply some of those.

## HUMANITIES

There have been numerous studies in last few decades on information seeking behavior, citation patterns, and library use by scholars in humanities. This paper will not cite or treat them all. Many of the older important ones are cited in later works discussed here.

Darnton (2008) has argued that the physical experience of reading books, especially older books, is important. He may be speaking primarily as a historian. Texture of paper, quality of

printing, binding, smell, matter found accidentally within the book, are all important to historians of a period and perhaps to other readers as well.

Abbott's (2008) work on library-based scholarship makes several points in regard to what he calls "humanistic social science" and humanities research versus standard social science research. First, he argues that libraries (viewed as both repositories of information and as a means of accessing it) and research questions are inherently connected in humanistic research. Abbott writes "Questions, answers, sources, and information are simultaneously in play in a library research project. There is no separation of design and execution" (p. 525). Secondly, he argues that standard social science research is structured around data while more humanistic research is structured around libraries. The "enormous corpus of data" is one of the major structures of standard social science research. It is largely not systematized or ordered in the way that books are organized by libraries. Knowing how to get to it is one of the skills of the expert social scientist. The second quality of standard social science research Abbott argues is specialization and division of labor. A third, and here is a main difference with humanistic research, is a tendency toward "sequential logic". Data is gathered and analyzed in a specific manner and order. The fourth and final characteristic of standard social scientific research is "...as a structure is its organization around a search for truth...The truth is thought to be out there in the real world (a, b, c cause x), and our model is a hypothesis about what the truth is..." (p. 529). "Library research" is, on the other hand, "recursive" and is ordered in part by librarian-generated classifications (call number and subject headings). It is physically embodied in many cases. (Although at present we might say it is "textual" and not primarily numerical.) Books and articles themselves refer to other texts and are themselves a type of implicit index although not one generated by librarians. Order in the library, and in humanistic library based research, is



created largely humans and not by algorithms. Such order is “idiosyncratic” and, in fact, there are multiple simultaneous orderings in the library if we take the references and quotations within books as also creating an order. In humanistic scholarship prior research is central. Reading and browsing (in whatever sense) are the major practices of such researchers with multiple meanings present and generated. Absolute sequentially does not exist in such research. Items are not always read in a particular order or from earliest to last. Abbott argues that the humanistic researcher generally reads most heavily where there are “holes” in prior research, which can be determined only by reading. In such places both broad and intense reading may be necessary. No one can perfectly predict what materials will be needed. In short, the practices of browsing and reading are nonstandardized, nonsequential, artisanal, slow, unpredictable and involve multi-tasking. In all cases, Abbott argues, the goal of the scholar is new interpretations grounded in “evidence and argument.” This paper will argue that it may be necessary to have a thickness of local collections at present, a multitude of sources, some of which may appear to be redundant, to support such practices.

Among empirical studies, Watson-Boone (1994) cites and attempts to correct Stone’s (1982) classic work on humanities scholars’ information seeking behavior. Watson-Boone summarizes Stone as saying that humanities scholars “...tend to consult originals that are usually ‘old’, to have direct interaction with related materials, and to browse open shelves”(p. 203). Stone concludes that humanities scholars were dependent on a well-stocked library, that the literature in such fields tend not to become obsolete, although important items may be used infrequently, and that the “subjective interaction between the humanist and material is a unique factor” (p. 204). Watson-Boone holds that studies show that browsing is low on the scale of important activities for humanities scholars but is viewed as highly important for making

accidental or serendipitous discoveries. She also notes that browsing can occur within books and that browsing or reading bibliographies at the backs of books is more important than librarian-generated tools such as subject-heading or annotated bibliographies. This supports Abbott's (2011) claim that scholars are more likely to use back of the book bibliographies than to use librarian-generated ones. Humanities scholars also reported that colleagues were important in pointing them to new information and sources. And Watson-Boone supports the view that humanities scholars sometimes take a "circuitous route... in their research efforts" (p. 211). She cites Nissenbaum's (1989) description of humanities research involving "Skimming" materials, writing down inferences, "wondering", beginning to "connect" ideas, developing an "intriguing angle." Later stages involve more straightforward reading and research guided by earlier developed categories, deriving findings, developing hypotheses and seeking new information and developing new hypotheses or interpretations (pp. 211-212). She sees much of the research style of the humanities scholar as "grazing". This is a grazing in the minds of colleagues, in books and their bibliographies, in reviews, and casting a net widely in the subject literature. Books may play a larger role than articles in the final outcome for humanities researchers but that this depends on the research topic. At the present time electronic resources of all sorts also serve as means of finding information, which lead to the building up of reference lists and further research. In a world of online resources this is a type of grazing that could consist of reviewing a larger number of articles than in the past because of subscription databases and or access directly, via the Internet, to free online books and other resources. It could also mean new methods of interaction with colleagues via social networks including those set up purely for scholars. This is the case for both humanities and social science researchers. Finally, Wiberley

& Jones (2000) and Ellis & Oldman (2005) all point to the newer means of scholarly communication as important for research.

Thompson's (2002) work is a study of publishing and citation patterns in scholarly books and articles in the field of nineteenth century American and British literature. Her literature review of citation patterns in the humanities from the 1980s onward indicates a consensus view of the humanities scholar as working alone, emphasizing interpretation, using browsing as an adjunct to other means of acquiring sources, and dominated by the valued production of the monograph. Humanities scholars tend to use materials older than those in other disciplines and items used in humanities research are "the least susceptible to obsolescence"(p. 124). Thompson notes that earlier citation research indicated that humanities scholars cite books more than they do journal articles. Along with books and articles, archival materials, newspaper articles, dissertations, unpublished letters and artifacts are also cited in the humanities. The study found the peak age range for book citations to be 6-10 years, followed by 11-15 years with the median citation age for book citations being 14 years and the mode 6 years. She notes that this is similar to Garfield's (1980) earlier findings. The conclusion to be drawn is that that material in the humanities tends not to become obsolete. Finally, she points out that it is difficult to distinguish primary and secondary sources in the humanities. Her conclusion is that humanities scholarship remains focused on primary sources and older secondary materials and upon the book. Her more nuanced view is that "Humanists' use of 'older' material perhaps may be characterized as use of materials from a broad age spectrum" as the age range of cited sources in her study was from newly published to 167 years. She argues that humanities scholars cite new and older sources and cites Lindholm-Romantschuk & Warner (1996) who speculate that the book allows humanities scholars to synthesize a larger body of research than does a journal article. On a

contrary note, Dalton & Charnigo (2004) provide more recent evidence that articles are becoming increasingly important to historians as sources of information in research and that the importance of articles as a publication format has also increased. They too maintain that historians seek out a wide variety of sources; book reference lists, browsing and informal means of information seeking are the dominant ones for historians. They also cite studies supporting the contention that reference lists, or bibliographies, have become longer. Knievel & Kellsey (2005) also looking at citation patterns, found that scholarly work in most humanities fields they surveyed (art, classics, history, linguistics, literature, music, philosophy, and religion) relied more heavily on books than journal articles. Philosophy (51.4% book citations) had the lowest reliance while, literature (83%) and religion (88.2%) had the highest. Williams, Stevenson, Nicholas, Watkinson & Rowlands (2009) found that humanities scholars still place an emphasis on books. Finally, Kellsey & Knievel (2012) found in their sample of English literature, philosophy, classics and history faculty that 69% of citations in their published works were to books and only 31% to journal articles. They also found that the largest percentage of items cited tended to be quite old, over 26 years.

Lincoln (2013) surveyed 2,500 students and faculty members in theological schools in Canada, the United States and other countries. Theology might be considered one of the most “humanistic” of research areas. A majority of students and faculty wanted the library to purchase at least some reference works, and Bible commentaries, in electronic format. Majorities of both students and faculty wanted the library to make available at least some newly published books, older or out-of-print books, or text books in electronic format. Nonetheless most students and faculty, when asked if they had a choice, preferred print over electronic format. This shows a mixed acceptance of electronic books in the sample.

## SOCIAL SCIENCES

Hogeweg-De Haart (1983) agrees with earlier reports that social scientific material is used by a range of patrons pursuing a variety of topics, including those outside the core of the social sciences. Like Abbott (2008) he holds that statistical data, or sources which can be reduced to statistical data (e.g. questionnaires), are important in the social sciences to a degree not usually the case in the humanities. But Hogeweg-De Haart also acknowledges that sources other than statistical data (e.g. life histories, diaries, folklore, personal documents) are used in some social science research. He argues that the boundaries between the disciplines of the social sciences are not well defined or static, and that some disciplines in the humanities (e.g. history) may be counted by some as social sciences. There is a lack of consensus as to methods, theories, or even what constitutes the appropriate subject matter of the specific social sciences. There are cultural, linguistic, ethnic, and national influences on social scientific work. Hogeweg-De Haart also argues that the social scientists tend not to build upon previous generations of work and that replication of earlier research tends not to occur.

Ellis (1989) undertook a classic study in the field at the onset of computerized information retrieval which involved interviews with researchers from a number of social science disciplines. The author determined that most social scientists followed a pattern of information-seeking characterized by the following steps: 1) Starting (initial search for information), 2) Chaining (following chains of citations or other references between items, including books and journals), 3) Browsing (“semi-directed searching” in an area, again in books and journals), 4) Differentiating (filtering according to the nature of the material found or to its quality), 5) Monitoring (maintaining awareness of the field by looking at specific sources, not always used if the project is short-term), and 6) Extracting (working through a particular source to locate

material.) This is somewhat similar to the approach of humanistic researchers, especially in its earlier steps (for instance browsing is not completely directed, chaining of citations is common to both) although it is a more linear course of action. Forming testable hypotheses, coding and subjecting data to statistical analysis, and drawing conclusions as end steps in quantifiable social sciences should be added. Differentiating between sources of information is a matter of judgment in the social sciences as it is in all fields. Likewise, as in other fields, decisions as to what is authoritative is sometimes done by knowing the structure of a discipline or subdiscipline, by knowing who the authorities are or knowing the ranking of journals (Woolwine, 2010). Ellis also argues that materials may be differentiated by substantive topic of study, by approach or perspective, and by quality, level or type of treatment. Extracting information is the process of selecting what is relevant from the mass of information for use in one's project. In the social sciences this is a complex project but once a topic is selected it need not involve diversions into entirely new areas and, therefore, the range of resources required may not be as great as in humanistic research. This process, nonetheless, requires a large number of resources, more journals than books perhaps, but books nonetheless. This research pattern of social scientists is mirrored in their citation patterns.

Citation studies indicate that, on the whole, the social sciences fall between the humanities, where books are highly used and cited, and the sciences, where journal articles are more likely to be cited or read. The preference of scientists for journal articles, pre-prints and for articles from elite researchers has long been documented (Tenopir & King, 1997; King & Tenopir, 1999; Belefant-Miller & King, 2000; Niu & Hemminger, 2012; Parker, Stefano & Lortie, 2012) .

Bott & Hargens (1991) state that “the great majority of sociological publications, be they books, papers in edited books or journal articles are subsequently cited” (p. 155). This finding indicates that both books and journal articles are important. More recent work has supported this view. Georgas & Cullars (2005) argue that in the discipline of linguistics books are heavily cited albeit not as heavily as in the humanities, stating “Both monographs and journals figure prominently in linguistics scholarship”(p. 509). Swygart-Hobaugh (2004) found that the quantitative/qualitative divide in sociology is also reflected in citation patterns where quantitative journal articles are more likely to cite other journal articles and qualitative ones are more likely to cite books. This supports Abbott’s (2008) contention that humanistic social science research resembles research in the humanities in general. Swygart-Hobaugh also notes that, whereas earlier studies (Broadus, 1971; Line, 1981), found social science research likely to cite items ten years old or less, authors in their more recent sample tended to cite items more than ten years old. This finding indicates that older material may have become more important for social science research and teaching or that recent books are becoming less important.

Yates & Chapman (2007), investigating the bibliographies of articles published in the major journals in the field of communications for the years 1985, 1995 and 2005 found the use of books relative to scholarly articles dropped in the time period. They found that in 2005 the number and percentage of articles cited increased whereas that of books remained relatively stable. This may be due to the general increase in sizes of bibliographies, due perhaps to ease of electronic access to journal articles. But more tellingly the most frequently referenced books in 1995 to 2005 were to items published in the previous ten to twenty years. Previously the largest number of references to books had been in those published in the last five years. This would provide some indication that in communication, as in some other social sciences, recent books

have become less important in scholarly research or that a core of older books is becoming more “canonical”. Their article does not allow one to conclude which is the reason.

## TRANSLATIONS

Translations are given a prominent place here because the presence of online open-access translations has raised the possibility that de-acquisition of translations may appear attractive to university administrators and that reliance on unstable freely accessible online translations may be sufficient or that librarians at small-to-middle-range institutions may be pressured to forgo purchasing recent translations, electronically or in print, to save space or money.

On the most basic level in the humanities and in the social sciences access to “appropriate” translations is crucial for research and learning. There is little in the library science literature on translations as a collection development issue (Makuch, 1992). It should first be pointed out as a principle that what constitutes an “appropriate translation” for a library to hold is only determinable by context which can vary greatly. The following is an example of a decision which must be made within religious studies and philosophy. Among many scholars of Moses Maimonides, the translation by Schlomo Pines of *The Guide for the Perplexed* (Maimonides, 1963) came to be considered superior to the one made in the late 19<sup>th</sup> century/early 20<sup>th</sup> century by Michael Friedländer (Maimonides, 1910). The Friedländer translation, on the other hand, is freely available in many places on the Internet. But according to at least one major modern Maimonides scholar it is so unreliable as to be misleading (Fox, 1990). If Fox is correct, or even if many scholars believe Fox to be correct, it would be a disservice to provide only the freely available online Friedländer translation to faculty members, and perhaps, more importantly, to



students. On the other hand, the Pines translation, accompanied as it is by an “Introductory Essay” by Leo Strauss may not be the translation all philosopher professors would recommend to their students. At least a link in the catalogue to the open-access Friedländer translation might be a good idea to serve such professors and their students and, furthermore, a librarian might consider purchasing a third translation as well, the abridged Guttman translation (Maimonides, 1952). Here professional judgment is required. Librarians could multiply such examples many times over when choosing between free online translations and those regarded as the best in the field, most up-to-date, most well regarded by scholars, or as useful alternative ones. Many of these must be paid for and do not exist, at present, in an electronic format. Furthermore, older or alternative translations may be retained for a variety of reasons, some of which will be touched on below. To go beyond Moses Maimonides, in religious studies alone retention of various translations of not only canonical scriptures but of commentaries and of non-canonical religious texts are useful for research and teaching. Variant translations of religious texts may be used to document changes in religious doctrine and to teach the history of religion or of interreligious relations. An example here is the role of Bible translations in the Protestant Reformation and in the development of Protestant culture (O’Sullivan & Herron 2000). Another example is the role of Septuagint in the development of both Jewish religious beliefs and of the Christian scriptures (Seidman, 2011; Greenspoon, 2011). Some of these may be accessible as open-access versions but a full reliance on such freely available translations cannot be taken automatically to be sufficient for an academic library.

Outside of religious studies what purposes do translations serve? There are many and many of them have been brought to the fore by the interdisciplinary field of translations studies (Naudé, 2004). One way of discussing this is to look at the purposes translations serve in the

humanities and the social sciences. One is that theories of translation have varied greatly over time (Amos, 1920; Bassnett-McGuire, 1980; Williams, 1987; Lefevere, 1992). This means that translations that are available as freely accessible online versions may not conform to the various theories of translating currently in vogue or represent the full range of theories of translation. Variant translations of the same texts should be retained therefore (in print if not available online in a stable repository) because faculty or students may be interested in studying the history of translation. Lefevere (1971) has also listed several reasons why retention of variant translations of the same text is useful in teaching comparative literature. He argues that translations may reveal the styles of the period into which the translation is being made and that translations are necessary for tracing influences from literature in one language into another. Lefevere argues specifically for retention of variant translations of poetry including those labeled “bad.” He writes “If poetry really gets lost in bad translation, then surely a comparison between a text universally acclaimed a ‘good’ poem and several other texts equally universally believed to be ‘bad’ translations thereof, could teach us quite a few things about the nature of poetry...” (p. 15). Finally, Lefevere (1995) argues that a powerful, although non-academic, translation may have immense influence in a culture or in literature. This would necessitate the retention, or purchase, of non-scholarly translations.

Translations also serve the social sciences. For instance, translations in older versions (again online or in print) may be useful for teaching colonialism and postcolonialism (Bassnett & Trivedi 2002). They may be useful for courses and research on the formation on national and other identities and even for the teaching of ethics (Schäffner & Kelly-Holmes, 1995). They may also be useful in the teaching of sociology (Heilbron, 1999; Heilbron, 2000; Pym, Shlesinger & Jettmarova 2006; Wolf & Fukari 2007).

## STUDENT RESEARCH

Since this paper is concerned primarily with small-to-medium-sized academic libraries undergraduate research emphasis, which is often a concern of such libraries, will be addressed in some detail. Libraries have a dual role at present. One is to assist in educating students in information literacy, the ability to find appropriate resources and to evaluate them. The other, and more traditional role of libraries, is to provide access to appropriate resources in all disciplines taught at the university. The paper will now show a relationship between these two roles.

Rowlands, Nicholas, Huntington, & Fieldhouse (2008), using data from the United Kingdom CIBER reports, explores the research practices of the “Google generation”, i.e. those born after 1993. The authors found that many users are now engaging in information seeking behavior that may be characterized as “horizontal, bouncing, checking and viewing in nature.” This involves skimming, quick viewing, downloading (but not necessary reading), using diverse sources, and spending little time evaluating the authority of the sources encountered. Students also tend to “cut and paste” rather than to analyze, digest or state ideas in their own words. Prabha (2007) also argues that all researchers today are more likely to stop searching for information when they are “satisficed” rather than satiated. Satisficing behavior is stopping when one has found “good enough” information given one’s specific goals and restraints. It can be a form of coping behavior in an extremely rich information environment. For both graduates and undergraduates this could mean stopping their information search when they had found the exact number of articles requested by their professor. Faculty members are also constrained by time, and, although tending to do more thorough searches than do students, may search less when preparing for a short lecture than for a longer one. Several criteria were also used by both

faculty and students when deciding when to stop looking such as the authority of a source and repetition of information found in several sources. Both faculty and students also used criteria such as “trustworthy”, “representative”, “current”, “cutting edge”, and “exhaustive.”

“Exhaustive” is the most difficult to define in this context, but the other criteria are, in fact, substitutes for a completely exhaustive search, i.e. one finding all relevant information.

Catalano’s (2013) meta-analysis of the scholarly literature on graduate student information seeking found that students would accept materials of lower quality if it will save time. But she also reports that information literacy training improves the ability of graduate students to judge quality of resources and to exert judgment in searching for information. On the other hand, Nicholas, Huntington, Jamali & Fieldhouse (2009), also working with CIBER data, found students initiated a larger number of online search sessions than others in the academic community. This included graduate students. Students also spent longer time online. As noted above students tended to “bounce” from articles but read more pages of electronic books. The major conclusion was that students constituted a distinct type of user. I would argue that a possible reason for this is that students are novices both in searching online academically and in doing research and, therefore, search less effectively and less efficiently. However, as Nicholas et al. (2008) argue reading in snippets may be characteristic of all readers online, not just students.

These characteristics of searching, especially in the case of faculty, may also be a reaction to the increased size of bibliographies and the increased numbers of articles and books that may be retrieved in a mixed print and online environment. It may be that more seasoned scholars are better at negotiating this environment. This would explain, in part at least, Nicholas et al.’s (2009) findings. The question, therefore, becomes: How does information literacy

education help to change the undergraduate researcher into something resembling a skilled scholar-researcher and how is this connected to collection development? The answer lies in unpacking the idea of engaged undergraduate research.

Calls for engaging undergraduates in research have a long history, with the report of the Boyer Commission (1998) being an important early voice. Engaged student research has been most consistently adopted in the sciences and it is there for which there is the most evidence of positive results (Doyle, 2000; Carter, Mandell & Maton, 2009). Participation in laboratory work has been shown to increase undergraduates' ability to contribute to original research in science (Rasche, 2003). Retention rates and enrollment in graduate programs may be influenced by participation in science research, especially for minorities (Nagda, Gregerman, Jonides, Von Hippel & Lerner, 1998; Locks & Gregerman 2008; Brownell & Swaner, 2009). Undergraduate students may also benefit personally, cognitively and professionally from a participation in research. Gains in skills and clarification of educational goals have been reported (Seymour, Hunter, Laursen, Deotoni, 2004; Hunter, Laursen & Seymour 2006; Lopatto, 2010). A more sophisticated understanding of science, the ability to work independently, ownership of a project, patience and perseverance are some of the psychological benefits (Thiry, Watson, Laursen & Hunter, 2012).

There is also support in the literature for positive outcomes for undergraduate research in the social sciences and humanities (Kremer & Bringle, 1990; Ishiyama, 2002; Landrum & Nelson, 2002; Bauer & Bennett, 2003; Kuh, 2008). Stephens & Thumma (2005) reported the following statement by a student engaged in a close collaborative project with a faculty member. "My previous library experience had consisted of what amounted to instructor-led scavenger hunts...I had completed research projects for classes, but most of those had not stretched my

prior research knowledge...Most of all, the experience forced me to discover the possibilities and limitations of what the library could offer and gave me the confidence to ask questions and uncover hidden answers on my own” (p. 535). The student also said, “The second benefit I believe I came away with is an increased level of self-confidence...I felt that I could express my own opinion, that I could place relative value on the documents instead of being told what was important” (p. 536). Stephens, Jones & Barrow (2011) state that students in a collaborative project reported an increase in knowledge of library resources, a recognition that the workload to produce the project was greater than expected and greater satisfaction with the project. Some students also reported greater motivation and pride in their work while others experienced self-doubts and anxiety. All of these findings support the idea that the engaged research experience, or a cumulating set of such experiences, is at the core of liberal arts as well as science and engineering education. Finally, there is also clear evidence that library use, in general, contributes to undergraduate retention and academic success (Soria, Fransen & Nackerud 2013; Stone & Ramsden, 2013).

Establishing a connection between information literacy and collection development is through an unpacking of the idea of engaged undergraduate research. For this may be the major means colleges have of developing superior analytic skills and a moral orientation directed toward truth, or at least respect for evidence, and creativity. An ideal outcome and the stages leading up to it is a place to begin. Farrell (2012), drawing on the work of the philosopher Hubert Dreyfus (Dreyfus & Dreyfus 1986; Dreyfus & Dreyfus 2005; Dreyfus, 1992), outlines such a process of training and transformation. He describes a five stage model of information-seeking and of research. He also references Foster (2005) to argue that the most skilled practitioner does not merely follow rules in information-seeking or in research, although rules have been

internalized in a situated context, but rather “sees what to do and does it”, and “embodies the skill.” At this point the researcher may be prepared for serendipitous discovery and connection. Not all researchers reach this stage, probably few undergraduates do, and not all mature researchers act intuitively at all times in the process, especially when encountering or taking up entirely new problems. But the possibility of achieving this stage might be a guide for educating undergraduate and graduate teaching in research skills and in information literacy. Feldman, Divoll & Rogan-Klyve (2009; 2013) make a similar distinction (for honors undergraduates and beginning graduate students in sciences). They distinguish between “novice researchers”, “proficient technicians” and “knowledge producers.” Although not delineating the steps as precisely as Farrell, they argue that the ultimate desired experience is one of mastery, seeing the greater whole, and, ideally, contributing to knowledge. There is also ethnographic research to indicate that students can, over a college career, become more sophisticated researchers and library-users (Pickard & Logan 2013).

The role of serendipity in discovery and creation has been mentioned above as a possibility at the most advanced stage in the development of research skills. This has been addressed in the sociology of knowledge. Merton (1948) described how serendipitous suggestions arising from the examination of empirical data have influenced the creation of sociological theory. Barber & Fox (1958) produced the classical study on serendipity in science on the topic. McClellan (2005) has specifically addressed its role in historical research where he believes it plays a greater role than historians acknowledge in their public writings. He quotes Merton & Barber (2004) in saying that the historian, and perhaps the humanistic scholar in general, makes herself ready for serendipitous encounters by “persistence, detective skill, fervor [and] hard work ” (p. 19). Rice, McCreadie & Chang (2001) note that browsing assists in

producing serendipitous findings. Foster & Ford (2003) summarize research on serendipity and conclude that it can be an important component of information seeking. They define it as finding unexpected information or finding information in an unexpected location, or discovering that information has unexpected value. Openness of mind and an abundant sense of engagement, a desire to seek out information anywhere are also personality characteristics of those making serendipitous discoveries or connections. They cite Erdelez' (1999) description of some researchers as "super-encounterers" of information. This would be those who continuously seek out information and enjoy discovering it. Finally, McBirnie (2008) argues that serendipity is likely "a regular, yet rare occurrence" and that the "immediacy in recognition" is characteristic of serendipitous occurrences. In the process of research, chance discoveries are potentially present much of the time but perception on the part of the observer is a necessary to grasp them. McBirnie argues that perception may be under greater control than other elements of the process. Maintaining an attitude of flexibility as to where to look and as to what constitute important information is one means of controlling perception.

Linking the role of serendipitous discovery in scholarship, the role of research in undergraduate education, the nature of scholarly research in the humanities and the social sciences, and the numbers and percentages of scholarly books presently digitized, conclusions for collection development can be drawn. Centering the undergraduate student educational experience in research prepares the student to make creative and serendipitous discoveries. It helps create a moral orientation (namely valuing truth or evidence) which is also supportive of these goals. But students in the humanities and social sciences, in order to have a full research experience, must have easy access to a sufficiently rich collection of resources, many of which will be electronic resources but many of which also are still print books. Furthermore, the



distinction between a library collection supportive of faculty research and that supportive primarily of undergraduate research and teaching ceases to have real meaning. This type of collection, for browsing, and analyzing, can be partly digital but at present it cannot be entirely so.

## CONCLUSIONS AND SUGGESTIONS

What suggestions can be made for small-to-medium-sized academic libraries? First, Abbot's (2008) description of humanistic research (including interpretative social sciences) would support the view that libraries remain important repositories. Quantifiable criteria for retention (e.g. how often used in the last five years or decade) ignores the unpredictability of humanistic library-based research, the inability in the humanities, and the qualitative social sciences, to predict where new interpretations of texts (be they historical, philosophical, religious studies or literary) will lead and what texts will be required to construct such interpretations. Given that most scholarly sources are not yet digitized, the limitations of interlibrary loan, and the fact that libraries are only in the initial stages of large-scale consortia or networks a tolerance of apparent redundancy (many books on the same topic) in the collection and non-use for periods of time is required to support humanistic liberal arts and humanistic social science faculty and student research. This can, in principle, occur in either print or electronic format but presently cannot be fulfilled entirely by electronic holdings and assuredly not by freely accessible ones alone. This applies to advanced undergraduate research as well as graduate and faculty research.

Studies other than Abbot's, largely citation ones, support such contentions about humanistic research. Journal articles are increasingly used among such scholars but books remain core to the humanistic research project. Older books remain important as well as newer ones. Knowledge of the research and teaching interests of faculty, of present open-access materials, of on-going research in a field, of changes in format and the ability to determine relative costs, in short, the professional judgment of a trained and engaged librarian is needed to maintain a collection which supports both research and teaching in this transitional period. Citation studies also indicate that social science researchers in general also require access to both older and newer materials. Social science researchers, therefore, also need a broad range, and richness, of materials. The range and diversity of older materials may be less than in the humanities and many newer materials may grow obsolete in way that books in the humanities do not. There is, furthermore, some indication that a canon of older works is developing in at least some of the social science disciplines that must be retained in some format.

Older books in the humanities should be de-accessed in the most conservative manner with care taken to determine if a title is incorporated as full-text in a stable, open-access, database which also employs library-level metadata (e.g. HathiTrust). Classic texts may be maintained in a print form but the possibility of acquiring licensed database access to such items in various translations should be explored. Books should be purchased in digital format when viewed by subject librarians as appropriate with the intention of moving toward increased purchasing in that format as downloadability and reader compatibility issues are resolved. But de-accession of presently held print materials should occur slowly.

Online, freely accessible, translations, even in stable repositories, are not sufficient to meet the needs of most academic institutions. Care should be taken in de-accession of

translations held in print when no stable online repository version of the same translations exists. Translated materials play a role other than providing access to a foreign language text. They can be used to raise a wide variety of historical, cultural, and sociological issues and are useful to multiple disciplines. It may be appropriate to have variant translations of the same work. So called “bad” translations may also serve educational and research goals.

It will be the role of professionally trained librarians who weigh a multitude of factors (including local patron and institutional needs) to make decisions as to what to buy or license and in what formats and, most importantly, what to de-access. A constant monitoring of technological and legal changes is required as well as of scholarly literature on the effects (positive and negative) of digitization on academic research. At present interlibrary loan remains supplemental to local collections but emerging changes such as loaning of electronic books for a small fee from vendors and the increased use of consortia which allow for the loaning of electronic books are two of the main areas to be monitored. The establishment of large, or regional, consortia should be explored, noting that many steps must be taken before consortia-held collections can efficiently function as replacements for rich local ones. The overall process will perhaps be a faster evolution than any would have imagined ten years ago, but evolutionary nonetheless.

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