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Historically significant journal articles: their identification in older bound journal volumes designated for weeding and the creation of new access to these articles

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OBJECTIVE

This project sought to identify historically significant articles in older bound journal volumes undergoing evaluation as candidates for weeding. Health sciences librarians can expect to be involved in similar weeding projects as collections continue to outgrow available space in library buildings. Digitizing collections and placing greater reliance upon electronic versions of books and journals will not solve space problems in libraries [1, 2]. Over the period of a recent decade, medical school libraries grew from an average of 174,488 bound print volumes to an average size of 233,562 volumes [3, 4]. This growth may largely be the result of the appearance of both new journal titles and the larger numbers of articles published in established journals each year [5]. Print monographs also continue to play a vital role in health sciences libraries [6, 7]. In addition, with each passing year, others outside of libraries grow increasingly covetous of space occupied by libraries [8, 9].

This project began when approximately 1,500 linear feet of shelf space in an offsite storage facility needed to be created within a four-month period amidst a crowded bound journal collection. The extra space had to be created due to renovations in The University of New Mexico (UNM) Health Sciences Center (HSC) Library building that required shifts of bound journals to the offsite compact shelving storage facility. Of these nearly 6,900 bound journal volumes, 38.6% were published during the 1880 to 1950 era, raising concern that historical items of potential value to future researchers might be unintentionally discarded during the weeding project. Although the UNM HSC Library's mission supported historical collections relevant to the health sciences in the southwestern United States, this mission did not extend to the specific materials covered by this project. Once the first author identified for retention those individual volumes containing historically significant articles, the second author designed new modes of access to increase user awareness of their existence.

METHODS

This case study begins with a brief review of the weeding criteria employed by the first author. It then offers greater detail on how the first author identified historically significant articles housed in a bound journal collection principally from the 1880 to 1950 era. The second author describes the cataloging methods used to create access to these articles via multiple fields: author, journal title, subjects, and the global identification of this genre of material referred to as ''classic articles.''

In February 1998, the head of serials asked the first author to identify, for weeding, 1,500 linear feet of bound journals from a collection located at a storage facility in an adjacent building. A member of the serials staff provided usage data from the UNM HSC Library's Innopac system for each of the bound journal titles housed at this facility. The first author only considered sets of bound journal titles that had experienced no use or only one use over a nine-year period, as recorded in the Innopac online public access catalog (OPAC), for possible weeding. Past usage history and the language of the text in these bound journals appeared to be the best practical predictors of future use under the circumstances [10]. The staff of the Interlibrary Loan/Document Delivery Unit then checked these titles against holdings at other research libraries

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in a five-state National Network of Libraries of Medicine (NN/LM) region. Provided that at least one other library had comparable or more extensive holdings of the same journal title, an identified title would remain in consideration for weeding.

The first author then consulted the second edition of Ash's *Serial Publications Containing Medical Classics* to match journal titles containing historic articles with those journal titles slated for possible weeding [11]. Ash's book was designed as a companion to the 1970 edition of Garrison and Morton's medical bibliography [12]. Ash's book contained some entries that did not match the 1991 edition [13] of Morton's bibliography, however. The first author had to locate the correct entries for the classic articles contained in the bound journal titles owned by the UNM HSC Library by searching in Morton's 1991 edition. In a few cases, the 1991 edition of Morton's had altogether deleted the citation referred to by Ash. This exercise led the first author to scan Morton's 1991 edition for journal title citations that were not listed in Ash's book.

By June 1998, the first author had identified forty-one volumes that contained either one or two historically significant articles. This project had to compete for the authors' time with another project to integrate history of medicine (but not historically significant) monographs into the general monographs collection. Thus, the project described in this article could possibly have been completed in half of the allotted four months. The forty-one volumes identified for retention occupied a total of only ten linear shelf feet. Those bound journal titles containing more than two historically significant articles were retained in the collection at the offsite storage facility. The first author authorized those bound journal volumes not containing historically significant articles to be withdrawn from the collection. These bound journals, comprising approximately 6,800 volumes and occupying about 1,700 linear shelf feet, were offered to other health sciences libraries via an electronic mailing list and discarded if no library requested them within two months. No libraries accepted this offer.

The second author used the entries in Morton's fifth edition [14] to create individual catalog records for the historically significant articles (Figure 1). The bound volumes containing these classic articles were shelved in the offsite storage area by newly assigned call numbers, so they could be retrieved within a few hours during weekdays. The second author created access via author(s), article title, journal title, and anywhere from one to six subject headings, with an average of 2.08 headings per article. The catalog† also enabled users to identify all historically significant articles from this project via the additional global subject heading ''classic article.'' The first author had a minimal role in this phase, mainly limited to suggesting additional subject headings and editing other elements of catalog entries.

Figure 1
Sample catalog entry

RECORD #: b10771797
AUTHOR Torkildsen, Arne 1899–
TITLE A new palliative operation in cases of inoperable occlusion of the Sylvian Acqueduct/by Arne Torkildsen.
PUBLISHER Stockholm: P.A. Norstedt, 1939.
SERIES Acta chirurgica Scandinavica; v.82, pp.117–124.
NOTES Morton, 5th ed. 4909.1.
SUMMARY Ventriculocisternostomy for the relief of obstructive hydrocephalus.
SUBJECT Cerebral Aqueduct—surgery.
Hydrocephalus—surgery.
Classic article.

From the second author's viewpoint, the article-level cataloging required by this project was straightforward. A few records were already in OCLC, their records having been created by the Wellcome Institute. Selecting a call number was occasionally difficult, simply because the cataloger lacked sufficient knowledge either of the content or the language of the article. Translation of titles, necessary to give the cataloger a clearer indication of content, became a problem with many of the foreign titles. Scientific terms are often difficult to translate directly. Subject analysis, mapped to Medical Subject Headings (MESH), was initially done only broadly. After creating and printing out rough catalog records, the second author gave the records to the first author to proofread and to conduct a more comprehensive subject analysis. Each record also contained a series tracing for the journal title, including volume numbering and page information. As an aid to historical researchers, a citation/reference (510) note was included in each record giving the article's entry number in *Morton's Medical Bibliography.* Finally, if a summary of the article was present in Morton, it was included in the record in a summary (520) note.

One innovative approach to enhancing access to these articles was the use of the uniform subject heading ''Classic article'' in the genre index term (655) field. While the usefulness of this practice to the patron has yet to be determined, it certainly provided a simple way to track the records connected with this project. The most time-consuming process, though, was the need to establish authors' names. For the most part, *Morton's Medical Bibliography* provided birth dates, death dates, or both. In some instances, the bibliography did not provide anything more than a first and last name. Ascertaining life dates for these authors often proved quite difficult. Various sources such as OCLC's authority file, Web searches, and biographical

† The UNM HSC Library catalog may be viewed at http://hsc.unm.edu/library/.

dictionaries were consulted, often yielding no results or, worse, contradictory results. For example, *Morton's Medical Bibliography* gave 1872 as the birth year for Christian Fredrick Heerfordt, but the Library of Congress gave 1871 as the birth year. In one case, an obituary announcement in a journal was used to provide life dates. Despite the many resources used, some names were never matched with life dates at all. Despite the historical significance of these articles in medicine, many of the authors were apparently being gradually forgotten.

RESULTS AND DISCUSSION

Some of the historic landmarks captured in these historically significant articles included: the establishment of a link between cholesterol and arteriosclerosis, a diagnostic test for color blindness, the first corneal transplant, the use of cyclopropane in anesthesia, the isolation of insulin from the pancreas, the discovery of erythromycin, and the treatment of polycythemia. The texts of these classic articles did not appear in two of the more widely recognized sources on medical history [15, 16]. In a later phase of this project, those more numerous classic articles contained in long runs of retained bound journal titles will also need to be cataloged. The authors elected to retain the actual volumes containing the classic articles rather than simply digitize the articles. The multisensory experience of seeing, handling, and even smelling the actual historic articles and skimming adjacent articles in the retained volume seemed like a more appealing alternative for future researchers.

The reader might think that citation analysis could be employed to identify articles in bound journal volumes published too recently to appear in either Ash's or Morton's books. Garfield has identified a number of heavily cited articles in the biomedical or the life sciences literature in subjects such as preclinical and clinical research, biochemistry, molecular biology, pediatrics, cancer research, pathology, surgery, and general medical and clinical journals [17–30]. Garfield and others, such as Smith, have suggested that citation analysis might supplement, but not replace, standard weeding methods in libraries [31, 32]. Unfortunately, no evidence exists to correlate historically significant articles with those receiving numerous citations. Some suggest that references to most historically significant articles will not be cited, due to a process called ''obliteration through incorporation'' as these classic articles are absorbed into the knowledgebase [33]. In some cases, a negative correlation may even exist between high citation and important elements of a discipline's knowledgebase found in classic articles [34].

Still undeveloped applications of citation analysis, such as tracking of certain types of references in core textbooks, might identify more recently published historically significant articles in the future [35]. In a related approach, we were curious to learn if relevant medical history monographs cited classic sources frequently. The second author consulted ten medical history monographs that were selected using a derived subject search using the term ''history'' in conjunction with such terms as ''antibiotics'' and ''tropical diseases.'' Upon reviewing these sources, the second author discovered that far more references in the selected medical history monographs cited secondary rather than classic works.

As noted above, the UNM HSC Library's mission did not support building collection resources containing the kinds of materials described in this case study. We primarily were concerned with preserving and making more accessible those items of recognized historic value. Libraries with missions that emphasize building or maintaining historic resources would want to employ different strategies such as digitizing or microfilming, or perhaps even storing, entire runs of journals rather than preserving select volumes. We had neither the time, finances, nor space to entertain these options, given our limited mission.

Growing collections in the UNM HSC Library will inevitably require further weeding of the bound journals in offsite storage within five years for the collection to occupy the same physical space. We are hopeful that by then, later editions (or their equivalents) of both Ash's and Morton's books will be available to identify more recent classic articles. Without the older editions of Ash's and Morton's, this project would have been far more difficult, if not impossible, to complete with the same amount of efficiency.

Will the authors' new system of access create increased circulation? We only will begin to answer this key question several years from now, when we can analyze the circulation data as part of a prospective cohort study. Weeding, alone, has not been convincingly linked to increased usage [36, 37]. In some respects, this project establishes the foundation for a unique type of weeding project [38]. We do know that these individual volumes, housed with other volumes from the same journal title, were not used during the nine years that preceded this project. Over the next five years, we can study use compared to modest baseline usage data for the volumes containing selected classic articles. In the meantime, health sciences librarians may hope that future editions [39] of Ash's and Morton's books will be able to keep pace with the inevitable weeding demands placed upon large library collections.

CONCLUSION

Readers can review all historically significant articles at the library by searching the subject heading ''classic article'' in the UNM HSC Library's online catalog. The

results of this case study suggested that existing tools such as Ash's and Morton's books were invaluable aids to identify and retain classic articles, otherwise slated for weeding, in bound journal volumes from the 1880 to 1950 era. These tools enabled the UNM HSC library to weed approximately 1,700 linear shelf feet more confidently. The approach outlined in this case study might lend greater confidence for health sciences librarians similarly prompted to engage in a weeding project due to limited space for collection growth.

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