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Crossing Subject Boundaries: Collection Management of Environmental Studies in a Multi-Library System

Barbara DeFelice and Constance Rinaldo

In a library system with many subject-oriented libraries, managing a collection for an interdisciplinary field such as environmental studies poses many challenges. Our principal approach has been to develop a detailed collection development policy that identifies primary library locations for broad subject categories. In this paper we describe the process of creating this collection development policy. Included is a discussion of the rationale for the policy, the process of developing a list of subject terms, and the creation of a format for the information. Ideas for handling a physically and intellectually dispersed collection of library materials are addressed.

Interest in environmental studies as an academic discipline has grown tremendously since the first Earth Day in 1970 (Brough 1992; Capone 1991). Programs in environmental studies have proliferated and are attracting increasing numbers of students (Campbell et al. 1990; Capone 1991; Nickerson 1991; Ronald and Nicholls 1992). Commitment to this subject area is growing, even though in some schools, official support for this non-traditional area of study is still tentative (Brough 1992; Capone 1991; Disinger 1992). There are now environmental studies programs in colleges and universities across the United States and Canada. These programs cannot be characterized by departmental affiliation or institutional type, but by the interdisciplinarity of the teaching and research undertaken through these programs (Ronald and Nicholls 1992; Schoenfeld and Disinger 1987).

Environmental studies is one of the most broadly interdisciplinary subject areas in scope (Campbell et al. 1990; Ronald and Nicholls 1992). This poses special problems for librarians responsible for collections covering the diverse fields related to environmental studies: how best to find, organize, and develop access to materials to satisfy user needs (Hurd 1992; Fikoff 1991). This is aggravated in a multi-library system where collection management responsibilities are distributed among subject bibliographers and

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across subject-oriented libraries, which is the situation at Dartmouth College.

The purpose of our paper is to describe the need for alternative approaches to managing interdisciplinary materials and the development of a collection policy for a physically and intellectually dispersed collection of library materials.

**STATEMENT OF THE PROBLEM**

Dartmouth College is a degree-granting liberal arts institution that offers graduate degrees in the sciences, music, psychology, and liberal studies. In addition there are three professional schools: Business Administration, Engineering, and Medicine.

At Dartmouth the majority of research and study materials are housed in the nine subject-oriented libraries that constitute the Dartmouth College Library. These are Baker Library for Humanities and Social Sciences (including Sanborn House for Literature); Cook Mathematics Library; Dana Biomedical Library; Matthews-Fuller Health Sciences Library; Feldberg Business and Engineering Library; Kresge Physical Sciences Library for Chemistry, Earth Sciences, Physics, and Astronomy; Paddock Music Library; and Sherman Art Library. Approximately thirty-four librarians have subject-specific selection responsibilities for the collections in these libraries. Although Dartmouth's collections are all accessible through an online catalog via the Dartmouth College Information System (Finnegan 1990), the library sites are as much as two miles apart.

There is an active Environmental Studies Program at Dartmouth College and collections are needed to support this program. There are also many faculty and graduate students from various departments such as biology, geology, and chemistry working on environmental science projects. Faculty and graduate students in widely separated locations require research materials that are distributed throughout nine campus libraries. Popular books are necessary for undergraduate distributive requirements. Dartmouth has active foreign studies programs, and environmental topics are an integral part of these programs.

Many Dartmouth undergraduates are exposed to environmental issues through the Freshmen Seminars (writing and research classes normally taken during the freshman year). Those that relate to the environment have become increasingly popular. In 1990–91, seventy-seven of these seminars were offered by twenty-five departments. Of these seminars, 9% had an environmental theme and were spread across four departments (Dartmouth College, 1991). By 1993 the percentage of Freshmen Seminars that centered on an environmental theme increased from 9% to 17%.

The librarians at Dartmouth provide subject-oriented instruction to familiarize students with the various libraries as well as the tools they need to conduct their research in environmental studies. This guidance encourages students and researchers to use the online catalog to access materials in all campus libraries. While these programs are effective, there is still a need for a document that communicates the overall plan for the collection.

Faculty in the Dartmouth Environmental Studies Program have expressed a strong desire that the College Library gather all environmental material into one coherent, centrally located collection. Their feeling is that undergraduates are not well served by the large, divided collection because they are unlikely to persist in locating materials that are widely dispersed. The faculty think the students need an easily browsable collection that crosses broad subject boundaries. Thus the Environmental Studies Program maintains a small, unified browsing collection for students as a starting point for their research.

Some organizations solve the dispersal problem by maintaining separate collections in environmental studies and even developing unique classification systems (Rauscher 1992; Rauscher 1993). Williams College has expanded this approach into a separate library for environmental studies (the Matt Cole Memorial Library).
that has document and book holdings in excess of 12,500 items, as well as 250 serials subscriptions (Rauscher 1992, 93-103).

However, the aforementioned solutions are not practical at all institutions. Therefore, ways of incorporating the environmental materials into the traditional library structure are needed.

Developing a collection for environmental studies to serve diverse user groups creates a special challenge for bibliographers and collection managers. There is no one definition of what constitutes environmental studies that fits all institutions and all programs. Most traditional subject areas, from art to zoology, have some environmental aspect. However, environmental studies has its own literature (Robnett 1987), so it cannot just be subsumed into other subject areas from a collection development and management view. Federal, state, local, and international government documents are also important sources for environmental materials (Ercegovac 1992; Robnett 1987), and these frequently are handled differently from other types of materials. Both traditional subject-oriented materials that relate to environmental studies and broad-based materials on the environment need to be included in the collection. With the advent of numerous electronic data sources, including Internet resources, the problem of assessing and acquiring interdisciplinary information has been compounded (Weiskel 1991). Clearly a plan for an organized approach to collection development is needed.

**Rationale for Developing a Policy**

Collection development policies provide convenient methods of defining responsibilities, setting selection guidelines, describing a collection, and communicating among librarians and users, as well as providing accountability. “A written policy provides the rationale for selection of individual items and ensures consistency and balance in the growth of collections” (Bostic 1988). The current budgetary climate and rapidly changing material formats have underscored the need for clearly defining collecting criteria and closely examining purchasing patterns (Bostic 1988; Richards 1991). Providing informational materials for an interdisciplinary program in a multilibrary system demands an approach that encourages communication and cooperation among all involved. A collection development policy is a document that naturally facilitates this process (Bostic 1988).

The Dartmouth College Library Collection Management and Development Committee decided that an environmental studies collection development policy was necessary to facilitate communication about current collecting activities and to guide librarian subject bibliographers as they select materials appropriate to the collections in their library. This policy had to reflect the organization of environmental studies materials in the Dartmouth College Library system and include input from subject bibliographers (librarians) and from faculty. The policy also had to be understood and used by people with diverse backgrounds and interests. More than other policies, it had to clarify which library had primary responsibility for what subjects, to ensure that subject coverage as a whole was adequate for the Dartmouth College Environmental Studies Program and to facilitate access to materials by users.

**Problems in Developing a Collection Development Policy for Environmental Studies**

There is no Research Libraries Group (RLG) conspectus of other collection assessment and description tool that would help a collection manager identify class number ranges for environmental studies monographs and serials, offer a list of terms, or organize an environmental studies collection policy in a logical format. There is no standard that can be consulted and understood by subject bibliographers working in disciplines that have a major or minor environmental studies component.
(Robnett 1987). Bibliographies can serve as subject-organized tools for reviewing subject coverage (Forthcoming Science Books of 1993; Interdisciplinary Checklist 1991; Douville 1992; Stoss 1991), but these are extremely fragmented in their coverage. A bibliography that attempts to fill this gap has recently been published, but it is not sufficient on its own (Yale School of Forestry and Environmental Studies 1993).

The Library of Congress (LC) classification scheme places material relating to the environment within the standard subject classifications, but this is not useful for all materials (Shapiro and Whaley 1987). LC recently began an environmental sciences classification schedule (GE), but how that will be used is not yet known. The classification scheme develops topics such as environmental education, environmental philosophy, and communication in environmental sciences but does not move topics such as environmental geology (QE38) or conservation of natural resources (S900-S954) from their current placement (Library of Congress 1992).

Some libraries, such as the Dartmouth College Library, have a model plan for a collection development policy that is followed for all subjects (Bostic 1988). Environmental studies did not fit into the model as well as the more traditional academic subjects.

**Steps in Developing a Collection Policy**

At Dartmouth, subject bibliographers produce and update collection development policies for their subject areas following a model plan. No one bibliographer is assigned environmental studies because it is considered to be part of so many different subject areas. At least thirty bibliographers at Dartmouth purchase materials that may be relevant to environmental studies.

Four bibliographers representing the areas with the most activity in environmental studies were asked to create the first policy. This was done in 1988 and updated in 1992. Prior to 1988, a draft policy written in 1982 was the only guide to collecting in this area. The libraries (and disciplines) represented in the working group were Baker Library (humanities, social sciences, government documents), Kresge Physical Sciences Library (chemistry, earth sciences, physics), Feldberg Business and Engineering Library, and the Biomedical Libraries (biology and medicine).

This environmental studies working group divided the project into four sub-projects: developing a list of subject terms, doing a collection assessment to understand better how the subject was collected in the various libraries, writing a description of the research and teaching programs involving environmental studies at Dartmouth, and creating a format to represent how the subjects were collected in the various libraries.

Before the collection could be assessed, a list of subject terms had to be developed that would cover relevant aspects of environmental studies. Finding subject terms that represented the current literature, yet followed standard library subject indexing as much as possible, was important so that the faculty, students, and librarians could understand the scope of the policy. As with other fields of study, it was found that the Library of Congress subject headings were often not the terms that the researchers were using (Shapiro and Whaley 1987). It was also interesting to see how the subject headings in the policy changed in the three versions of the policy from 1982 to 1992 (see Table 1). During this process, it was important to remember that there was no intention to include the universe of environmental subject terms, but rather to reflect the emphases in teaching and research at Dartmouth College.

The existing draft policy primarily covered environmental sciences, not humanities or social sciences aspects of the environment. Thirty-two subjects were listed, and most of these began with the term Environmental, as in Environmental Engineering, Environmental Pollution, and Environmental Chemistry. The terms were organized in a subject hierarchy. For example, types of pollution, such as Air...
### TABLE 1

<table>
<thead>
<tr>
<th>Environmental Studies Subject Heading Time Line (Sample)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1982</strong></td>
</tr>
<tr>
<td>None</td>
</tr>
<tr>
<td>Pesticides</td>
</tr>
<tr>
<td>None</td>
</tr>
<tr>
<td>None</td>
</tr>
<tr>
<td>None</td>
</tr>
<tr>
<td>Environmental Control</td>
</tr>
<tr>
<td>Environmental Health</td>
</tr>
<tr>
<td>Environmental Impact</td>
</tr>
<tr>
<td>Environmental Impact Statements</td>
</tr>
<tr>
<td>Environmental Pollution</td>
</tr>
<tr>
<td>Environmental Sciences, General</td>
</tr>
<tr>
<td>Extraterrestrial Environments</td>
</tr>
<tr>
<td>Recycling</td>
</tr>
<tr>
<td>Waste Disposal</td>
</tr>
<tr>
<td>None</td>
</tr>
</tbody>
</table>

Pollution, were listed under Environmental Pollution. However, a few special terms such as Recycling and Conservation were included. This original policy did not include topics grouped by library, although some notes on the major collecting library were included.

Sources consulted for the second subject headings list included: *Library of Congress Subject Headings*, the subject lists from major abstracting and indexing sources such as *Environmental Abstracts*, the *Guide to the NTIS SRIM Service*, and the subject headings used in various bibliographies of environmental books and periodicals (Douville 1992; Interdisciplinary Checklist 1991). Faculty in the Environmental Studies Program were consulted in several meetings about what subject headings they would use to describe their areas of research. This was especially useful for new terminology, jargon, and completeness of coverage, because the faculty in that program had interests ranging from acid rain to the environmental effects of war.

A final list of fifty-three terms in alphabetical order with short descriptions of what they meant in the context of the policy was developed. One of the intents of this list was to make the subject terms easy to locate by a variety of people, not just librarians used to hierarchical term lists and see references. It was thought that a simple alphabetical list with subject scope notes would work best with the audience in mind. However, in the course of the process, it became evident that cross references and term hierarchies were creeping into the list despite the best intentions. Rather than listing terms in a hierarchy, scope notes were used as much as possible to indicate what concepts were included under a main term. See also references were included in the scope notes to indicate when the reader needed to look under additional headings. These scope notes generally started with the word "includes." See references were kept to a minimum. Even a term that is easy to consider as a broader term with subheadings, such as "Pollution," only had a scope note to indicate what was included under it, and had a see also reference to specific types of pollution.

The 1992 revision of the list of subject headings contains new terms that were suggested by researchers active in the
field. Notable additions were Biogeochemistry, Biodiversity, Conservation Biology, and Global Climate Change. The faculty consultants also helped the librarians with distinctions between terms that are closely related, such as Restoration Ecology and Reclamation. The latest revision also reflects different ideas about how to organize the list. The librarians’ tendency to group terms into hierarchies emerged strongly in this revision. For example, two terms that had been main headings, Wildlife Management and Endangered Species, were grouped under Conservation Biology, along with Biodiversity and Restoration Ecology. The total number of main heading terms was reduced to thirty-one, with eight of those having terms listed under them.

The collection assessment was done for the 1989 revision to determine which library was in fact collecting which monographs and serials in the area of environmental studies and at what level. As there is no RLG conspectus for environmental studies that might be used for comparison, the primary source of comparative information was based on serial holdings, published bibliographies, and estimates of the percentage of titles purchased from publishers who emphasize the subjects of interest. For the 1989 assessment, the periodicals list from the Williams College Environmental Studies Library was used, as were various lists of journal titles in environmental studies and sciences, and in related subject areas such as environmental health. Such an assessment was only done for the newly introduced terms during the 1992 revision.

**Developing the Text**

There was a notable change between 1982 and 1992 in the number of departments that expressed an interest in environmental studies. At the time of the first writing, the Thayer School of Engineering and the Biology Department were listed as having an interest in environmental sciences. In contrast, the current policy lists nearly all the science departments. In a new pamphlet titled “Environmental Sciences at Dartmouth” faculty from Chemistry, Earth Sciences, Biology, the Medical School, and the Engineering School are represented.

The text of the policy lists the general subject coverage of each library as it relates to environmental studies and refers to relevant subject policies. (Dartmouth College Library 1992) This is particularly useful in connecting the traditional subject disciplines with this interdisciplinary one.

A section specifying collecting levels, as defined by the RLG conspectus, is a routine part of the collection development policies written at Dartmouth. Collecting levels reflect selection of serial as well as monographic titles. In the case of the environmental studies policy, it seemed useful to also include a note about which library covered which topic, and at what general level. In paper format, the chart is easier to read than a list (see table 2).

**Tracking Interdisciplinary Material**

Because environmental studies materials fall into a wide variety of topics and call numbers, it is impractical to generate electronically a new book or serial list specific to environmental studies. Therefore we are experimenting with coding in our electronic acquisitions database. To encourage tracking of interdisciplinary materials, bibliographers at Dartmouth are expected to code all purchases that fall into pre-specified subjects such as environmental studies, women’s studies, and others. The advantage to this system is that we have a way to track environmentally oriented books and serials throughout the system, so that there is wide input for this collection. The disadvantages are that coding depends on human intervention, codes in our system are only searchable for eighteen months, and items may only carry one code, so a choice must be made if an acquisition falls into multiple categories. We are investigating a more permanent method of flagging environmental studies (and other) material.
TABLE 2

COLLECTION LEVELS CHART (SAMPLE)

<table>
<thead>
<tr>
<th>Terms/Subject Scope Notes</th>
<th>Existing</th>
<th>Current</th>
<th>Desirable</th>
<th>Primary Library</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acid Precipitation</td>
<td></td>
<td></td>
<td></td>
<td>Dana, Baker Gov. Docs.</td>
</tr>
<tr>
<td>Dana collects esp. effects on organisms. Includes: precipitation in air and water, acid deposition, acid rain, factors which influence acid precipitation, the effects of acid precipitation on the environment and organisms; policy issues.</td>
<td>3</td>
<td>3/4</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Agriculture and the Environment</td>
<td>2/3</td>
<td>2/3</td>
<td>3</td>
<td>Dana, Baker Gov. Docs., esp. USDA pubs.</td>
</tr>
<tr>
<td>Food Supply</td>
<td>2</td>
<td>2</td>
<td>3</td>
<td>Baker, Dana</td>
</tr>
<tr>
<td>Includes transportation, distribution; Strong in rice technology</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Feldberg has technological aspects</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pesticides</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Includes effects on the environment, pest resistance to pesticides. See also Health and the Environment.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sustainable Agriculture</td>
<td>2</td>
<td>2/3</td>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>
instance, subscription costs for journals needed consistently by users of more than one library might be split between funds managed by librarians in separate libraries. Duplication of materials is rare and occurs in response to a specific need. Generally, we rely on our statewide online catalog and an efficient library-to-library document delivery program to provide articles or books to patrons. To aid in monitoring the collection, a system to flag books and journals related to environmental studies has been developed using our electronic acquisitions database.

The process of developing the collection policy required that the bibliographers representing the areas most active in environmental studies collaborate on the creation of the policy; the bibliographers involved did represent a wide range of subject areas related to environmental issues. The first step of the process was to identify a list of subject terms. Next, with the help of faculty in the Environmental Studies Program, collections in the dispersed libraries were assessed based on these terms. Because the serial literature is critical in any scientific field, journal titles were evaluated throughout the library system for their importance in the environmental literature, again in consultation with faculty. The research and teaching programs were described for each area. Finally, a tabular format for presenting the information to faculty and other bibliographers was created. In the policy we addressed specifically the interdisciplinary and dispersed nature of this subject and identified primary library locations for books and journals in broad subject areas.

Collection policies are useful only if they are dynamic, updated frequently enough to reflect changes in the disciplines covered as well as the terminology, and are accessible to those requiring detailed collection information (Bostic 1988). Our policies are reviewed every 3–5 years. Because the environmental studies faculty participated in the development of the collection policy, we feel the terminology reflects that of the practitioner.

Now that the most recent revision has been in effect for one year, we plan to evaluate its usefulness to the faculty and also to other bibliographers. Eventually collection development policies may be available and searchable online through the Dartmouth College Information System under the same interface as other bibliographic files and the online catalog. Then users may be able to locate the library that best handles their particular topic within environmental studies by searching the policies. The goal is that the collection development policy will prove useful to users as well as to bibliographers.

**Works Cited**


--- 1993. Personal communication.


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Education for Collection Management: Results of a Survey of Educators and Practitioners

John M. Budd and Patricia L. Bril

Individuals who list collection development as a specialization in the directory of the Association for Library and Information Science Education were surveyed. A sample of members of either the RASD Collection Development and Evaluation Section or the ALCITS Collection Management and Development Section also were surveyed. Recipients of the questionnaire were asked to assess the importance of specific aspects of education for collection development (practitioners also were asked to assess their own educational experiences with regard to collection development). Further, respondents offered their opinions on where the focus of education for collection development should be and what journals they read in order to keep up with issues in collection development. Results from each group of respondents are presented, as well as comparisons between the two groups.

If we accept that the profession of librarianship is evolving, it seems wise to investigate how such evolution is reflected in library education. Libraries and librarians exist in a world forced to deal with change of many sorts, including political, social, demographic, economic, and technological. New developments in all facets of life necessarily have an impact on the nature of library collections. Review of this impact is not the purpose here; rather, we acknowledge that change is continuous and therefore spawns questions relating to collection management. Librarians are working to come to grips with potential alterations to the funding, composition, and use of collections. These are issues essential to collection management today, and they naturally are important to another concern within the library community—education for collection development.

Library education has been faced, especially in recent years, with the dilemma of trying to reconcile its mission of preparing students for a profession and its place in higher education institutions. The attempts at reconciliation are evident in

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 recent writings, such as Lawrence Auld's "Seven Imperatives for Library Educa-
tion" (1990). Some, such as Wiegand (1986), assert that schools have been
driven primarily by practice and have been sensitive and responsive to "those
agencies which employ the overwhelming majority of their graduates" (p. 278).
Many in the profession might regard such an assertion as moot, but there do exist
calls for cooperation between the field and the schools. Lester (1990), for in-
stance, states that "We need to facilitate dialogue between practitioners and edu-
cators, on both aspects of library education's identity" and "we can develop and
promote the concept of education for lib-

However, even with a general lack of
agreement on specific components of li-

What are key characteristics of indi-

1. What are key characteristics of individuals identifying collection develop-
ment as a teaching or research area (rank, position, length of time teach-
ing, length of time at present institu-
tion, possession of tenure, and extent
of work experience in collection de-
velopment)?

2. What are key characteristics of

3. What are key characteristics of prac-
titioners indicating an interest in col-
lection development (institution
where library degree was earned,
age, types and sizes of institutions
where currently employed, extent of

4. In what journals do educators and

5. By what means do educators and

6. How well did master's programs pre-
pare practitioners for certain aspects
of collection development work?
7. How important do educators and practitioners view certain aspects of collection development work?

Because the purpose of this examination was to determine what educators and practitioners saw as important to education for collection development, it was decided that both groups would be surveyed to elicit their opinions. The 1982-93 directory published by the Association for Library and Information Science Education (ALISE) provided a source to identify educators. Each faculty member designates subject areas of teaching and research interests, and collection development is one area that may be so designated. Only faculty affiliated with programs accredited by the American Library Association were included. With this constraint, a total of 92 individuals were identified and surveyed (the figure includes full-time and part-time, including adjunct, faculty). Identifying practitioners working or interested in the area of collection management and development was more challenging. One goal of the study was to include librarians working in a variety of environments. It was determined that the population used would be members of the Collection Development and Evaluation Section (CODES) of the Reference and Adult Services Division and the Collection Management and Development Section (CMDS) of the Association for Library Collections and Technical Services. The membership lists of the two sections were obtained from the American Library Association and were merged to eliminate duplication. A sample was drawn from the membership lists; the sample size was determined by using a formulation developed by Krejcie and Morgan (1970). Application of the formula yielded a sample size of 357. The population was then systematically sampled.

A total of 58 of the 92 educators surveyed (63%) returned questionnaires after an initial mailing and one follow-up mailing. The return rate for practitioners was 44%; 157 of the 357 sent in questionnaires after the first mailing and one follow-up. (Whenever directories are used to obtain individuals' addresses there is the possibility that people have moved or, for some reason, cannot be reached at the address given. This can limit return rates.) The CODES and CMDS lists presented some other difficulties. For instance, institutional memberships in the sections had to be ignored. Also, some individuals returned uncompleted questionnaires, noting that they did not work in, or have a particular interest in, collection development. Apparently some individuals establish membership in a section because of the ability to do so without charge.

**FINDINGS**

As is stated above, the educators surveyed included individuals who were full-time faculty members, as well as some who teach on a part-time basis. Most of the educator respondents (41, or 70.7%) were affiliated full-time with schools; the remainder (17, 29.3%) had part-time, visiting, or adjunct appointments. A total of 17.2% (10) of the educators responding held the rank of assistant professor, 29.3% (17) were associate professors, and 25.9% (15) were professors. Sixteen, or 27.6% held other ranks, such as lecturer or instructor. There was a fairly broad distribution of time spent teaching, time at the present school, and experience in collection development work. These three distributions are presented in table 1, by numbers of years of experience.

Thirty-two (55.2%) of the respondents reported that they do have tenure; 26 (44.8%) say they do not.

The next set of questions asked of educators related to the kinds of courses offered by their schools. Because these questions pertained to programs rather than individuals' perceptions of issues relevant to collection management, the responses were collapsed for these questions only in order to illustrate the current practice within schools of library and information science. First, respondents were asked whether a separate collection development and management course was required as part of the school's curriculum. Respondents from 33 programs are represented, 16 (48.5%) said yes and 17 (51.5%) indicated that a course was not
TABLE 1
TEACHING EXPERIENCE, TIME AT PRESENT SCHOOL, AND AMOUNT OF COLLECTION DEVELOPMENT EXPERIENCE OF EDUCATORS

<table>
<thead>
<tr>
<th>Years</th>
<th>Teaching Experience</th>
<th>Present School</th>
<th>Col. Dev. Experience</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No.</td>
<td>%</td>
<td>No.</td>
</tr>
<tr>
<td>0-2</td>
<td>5</td>
<td>8.6</td>
<td>10</td>
</tr>
<tr>
<td>3-5</td>
<td>13</td>
<td>22.4</td>
<td>15</td>
</tr>
<tr>
<td>6-10</td>
<td>11</td>
<td>19.0</td>
<td>13</td>
</tr>
<tr>
<td>11-15</td>
<td>5</td>
<td>8.6</td>
<td>4</td>
</tr>
<tr>
<td>16-20</td>
<td>10</td>
<td>17.2</td>
<td>8</td>
</tr>
<tr>
<td>21+</td>
<td>14</td>
<td>24.1</td>
<td>7</td>
</tr>
<tr>
<td>Totals</td>
<td>58</td>
<td>100.0</td>
<td>57</td>
</tr>
</tbody>
</table>

*Due to rounding

required. When asked whether the school offers a separate elective course, 19 of 30 responding (63.3%) stated that such a course was offered and 11 (36.7%) answered negatively. Educators were also asked whether an advanced course, designed to build upon an introductory required or elective course, was offered. Only those from 7 of 32 schools (21.9%) responded in the affirmative; 25 (78.1%) said that no such course exists at their school. Lastly, individuals were asked whether collection development and management was integrated into other courses. Respondents from 28 of 33 programs (84.8%) indicated that such integration exists and five (15.2%) stated that it does not. Type-of-library courses (academic, public, etc.) were mentioned most frequently as those in which collection development was included.

Practitioner respondents displayed considerable diversity of characteristics; a goal in designing this study was to include librarians from many backgrounds. Most of those responding had been working in libraries for quite some time. The median year in which respondents earned the master’s degree is 1976. Many of those returning questionnaires were in the middle of their careers: 3, or 1.9%, were under 30 years of age; 34, or 21.7%, were from 31 to 40; 78 (49.7%) were from 41 to 50; 30, or 19.1% were from 51 to 60; and 12, or 7.6%, were over 60 years old. It might be expected that academic librarians are more likely to be members of CODES or CMDIS, and so be more heavily represented in the sample. Based on the respondents, this expectation was borne out. Of the 154 indicating the type of library at which they were employed, a total of 92 (59.8%) were academic librarians. Of these, 68, or 44.2%, worked in university libraries; 20, or 13.0%, in college libraries; and 4, 2.6%, in junior and community college libraries. Thirty-nine respondents (25.3%) were public librarians and 21 (13.6%) were special librarians. Only 2 (1.3%) indicated that they worked in a school library media center.

The distribution of respondents according to the size of the library at which they worked, while not uniform, is fairly even. More worked in small libraries than in any other size; 44, or 28.8% of the 153 responding to this question, were in libraries with collections numbering fewer than 150,000 volumes. Twenty-five (16.3%) worked in libraries with collections in the 150,000 to 300,000 volume range. Twenty-nine, or 19.0%, were in organizations that housed 300,000 to 1,000,000 volumes. Thirty-four (22.2%) worked in libraries with 1,000,000 to 3,000,000 volumes, and 21 (13.7%) were in libraries with collections greater than 3,000,000 volumes.

The majority of those sending in questionnaires reported spending a portion of
their time engaged in collection development work. Forty-six, or 29.9% of the 154 responding to this question, spent 11 to 20% of their time on collection development; 20, or 13.0%, reported each of the following time allotments: 21 to 40%, 41 to 60%, and greater than 60%. There were a number of individuals who spent relatively little time on the activity: 48 (31.2%) spent none to 10% of their time doing collection development. However, with almost 70% spending more than 10 percent of their time on collection development, one expectation is that this group of respondents was familiar with important aspects of the function. This belief is also supported when years of experience working with collection development is examined. A total of 156 answered the question relating to experience; only 16, or 10.3%, reported having under three years experience. Twenty-four (15.4%) had three to five years of work experience; 36 (23.1%) had 6 to 10 years; 25 (16.0%) had 11 to 15 years; 31 (19.9%) had 16 to 20 years; and 24 (15.4%) had 21 years or more of collection development experience. It is assumed that this experience forms the basis for assessments of the importance of specific aspects of education for collection development.

Both educators and practitioners were asked to indicate which journals they read to find literature on aspects of collection development and management. Educators listed 36 journals; practitioners mentioned a total of 43. The top 10 noted by each group are listed in Table 2.

There is obviously some discrepancy in these highly-ranked journals, although the top three (not in the same order) are common to both groups. Seven journal titles appear on both lists. If anything can be said, in general, about the journals unique to one list, it might be that those appearing on the practitioner list tend to be practice oriented. For instance, *Publishers Weekly* and *Choice* have value as selection aids. *School Library Journal* appears on the educator list, but school librarians are scarcely represented among practitioner respondents.

**TABLE 2**

| JOURNALS READ IN ORDER TO FIND INFORMATION ABOUT COLLECTION DEVELOPMENT/MANAGEMENT |
|-----------------------------------------------|-----------------------------------------------|
| **Journal Title**                         | **Educators** | **Rank** | **Times Mentioned** | **Practitioners** | **Rank** | **Times Mentioned** |
|-----------------------------------------------|-----------------------------------------------|
| *Collection Management*                    | 1                                              | 31       | 3                        | 34                        |
| *College & Research Libraries*               | 2*                                             | 22       | 2                        | 49                        |
| *Library Journal*                           | 2*                                             | 22       | 1                        | 62                        |
| *Collection Building*                       | 4                                              | 19       | —                        | —                        |
| *Library Resources & Technical Services*     | 5                                              | 17       | 8*                       | 21                        |
| *Library Acquisitions: Practice and Theory*  | 6                                              | 16       | —                        | —                        |
| *Journal of Academic Librarianship*         | 7                                              | 11       | 4                        | 28                        |
| *American Libraries*                        | 8                                              | 10       | 8*                       | 21                        |
| *School Library Journal*                    | 9                                              | 8        | —                        | —                        |
| *Wilson Library Bulletin*                   | 10                                             | 6        | 5*                       | 23                        |
| *Publishers Weekly*                         | —                                              | —        | 5*                       | 23                        |
| *RQ*                                         | —                                              | —        | 7                        | 22                        |
| *Choice*                                     | —                                              | —        | 10                       | 19                        |

*Indicates a tie.
TABLE 3
MEANS BY WHICH COLLECTION DEVELOPMENT AND MANAGEMENT SKILLS OR KNOWLEDGE SHOULD BE ACQUIRED

<table>
<thead>
<tr>
<th>Means</th>
<th>Mean Rank by Educators</th>
<th>Mean Rank by Practitioners</th>
</tr>
</thead>
<tbody>
<tr>
<td>Separate required course in library school</td>
<td>1.56</td>
<td>2.59</td>
</tr>
<tr>
<td>Integration into other courses in library school</td>
<td>2.97</td>
<td>3.13</td>
</tr>
<tr>
<td>Separate elective course in library school</td>
<td>3.06</td>
<td>3.75</td>
</tr>
<tr>
<td>Internships or other practical experience as part of a student's curriculum</td>
<td>3.79</td>
<td>3.96</td>
</tr>
<tr>
<td>On-the-job training (apart from or after library school)</td>
<td>4.11</td>
<td>3.10</td>
</tr>
<tr>
<td>Attendance at institutes, workshops, etc. (apart from or after school)</td>
<td>4.51</td>
<td>4.39</td>
</tr>
</tbody>
</table>

Mean rank determined by recording each time the item is ranked by respondent on a scale of 1 to 7 (with 1 being most important), multiplying the number of mentions by the rank (1 times no. of times mentioned, 2 times no. of times mentioned, etc.), then dividing by the total number of individuals ranking that item.

Next, individuals in both groups were asked by what means they thought collection development and management skills or knowledge should be acquired. It should be noted that this question relates to desired means and might not reflect how practitioners acquired knowledge or how programs are currently structured. Respondents were given six options, and were free to offer any alternative means they wished. The six options, along with mean ranks for educators and practitioners, appear in table 3.

It should be noted here that very few respondents exercised the option of specifying additional criteria, so the rankings listed in the table were not affected to a great extent by these responses. The primary difference in the rankings by the two groups is a striking one. Both groups ranked “Separate required course” highest; educators ranked “Integration into other courses” next highest, but practitioners ranked “On-the-job training (apart from or after library school)” second. Twenty-two practitioners ranked “On-the-job training” highest; no educator gave this choice a top ranking. This seems to mark a difference of opinion between the two groups of respondents regarding how one should learn about collection development. The difference seems to imply a much more substantial reliance by practitioners than by educators on post-master’s work experience as a means of learning about collection management. It also seems interesting to observe that, while practitioners and educators disagreed about the importance of on-the-job training, there was little disagreement regarding practical experience, such as internships, structured as part of students’ curricula. While practitioners placed considerable import on post-master’s work, they expressed relatively little enthusiasm for work as part of the master’s program.

To carry the analysis of the rankings a bit further, of the 41 educators ranking “Separate required course,” 32, or 78%, listed it highest in importance. Of the 104 practitioners ranking the same criterion, 50 (48.1%) stated that it was first in importance. Also, 40 of the educators ranked one of the six criteria first; those ranking “Separate required course” first account for 80% (32 respondents, as noted above) of the total. Correspondingly, 105 practitioners listed one of the criteria first; the percentage so ranking “Separate required course” is 47.6 (50 respondents). The importance placed on a required course by educators is summed up in one individual’s comment: “In my ideal curriculum, all students would be required to take a course in collection development, management, maintenance, and other ‘macro’ matters; everyone would have to take a selection course which would include all formats and emphasize evaluation” (emphasis in original).
Much of the content of the questionnaires sent to educators and practitioners pertained to specific aspects of education for collection development. Practitioners were asked to rate how well their master’s education prepared them for these aspects of collection development and management. Respondents were asked to rate the items according to a scale of 1 to 6, with 1 being “Not Well” and 6 being “Extremely Well.” The results of the ratings of each of the aspects are listed in table 4.

As can be seen, most of the ratings are near the middle of the range, with “Ability to identify and use key materials selection sources” receiving the highest mean rating and “Knowledge of non-traditional (e.g., electronic) publishing processes” receiving the lowest. One reason the latter aspect received a low rating is that such processes were either less well developed or virtually non-existent at the time these respondents earned their degrees and, therefore, unlikely to have been included in their library education programs.

Finally, the respondents from each group were asked to give their perceptions of the importance of the same aspects of collection development and management. The scale of possible responses is, again, 1 to 6, with 1 being “Not Important” and 6 being “Extremely Important.” Practitioners’ responses are listed in table 5; educators’ responses are listed in table 6.

Just as practitioners rated “Ability to identify and use key materials selection sources” highest in terms of their master’s preparation, so too did they rank the item as most important. Practitioners viewed
Table 5: Practitioners' Views of Importance of Specific Aspects of Course Instruction

<table>
<thead>
<tr>
<th>Aspects of Course Instruction</th>
<th>Mean</th>
<th>St. Dev.</th>
<th>Median</th>
</tr>
</thead>
<tbody>
<tr>
<td>Knowledge of history of col. dev.</td>
<td>3.013</td>
<td>1.214</td>
<td>3</td>
</tr>
<tr>
<td>Knowledge of current issues in col. dev.</td>
<td>5.248</td>
<td>0.837</td>
<td>5</td>
</tr>
<tr>
<td>Ability to identify and use key materials selection sources</td>
<td>5.478</td>
<td>0.821</td>
<td>6</td>
</tr>
<tr>
<td>Knowledge of the traditional publishing process</td>
<td>4.261</td>
<td>1.057</td>
<td>4</td>
</tr>
<tr>
<td>Knowledge of non-traditional publishing (e.g., electronic)</td>
<td>4.631</td>
<td>0.989</td>
<td>5</td>
</tr>
<tr>
<td>Ability to conduct a needs assessment/community analysis</td>
<td>4.822</td>
<td>1.233</td>
<td>5</td>
</tr>
<tr>
<td>Knowledge of materials vendors and jobbers</td>
<td>4.726</td>
<td>1.078</td>
<td>5</td>
</tr>
<tr>
<td>Knowledge of the traditional book acquisitions process</td>
<td>4.490</td>
<td>1.066</td>
<td>5</td>
</tr>
<tr>
<td>Knowledge of serials acquisitions and control</td>
<td>4.618</td>
<td>0.971</td>
<td>5</td>
</tr>
<tr>
<td>Understanding of copyright and other related legal issues</td>
<td>4.624</td>
<td>1.028</td>
<td>5</td>
</tr>
<tr>
<td>Ability to write a collection development policy</td>
<td>5.000</td>
<td>1.092</td>
<td>5</td>
</tr>
<tr>
<td>Knowledge of budgeting practice</td>
<td>5.153</td>
<td>0.995</td>
<td>5</td>
</tr>
<tr>
<td>Awareness of cooperation and resource sharing possibilities</td>
<td>4.955</td>
<td>1.052</td>
<td>5</td>
</tr>
<tr>
<td>Ability to evaluate collections according to established techniques</td>
<td>5.089</td>
<td>0.976</td>
<td>5</td>
</tr>
<tr>
<td>Knowledge of preservation techniques</td>
<td>4.108</td>
<td>1.185</td>
<td>4</td>
</tr>
</tbody>
</table>

“Knowledge of the history of collection development” as less important than the other items. Educators agreed in their ratings that history is not as important as other aspects of collection development. The most important aspect to educators was “Knowledge of current issues in collection development.”

Some further analysis is possible at this point. One question that arises is how the characteristics of educators and practitioners correlate with their assessments regarding the specific aspects of collection development. Beginning with the educator group, the characteristics of rank, length of time teaching, length of time at the present school, and number of years of professional experience with collection development can be correlated with the listed aspects. Using Pearson's product-moment correlation, it is evident that no strong correlation exists. There are, however, some statistically significant correlations (p < .01) between one of the characteristics, years of experience with collection development, and the following aspects of collection development: history (r = .4149), current issues (r = .4267), knowledge of the traditional publishing process (r = .3374), knowledge of materials vendors and jobbers (r = .3359), knowledge of the traditional book acquisitions process (r = .3157), knowledge of serials acquisitions and control (r = .3456), knowledge of budgeting practice (r = .4249), and knowledge of preservation techniques (r = .4063). This means that those respondents with more years of work experience were a bit more likely to rate these variables as more important. It should be emphasized, though, that the correlations are not strong and that the
TABLE 6

FACULTY VIEWS OF IMPORTANCE OF SPECIFIC ASPECTS OF COURSE INSTRUCTION

<table>
<thead>
<tr>
<th>Aspects of Course Instruction</th>
<th>Mean</th>
<th>St. Dev.</th>
<th>Median</th>
</tr>
</thead>
<tbody>
<tr>
<td>Knowledge of history of col. dev.</td>
<td>3.017</td>
<td>1.277</td>
<td>3</td>
</tr>
<tr>
<td>Knowledge of current issues in col. dev.</td>
<td>5.638</td>
<td>0.613</td>
<td>6</td>
</tr>
<tr>
<td>Ability to identify and use key materials selection sources</td>
<td>5.293</td>
<td>0.899</td>
<td>6</td>
</tr>
<tr>
<td>Knowledge of the traditional publishing process</td>
<td>4.310</td>
<td>1.231</td>
<td>4</td>
</tr>
<tr>
<td>Knowledge of non-traditional publishing (e.g., electronic) processes</td>
<td>4.534</td>
<td>1.127</td>
<td>4.5</td>
</tr>
<tr>
<td>Ability to conduct a needs assessment/community analysis</td>
<td>4.655</td>
<td>1.396</td>
<td>5</td>
</tr>
<tr>
<td>Knowledge of materials vendors and jobbers</td>
<td>4.552</td>
<td>1.142</td>
<td>5</td>
</tr>
<tr>
<td>Knowledge of the traditional book acquisitions process</td>
<td>4.138</td>
<td>1.115</td>
<td>4</td>
</tr>
<tr>
<td>Knowledge of serials acquisitions and control</td>
<td>4.207</td>
<td>1.348</td>
<td>4</td>
</tr>
<tr>
<td>Understanding of copyright and other related legal issues</td>
<td>4.500</td>
<td>1.405</td>
<td>5</td>
</tr>
<tr>
<td>Ability to write a collection development policy</td>
<td>5.000</td>
<td>1.243</td>
<td>5</td>
</tr>
<tr>
<td>Knowledge of budgeting practice</td>
<td>4.379</td>
<td>1.485</td>
<td>5</td>
</tr>
<tr>
<td>Awareness of cooperation and resource sharing possibilities</td>
<td>4.845</td>
<td>1.268</td>
<td>5</td>
</tr>
<tr>
<td>Ability to evaluate collections according to established techniques</td>
<td>5.069</td>
<td>1.153</td>
<td>5</td>
</tr>
<tr>
<td>Knowledge of preservation techniques</td>
<td>3.931</td>
<td>1.226</td>
<td>4</td>
</tr>
</tbody>
</table>

coefficient of determination for the strongest of these (current issues) is quite weak ($r^2 = .1821$).

Analysis thus far has been descriptive. There are, however, some hypotheses that can be formulated, based on questions central to the nature of the surveys. Specifically, two sets of hypotheses can be formulated. One set centers on the assessments of aspects of collection development by practitioners. These individuals rated their own educations according to the listed aspects and they rated the importance of the same aspects. The question to be asked is how do the means of each rating for each aspect compare. Stated as a null hypothesis, the following can be tested: There is no statistically significant difference between the mean rating of each aspect of collection development with regard to the respondents' master's education and the mean of the same aspect with regard to the perceived importance of that aspect. The paired t-test can be used to test this hypothesis. For each aspect, the difference is, in fact, statistically significant ($p < .01$); therefore, the null hypothesis is rejected for each aspect. One respondent writes,

As you can see, there is a painfully obvious gap between what I learned in library school and what I needed to know about collection development in order to do my job. This is due partly to the fact that I did not take the one elective course on collection development offered by my library school because I did not then anticipate becoming a bibliographer. However, even the course I did take held shamefully little relevance to any of the activities I now perform as a professional librarian.
importance of the factors is, no doubt, due to when they completed their programs. As was stated earlier, some aspects of collection management are of relatively recent origin. Nonetheless, the gap between the respondents’ assessments of their educational experiences and the importance they ascribed to the aspects of collection development is important and should be incorporated into an overall evaluation of library education and planning for the future.

The second set of hypotheses has to do with the assessments of importance of the aspects by both practitioners and educators. So, how do the means of the assessments of importance by both groups compare? The null hypothesis is as follows: There is no statistically significant difference between the mean rating of each aspect of collection development with regard to perceived importance by practitioners and by educators. The t-test for independent samples can be employed to test this hypothesis. The null hypothesis can be rejected for only three of the aspects: current issues (p < .01), knowledge of the traditional book acquisitions process (p < .05), and knowledge of serials acquisitions and control (p < .01). With twelve of the fifteen aspects, educators and practitioners were in agreement with regard to the level of importance.

**Summary**

It is evident from the results of the study that both educators and practitioners believe that there is much that is important about education for collection development. In fact, the two groups have largely consistent views of the importance of specific aspects of collection development and management. To speculate a bit, there are two possible reasons for the agreement: first, the vast majority of those teaching collection development in library education programs tend to have substantial work experience in collection development; secondly, those teaching on a part-time or adjunct basis might well be practitioners working in collection development. Even though perceptions about importance are, for the most part, congruent, practitioners believe that their educational experiences fall short of their assessments of the importance of the listed aspects of collection development. Each group could probably learn from these data. Practitioners need to be aware of the diversity of student populations and to realize that one course in collection development and management will, perforce, have to deal with several types and sizes of libraries and that not all possibilities of local practice can be anticipated. Educators need to be in touch with current practice in order to understand the media and technology of information, the political and financial settings of libraries, and the impact of the external environment on the development and evaluation of collections and on access to information.

One area of apparent disagreement between educators and practitioners is the means by which collection development and management skills and knowledge should be acquired. Practitioners place more stock in on-the-job training than do educators. It seems a bit contradictory that the practitioners, who see the work environment as contributing so centrally to a librarian’s education, do not rate more highly the place of internships or other practical experience as part of a student’s curriculum. The disagreement here might be used to spur discussion of the need for more practice-based continuing education opportunities for practicing librarians with collection development responsibilities. There might also be a need for continuing education for faculty teaching in this area. Existing continuing education mechanisms might eventually be broadened to include education for, as well as practice of, collection management.

It is hoped that this study provides an opening for communication between those working in collection development and management and those teaching related courses in library education programs. Hints at areas for potential cooperation are evident in some comments offered by respondents. One practitioner
writes, "With limited budgets growing ever tighter I feel that the issues pertaining to collection development are subjects that all librarians should be knowledgeable of—to provide balance, offer resources needed by the community, stimulate creative solutions, make the best decisions for the environment." One educator expresses a general agreement with the foregoing statement, along with a concern for the curricular place of collection development.

I think [collection development] is extremely valuable, but the two schools I've taught in de-valued it and were phasing it out as too traditional . . . . Developing collections which actually serve the entire community . . . is a librarian's highest calling. It does not matter whether that collection is in paper or electronic images, the principles and the responsibilities are the same.

These two remarks suggest a possible conflict between an educational need in the area of collection management and a de-emphasis of it as a pedagogical function. While collection development and management might be perceived as "too traditional," reports of its death might be exaggerated. William Robinson (1993) reports that the number of job announcements per year doubled between 1980 and 1991, at least in College & Research Libraries News. The challenge ahead is for educators and practitioners to listen to one another and build on the agreement that is apparent from this study. All engaged in collection management work, and indeed all in the profession, need to come to an appreciation of the nature and purpose of the collection (regardless of medium, scope, level, etc.) and the practice of building a system of access to information.

**Works Cited**


Sometimes the right partner can make

a world of
difference...

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ACADEMIC SERVICES
700 Black Horse Pike; Suite 207
Blackwood, NJ 08012

READMORE CANADA
P.O. Box 119,
Milbrook, Ontario,
Canada LOA 1GO
Manifestations and Near-Equivalents of Moving Image Works: A Research Project

Martha M. Yee

The frequency of occurrence of moving image versions, here called manifestations, on the types of differences that can occur from one moving image manifestation to another, and on the kinds of visible indicators, accessible to catalogers, that are associated with these differences was measured. It was found that continuity, i.e., intellectual and artistic content, varies frequently, 39% of the time; an additional 7% of works have added subsidiary matter, and an additional 12% of works have differences in language and soundtrack. In other words, a total of 58% of the works sampled had at least one instance of difference in intellectual and artistic content between two items. Only 8% of the works in the sample were mentioned as having manifestations in standard reference sources such as Maltin. Visible indicators and physical format of films are very unreliable indicators of actual difference in intellectual and artistic content; 48% of the time, visible indicators vary with no underlying difference in continuity; 23% of the time, continuity varies with no difference in visible indicators. Length differences of three minutes or more are the most reliable indicators of actual difference in intellectual and artistic content. Of the titles with difference in continuity, 72% of these manifestations were detectable by means of length difference. This corresponds to previous findings for books, which indicate paging is the most reliable indicator of true differences in manifestation.

The research problem discussed here concerns motion picture versions or editions. The recent restoration of footage to and reissue of films such as Lawrence of Arabia (1962) and Intolerance (1916) have alerted the public to a situation that film scholars have known about for a long time—that films exist in different versions or editions (here called manifestations) just as books do. The research described here was designed to determine (1) how frequently moving image works exist in multiple manifestations, (2) what visible indicators such manifestations tend to
present to catalogers in archives and libraries to allow them to recognize differences between two manifestations and to enable them to describe these manifestations for users of their collections, and (3) how often the visible indicators are misleading.

Certain definitions are needed at the outset. A moving image work is any work that is composed of visual images that move; examples are motion pictures and video recordings. The term *manifestation* is used here instead of the more common term *version* in order to achieve greater precision in terminology. *Manifestation* means a version of a work with significant difference from another version of the same work; an example would be a restored version with footage that is not present in the versions that were commonly seen prior to the restoration. Until recently, the term *version* was always used with this meaning. However, in the last several years, some catalogers in the library community have begun to use the term *version* to refer to a copy of a particular manifestation of a work in another physical format, e.g. a microform copy of a particular edition of a textual work, which will here be called *near-equivalent*. *Item* is used here to mean a particular film or videorecording that is being examined to determine what work and what manifestation of that work are represented. *Physical format* refers to the actual material housing for a manifestation of a work.

The time is ripe for scholars in the film field to develop scholarly techniques similar to those practiced in the branch of literary scholarship known as textual criticism. By effective communication about extant manifestations, catalogers could help support the development of such techniques. Textual criticism deals with fashioning definitive editions of an author's work based on examination of physical evidence found in the actual published editions and issues in order to determine the author's original intent (Gaskell 1972, 336). Equivalent scholarly methods have not yet been developed for the relatively new film art form. However, restoration projects have already begun that have defined the concept of original manifestation implicitly, as will be demonstrated in the following review of such projects. (See Slide [1992, 110] for a discussion of the difference between restoration and preservation.)

Some projects implicitly define original manifestation as the state the film was in at the time of original release. *Intolerance* (1916), *Way Down East* (1920), *Lost Horizon* (1937), *Lawrence of Arabia* (1962), and *A Star is Born* (1954) were restored to as close to the original release state as possible, including, in some cases, use of stills to represent missing scenes (Everson 1990, Gunn ing 1984, Haver 1983, Holt 1984, Rothman 1989, Stanbrook 1989). However, some critics, apparently following *auteur* theory, argue that restoration ought to attempt to discover the director's intent. The original release manifestation of *Lawrence of Arabia* (1962) was also the director's cut. However, the two don't always coincide so conveniently. Everson argues that the fact that Griffith later re-edited *Intolerance* (1916) is evidence that the original release manifestation did not correspond to the director's intent (Everson 1990); such an argument implies that Everson considers the director's final intent as the proper aim of restoration. The original release manifestation of *A Star is Born* (1954) was not necessarily exactly as Cukor would have liked it, either; it included the "Born in a Trunk" number, for example, which had been added prior to release but after Cukor had considered the film to be finished (Haver 1988, 190; Taylor 1985a, 34). *Blade Runner* presents an interesting case. In 1991, Warner Bros. rereleased, as "the original director's version," a print that was closer to Ridley Scott's original version than the original release. However, it was repudiated by Scott, who, in 1992, released the true director's cut, with a unicorn scene he had been forced to cut by his financial backers (Turan 1991, Turan 1992). Taylor seems to agree with Everson, considering the aim of restoration to be "restoration of a major filmmaker's final considered intention" (Taylor 1985a, 34). This is surely a problematic
position to defend, however, in a field in which corporate-created art is so prevalent. Schatz’s argument that producers and studio executives were the authors of their films (Schatz 1988) could be used to construct an auteur-based argument for considering the original release manifestation to be the definitive manifestation. Louis B. Mayer put the same argument somewhat more entertainingly when he said, “When you have a good story, the right star and a smart producer; ... then any director with a brain and two months’ experience could shoot the blasted thing.”

Other restoration projects seem to assume that the longest possible manifestation is desirable. Napoleon (1927) was originally released in three different manifestations: an abridged three-hour manifestation, a widely shown two-hour manifestation, and a full six-hour manifestation. Kevin Brownlow restored it to the longest original release manifestation (Abel 1982, Alexander 1989, Brownlow 1981, Everson 1981). Gance, like Griffith, created several later manifestations of Napoleon (1927). It would seem that if director’s intent were to be the aim of future restoration projects, a method for discovering director’s intent would have to be developed that dealt with changes in the director’s intent.

Universal’s restoration of Frankenstein (1931) seems to define original manifestation implicitly as the longest, as they restored a sequence that had been dropped prior to release, at Laemmle’s orders; they were not aiming at director’s cut, apparently, as they did not restore the sad ending preferred by Whale (Blyeau 1986). The reconstruction of The Physician of the Castle (1908) also involved putting together the longest possible film from all available footage (Salt 1985). This can be dangerous, however; Enno Patalas, the German archivist, located almost twenty minutes of footage that did not exist in any known print of New Babylon, a Soviet film by Trauberg and Kosintsev. He created a restoration of the film that included this footage. When Patalas showed Trauberg his restoration in Moscow, Trauberg indicated that this was material he had purposefully cut from the film prior to its release because he considered it inferior. He was quite annoyed that Patalas had replaced it.

Some seem to feel that the “best” manifestation ought to be chosen for restoration. Lost Horizon (1937) was three hours long pre-release, was released at 132 minutes, and then trimmed to 116 minutes for general release, then released again in 1942 at 108.5 minutes. Stanbrook argues that the film ought not to have been restored to the 132-minute original release manifestation, but to the 116-minute later release manifestation, because he feels it plays better, and Capra, the director, apparently agreed (Stanbrook 1989, 29; Capra 1972, 220–221).

Several film restorers have attempted to use logic and experience to restore original manifestations. Eileen Bowser uses logic to argue that a particular sequence of scenes is likely to be the original release sequence of A Corner in Wheat (1909) (Bowser 1976). The Bargue’s Tale and Queen Kelly (1929) represent attempts to restore manifestations that were never created (Brownlow 1984, Koszarski 1985, Milne 1985, Taylor 1985b).

Preservation decision making is complicated when a film was simultaneously released in more than one manifestation, as in the case of Napoleon (1927) discussed above. The Big Trail (1930) was released in both a 70 millimeter manifestation and a 35 millimeter manifestation that had been shot simultaneously; the 70 millimeter manifestation used different takes from different cameras than the 35 millimeter manifestation. The Museum of Modern Art restored the 70 millimeter manifestation but took some sound from the 35 millimeter manifestation (Haver 1986). An implicit preference for the rarer, more expensive, more spectacular manifestation seems in evidence here.

It might well be that the most useful approach would be to restore and preserve all versions when more than one exists. Preservation of all versions would allow scholars and researchers to view all versions and make up their own minds about which is preferable. Preservation of
all versions would also mean, however, that scarce preservation dollars would pay for preserving even fewer titles.

This debate surrounding film restoration projects might indicate that the time is ripe to develop scholarly techniques analogous to those of textual criticism in the literary field. For this to occur, the following are among the issues that need scholarly discussion. What physical evidence is available to reveal the “printing” and distribution history of a film work? How reliable is it? What are the dangers of misinterpretation to be avoided? What types of documentary evidence, such as studio records and personal papers, are available? Where can they be found? How reliable are they? What are the dangers of misinterpretation of documentary evidence to be avoided? Is there such a thing as a “definitive manifestation” for film, or should the term definitive perhaps be applied to a set of manifestations, including original release manifestation and director’s cut? For director’s cuts, how should director’s intent be determined? Should latest intent be preferred? Can the original release manifestation be considered to embody the studio’s “intent”?

The development of cataloging methods that can communicate to scholars the existence of various manifestations of a work in the archives of the world, can help to further the development of scholarly approaches to film similar to those of textual criticism and descriptive bibliography for texts.

The research described here is also important because it demonstrates the frequency of unlabeled manifestations. Film creators are increasingly concerned about various manifestations of their films circulating without any indications on the title frames about the relationship of the manifestation to the film as originally released. In 1988, the National Film Preservation Act was passed, requiring that “no person shall knowingly distribute or exhibit to the public a materially altered version of a film included in the National Film Registry unless the version is labeled [as follows]: . . . This is a materially altered version of the film originally marketed and distributed to the public. It has been altered without the participation of the principal director, screenwriter, and other creators of the original film” (United States 1988). Unfortunately, this law applies only to the twenty-five titles added to the National Film Registry each year, and the regulations were first rendered toothless by the Librarian of Congress (Wharton 1990) and then dropped altogether at the time of renewal of the law (Wharton and McBride 1992, AMIA 1992). Now, however, a new effort has been launched to create a law requiring labeling (Wharton 1992c, Bollek 1992). Such activities present evidence of a growing concern on the part of film creators and the public and suggest that labeling in the cataloging for all such manifestations of films held by archives would be useful to archive patrons. Unfortunately, the fact that the labeling requirements were opposed so vigorously by the industry indicates it will be a long battle to get adequate labeling on the films themselves (Harwood 1990, Wharton 1991, Wharton 1992a, Wharton and McBride 1992). (Admittedly, archives themselves rarely adequately label their own reconstructed manifestations created in the process of preservation.)

The research can also help in determining how best in the cataloging rules to deal with manifestations. The fact that film works exist in different manifestations has been taken into account for the first time in film cataloging rules in Archival Moving Image Materials: a Cataloging Manual, or AMIM, compiled by Wendy White-Hensen and published by the Motion Picture, Broadcasting and Recorded Sound Division of the Library of Congress in 1984. AMIM prescribes creating a new catalog record for a “version with major changes,” but calls for describing several “versions with minor changes” on the same record. However, the difference between “major” and “minor” change is never defined, and catalogers are given no guidance as to what indicators to look for to decide whether “major” or “minor” change has taken place between one item and another representing the same film.
work. The *FIAF Cataloguing Rules for Film Archives*, published by the Federation Internationale des Archives du Film (FIAF) follows AMIM in the treatment of “versions with major changes” and “versions with minor changes,” and gives considerably more guidance to the cataloger than does AMIM (FIAF 1991). However, no research has yet been done on the types of difference that can occur from one film manifestation to another, and the kinds of indicators accessible to catalogers that are associated with these differences. Also, while it is known that films exist in different manifestations, it is not known how frequently they do, and thus the extent of the problem is not known. If it is very uncommon for films to exist in various manifestations, perhaps elaborate measures need not be taken to deal with the problem, or perhaps elaborate measures need to be taken only in these rare cases.

Multiple manifestations present particularly difficult problems for large databases that contain records from many different sources. There has been increasing concern at the OCLC Online Computer Library Center, Inc. over the growing size of the database, and over the increasing number of cases in which multiple records have been input that probably represent the same manifestation of a given work. It is becoming increasingly difficult for interlibrary loan clerks to locate the manifestation requested by a library user, for acquisitions clerks to locate the correct manifestation to order, and for copy catalogers to locate the correct record to use to catalog a particular item. As a result of this concern, OCLC has recently rewritten its guidelines on when to input a new record, in an attempt to cut down on the number of records input that are near duplicates of records already in the database (Saylor 1988; OCLC 1993, 37–49). The growing output of videocassettes of films in the last twenty years has contributed to the problem. For example, there are seven records in the OCLC database for *Patton* (1970) as distributed on videocassette by CBS/Fox Video; the records differ only in their dates, 1970 to 1986. The question arises, Are these seven videocassettes different from one another in any significant way that justifies maintaining seven separate records in OCLC’s database?

The research presented here includes an investigation of the degree to which difference in physical format, such as that involved in the transfer from film to video, is associated with difference in the intellectual and artistic content of a moving image work, i.e., a difference in manifestation. The library world is currently wrestling with this question. The Multiple Versions Forum, sponsored by the Council on Library Resources and organized by the Library of Congress, was held in December 1989 and was charged with recommending a better solution to the problem of how to describe near-equivalents, or copies of a particular manifestation of a work in different physical formats—a better practice, that is, than the current one of making a new record for every difference in physical format (Multiple Versions Forum 1990). As can be imagined, the current practice is clogging the national databases with multiple records for items that contain the same intellectual and artistic content. The Forum recommended a solution, involving the use of the USMARC holdings format to make possible the description of both the original and the near-equivalents in one catalog record.

However, the Multiple Versions Forum referred back to the library field the decision as to how broadly to apply this technique. The library world decided to take a conservative approach at first, and the technique of recording near-equivalents in a holding format will be applied only to reproductions (American Library Association 1992). For example, when an institution makes a videorecording of a film for conservation purposes, this videorecording will now be considered a near-equivalent that can be described on the same catalog record as the original. However, the conservative approach still leaves many questions unaddressed: When the rights for videocassette distribution of a film are sold, does the mere
fact of distribution as a videocassette by a new distributor create a new manifestation of the film work, if the intellectual and artistic content of the film is not altered? (The definition of edition in the Anglo-American Cataloguing Rules, 2d ed. [1988, 617] [AACR2] says no, but in practice a new record is made.) Does difference in physical format tend to be associated with difference in intellectual and artistic content? It would be useful to determine how often videocassettes of feature films prepared for release to video stores and libraries are different manifestations from the original release manifestations. One would suppose that video releases are frequently original release versions. On the other hand, one could imagine that the transfer from 35 millimeter to 16 millimeter film gauge might be frequently associated with difference in manifestation, because 16 millimeter films were often made for broadcast on television, where editing to fit the television format was frequent.

**RESEARCH QUESTIONS**

The following research was designed to illuminate the nature of moving image manifestations, including their rate of occurrence and the clues available to catalogers that two items differ significantly enough to be considered different manifestations. The following specific research questions were posed:

1. How frequently do manifestations occur?
   a. How frequently do items differ in continuity, i.e., actual intellectual and artistic content as revealed by shot-by-shot analysis?
   b. How frequently do items differ in language?
   c. How frequently do items differ in subsidiary matter?
   d. How frequently do items differ in title and presentation of credits?

2. To what extent are visible indicators associated with actual differences in continuity? By visible indicators are meant:
   a. Explicit manifestation indicators such as manifestation statements (e.g., “restored version,” etc.) or censorship or other approval body statements
   b. Title frame differences, such as: title; series; credits; graphics; distributor, distribution, or copyright date; copyright holder
   c. Physical format variation
   d. Length; length is a somewhat special case, because, to the degree length measurement is reliable, length is necessarily linked to actual difference in continuity
   e. Statements of subsidiary authorship (e.g., the name of the person who wrote the subtitles, the name of the person who created a restored version, etc.); these, too, are a special case, because they are necessarily linked to a difference in intellectual or artistic content

**METHODOLOGY**

A random sample was taken, consisting of 119 film works held by the UCLA Film and Television Archive. The main emphasis of that collection is American commercially released sound films. For each work in the sample, an attempt was made to locate a commercially available videocassette copy.

All items representing the same work were cataloged; that is, the title frames were transcribed and the length was measured. Available techniques for length measurement were crude and unreliable. A brief experiment revealed that a measured difference in length of two minutes or less could occur between two copies identical in continuity as often as it occurred between two copies with different continuity. Thus, difference in length was operationally defined as more than two minutes.

Next, a shot-by-shot analysis of each work was done, and each copy was compared with it, in order to determine actual differences in continuity, operationally defined as two more more shots present on one item that were not present on the other. Differences in continuity were categorized as to whether they were due to editing of some kind (e.g., to create
television manifestations, airline manifestations, censored manifestations, etc.) or whether they appeared to be due to damage. Difference in continuity was counted as being due to damage when, in the judgment of the researcher, the loss of footage was arbitrary, e.g., in the middle of a scene, or at the beginning or end of a reel, where damage often occurs.

The results of the shot-by-shot analysis were then compared to the differences that occurred in the indicators collected at the time of cataloging, such as frame differences and differences in physical format.

**Findings and Discussion of Their Implications for How To Indicate Differences in Record-Structuring Practice**

**Manifestations with Actual Difference in Continuity and Text: True Manifestations**

One research question concerned the frequency with which true manifestations occur (the findings are detailed in table 1). It can be seen that the frequency of occurrence of various types of manifestation is high. Of the works sampled, 39% existed in different continuity manifestations. Yet only 8% of the works in the sample are mentioned as having multiple manifestations in standard reference works such as Maltin (1991).

It is not controversial to recommend that separate records be created for manifestations created by editing, e.g., for manifestations with different endings, or for manifestations that have been edited to shorten or to remove offensive material or to create restorations. Nor is it controversial to recommend that separate records be made for manifestations made with slightly different casts in different languages. The new FIAF rules (FIAF 1991) recommend making separate records for both these types of manifestation, and AMIM should probably be read to support this practice as well. AACR2 has recommended this practice all along.

In the survey sample, damage was the cause in 16% of the cases in which difference in continuity occurred. Damage is generally holding-specific. However, once damage has occurred to a negative, all reproductions made from that negative will be damaged in the same way; thus, damage can come to be associated with a particular released manifestation, so it is necessary to be on the lookout for such

<table>
<thead>
<tr>
<th>Manifestation</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Difference in continuity</td>
<td>.39 ± .09</td>
</tr>
<tr>
<td>Editing</td>
<td>.23 ± .08</td>
</tr>
<tr>
<td>Damage</td>
<td>.16 ± .07</td>
</tr>
<tr>
<td>Different subsidiary matter</td>
<td>.07 ± .05</td>
</tr>
<tr>
<td>Accompanying advertising</td>
<td>.06 ± .04</td>
</tr>
<tr>
<td>Entrance and exit music</td>
<td>.02 ± .03</td>
</tr>
<tr>
<td>Different language</td>
<td>.06 ± .04</td>
</tr>
<tr>
<td>Different text in subtitles</td>
<td>.03 ± .03</td>
</tr>
<tr>
<td>Different soundtrack</td>
<td>.03 ± .03</td>
</tr>
</tbody>
</table>

*Added subsidiary matter was not counted as a change in continuity, but length measurements included subsidiary matter.

1 Using Lehmann’s test, a more accurate confidence interval for findings of .07 and .08 would be:

<table>
<thead>
<tr>
<th>Finding</th>
<th>Upper Bound</th>
</tr>
</thead>
<tbody>
<tr>
<td>.07</td>
<td>.123</td>
</tr>
<tr>
<td>.08</td>
<td>.136</td>
</tr>
</tbody>
</table>

(This conversion table can be used for all findings reported below.)

1 Differences in entrance and exit music were not counted as changes in continuity, but entrance and exit music were included in measurement of length.

1 Using Poisson’s test for np or n(1-p) < 10, the upper bounds of the confidence intervals for findings of 0 to .06 would be as follows:

<table>
<thead>
<tr>
<th>Finding</th>
<th>Upper Bound</th>
</tr>
</thead>
<tbody>
<tr>
<td>.03</td>
<td>.075</td>
</tr>
<tr>
<td>.04</td>
<td>.087</td>
</tr>
<tr>
<td>.05</td>
<td>.097</td>
</tr>
<tr>
<td>.06</td>
<td>.105</td>
</tr>
</tbody>
</table>

(This conversion table can be used for all findings reported herein.)
situations. The safest assumption to make, however, until one knows differently, is that the damage is holding-specific. It is certainly important to report the damage to the user. It makes no difference to the film scholar whether a scene is missing due to damage or due to editing; if it is missing from the print on which he bases his critical study, he may come to erroneous conclusions in either case. However, it seems safe to add a description of the damage to a holding-specific note, rather than creating a whole new catalog record to explain it. Archives collect nitrate film that is in a continuous process of disintegration, requiring gradual removal of bits of the film in order to save the remainder. The prospect of having to create a new record every time this is done to a known copy would be daunting and would serve little purpose for the user; a simple statement that such-and-such footage was removed due to nitrate deterioration would be much more concise.

**Subsidiary Authorship and Manifestations with Material Appended**

The FIAF rules do not require making a new record for dubbed or subtitled manifestations, for manifestations with new music tracks, for manifestations with prologues or epilogues, or for manifestations with commentary added by a film scholar. This is a mistake. From the user's point of view, there are significant differences. These works are not purely visual works—they are audiovisual works, and the text or music on the soundtrack is an integral part of the work. Screenwriter and music credits are of great interest to researchers. The manifestation with a prologue or epilogue, or a commentary by a particular person might well be sought out or preferred over other manifestations by a particular user. As far as cataloging technique goes, these are the types of difference in manifestation that affect more than one area of the description. For dubbed or subtitled manifestations, title and credits can be in different languages, and these need to be shown; the USMARC format coding needs to be changed; and the person who wrote the subtitles needs to be credited. The composer of a new music track or the film scholar who wrote the commentary should probably be given an access point, or at least described prominently to allow the user a proper choice as to manifestation. In other words, these are all types of manifestation difference that (1) are of potential use to scholars and (2) potentially require multiple areas of the description to communicate them adequately.

Films that are issued with extensive appended material, such as interviews with filmmakers, outtakes, rehearsals, shot set-ups, auditions, story-boards, trailers from the original release of the film, etc., should be described on a new record so that the appended material can be clearly reported to users. Some appended material should probably be analyzed in its own right, either by means of added entries, or by means of full analytic catalog records. Films with closed captioning, accompanying trailers advertising other films than the work contained, or entrance or exit music are borderline cases. If it is desired to provide access under the trailers, a separate record would be best. If it is enough just to note these differences for users, a holding-specific note would be more concise and economical.

**Length**

Previous research has shown that extent, measured as paging, is a very reliable indicator of difference in manifestation in textual works. Thus length was looked at very carefully to see whether it was an equally reliable indicator for moving image works. As noted earlier, measurement of length is crude for some types of moving image materials, notably 35 millimeter film, and thus an operational definition of same length was used that considered two items to be the same length if they differed by two minutes or less. An underlying premise is that any item that differs by more than two minutes from another item does so because of a difference in continuity of some sort. It was found that 28% of works had at least one pair that differed in length, and 7% of works had at least one pair in which length was the only indicator of an actual difference in continuity. Note
that 39% of works (see table 1) had pairs that actually differed in continuity. The discrepancy between these two figures, 28% and 39%, indicates that not all differences in continuity are revealed by differences in length, because measurement is so crude. Thus, a difference in length should always be taken as significant, keeping in mind that apparently equal lengths (within two minutes) can conceal differences in continuity, because of the unreliability of the measurement devices. This finding about the significance of length was one of the more interesting results of the research, showing that for film, as for texts, extent is the most reliable visible indicator of actual difference in manifestation.

If length is the only difference between two items, it could be argued that the most economical approach would be to indicate the difference on one record. However, to be useful to the user, the cataloging should include a version note indicating the nature of the difference, e.g., that a particular sequence is missing, or that the work appears to have been censored; the best way to clearly link the version note to all copies of that version under current practice is to make a separate record. Also, making a separate record is a clear signal to the user that there are significant differences in the intellectual and artistic content.

**DIFFERENCE IN IDENTIFICATION WITHOUT DIFFERENCE IN CONTINUITY OR TEXT: TITLE MANIFESTATIONS AND NEAR-EQUIVALENTS**

Another research question concerned the extent to which visible indicators on the title frames, either explicit manifestation indicators, or other title frame differences, were associated with actual difference in continuity. Research findings concerning visual indicators are summarized in table 2A.

It is clear that visible indicators are not reliably associated with difference in continuity. Twenty-three percent of works examined had unlabeled manifestations. Forty-eight percent had near-equivalents with misleading visible indicators: there was no underlying change in continuity. Explicit manifestation indicators occur in-

**TABLE 2A**

**RELIABILITY OF VISIBLE INDICATORS ON TITLE FRAMES: SUMMARY**

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>All visible indicators, including both explicit manifestation indicators and title frame differences</td>
<td></td>
</tr>
<tr>
<td>Difference in indicators with actual difference in continuity</td>
<td>.32 ± .08</td>
</tr>
<tr>
<td>Difference in indicators with no difference in continuity</td>
<td>.48 ± .09</td>
</tr>
<tr>
<td>No difference in indicators, but actual difference in continuity</td>
<td>.23 ± .08</td>
</tr>
<tr>
<td>Explicit manifestation indicators</td>
<td></td>
</tr>
<tr>
<td>Difference in indicators with actual difference in continuity</td>
<td>.10 ± .05</td>
</tr>
<tr>
<td>Difference in indicators with no difference in continuity</td>
<td>.08 ± .05</td>
</tr>
<tr>
<td>No difference in indicators, but actual difference in continuity</td>
<td>.33 ± .08</td>
</tr>
<tr>
<td>Title frame differences*</td>
<td></td>
</tr>
<tr>
<td>Difference in title frames with actual difference in continuity</td>
<td>.29 ± .08</td>
</tr>
<tr>
<td>Difference in title frames with no difference in continuity</td>
<td>.47 ± .09</td>
</tr>
<tr>
<td>No difference in title frames, but actual difference in continuity</td>
<td>.25 ± .08</td>
</tr>
</tbody>
</table>

*Title frames" should be taken to mean chief source, as defined by AACR2, i.e., for publication and distribution information, the film or video itself, its case or can, and accompanying materials.
**TABLE 2B**

**RELIABILITY OF VISIBLE INDICATORS ON TITLE FRAMES: SPECIFIC INDICATORS**

<table>
<thead>
<tr>
<th>Visible Indicator</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Explicit manifestation indicators</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Statement of subsidiary authorship</td>
<td>.03 ± .03</td>
<td>0</td>
<td>.03 ± .03</td>
<td>0</td>
</tr>
<tr>
<td>Manifestation statement</td>
<td>.14 ± .06</td>
<td>.03 ± .03</td>
<td>.08 ± .05*</td>
<td>0</td>
</tr>
<tr>
<td>Censorship or approval body statement</td>
<td>.03 ± .03</td>
<td>.01 ± .02</td>
<td>.02 ± .03</td>
<td>0</td>
</tr>
<tr>
<td><strong>Title frame differences</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Different title†</td>
<td>.07 ± .05</td>
<td>.02 ± .03</td>
<td>.05 ± .04</td>
<td>0</td>
</tr>
<tr>
<td>Different series‡</td>
<td>.16 ± .07</td>
<td>.01 ± .02</td>
<td>.10 ± .05</td>
<td>.01 ± .02</td>
</tr>
<tr>
<td>Different credits‡</td>
<td>.25 ± .08</td>
<td>.05 ± .04</td>
<td>.15 ± .06</td>
<td>.01 ± .02</td>
</tr>
<tr>
<td>Different traced credits</td>
<td>.21 ± .07</td>
<td>.04 ± .04</td>
<td>.13 ± .06</td>
<td>.01 ± .02</td>
</tr>
<tr>
<td>Different order of credits</td>
<td>.04 ± .04</td>
<td>.01 ± .02</td>
<td>.03 ± .03</td>
<td>.01 ± .02</td>
</tr>
<tr>
<td>Different graphics</td>
<td>.08 ± .05</td>
<td>0</td>
<td>.05 ± .04</td>
<td>0</td>
</tr>
<tr>
<td>Different distributor*</td>
<td>.48 ± .09</td>
<td>.10 ± .05</td>
<td>.23 ± .08</td>
<td>.03 ± .03</td>
</tr>
<tr>
<td>Different distrib. or copyright date*†</td>
<td>.36 ± .09</td>
<td>0</td>
<td>.21 ± .07</td>
<td>0</td>
</tr>
<tr>
<td>Different copyright holder</td>
<td>.24 ± .08</td>
<td>.02 ± .03</td>
<td>.12 ± .06</td>
<td>0</td>
</tr>
<tr>
<td>Different MPPDA or similar statement††</td>
<td>.06 ± .04</td>
<td>.01 ± .02</td>
<td>.02 ± .03</td>
<td>0</td>
</tr>
</tbody>
</table>

Key:
- A = Visible indicator is present on only one member of a manifestation pair
- B = Visible indicator is the only* indicator that differs between the members of at least one manifestation pair
- C = Visible indicator is associated with an actual difference in continuity
- D = Visible indicator is the only indicator associated with an actual difference in continuity

*When the term “only” is used here, and in D, it means the only indicator besides a change in physical format, such as a change from 16 millimeter to video; title frames were examined separately from physical format.

†Two 35 millimeter items containing *God's Little Acre* had identical manifestation statements, but different continuities. This possibility had not been taken into account when the questionnaire was designed. The videodisc and the 1/2-inch VHS items containing *King Kong* had (a) the same footage, (b) different subsidiary matter, and (c) a manifestation statement on the one without the subsidiary matter; this was counted as a change in manifestation statement without change in continuity.

‡When one item was missing the title frame, this was counted as a “different” title. When two items had the same title, but one had a different variant title on the part title frames, this was counted as a different title, since it could affect access.

¶Numbering unassociated with a series statement was ignored in determining if two items were identical copies.

††Different credits includes the following differences between items:
- (a) one item lists the same names, but there are different forms of name
- (b) one item has end credits missing
- (c) one item has one frame of credits missing
- (d) one item lists the same names, but different functions are given, e.g., the same person is given an editing credit on one item and a screenwriting credit on the other
- (e) two items differ in untraced credits, e.g., caterer, transportation coordinator, or dentist to the star

Different traced credits were counted both here and in the next category.
frequently, and are very unreliable when they do occur. Thirty-three percent of the time, difference in continuity occurs without accompanying explicit manifestation indicators. Eight percent of the time that manifestation indicators do occur, they are misleading in that there is no underlying difference in continuity. Title frame differences on the other hand, occur frequently, but 47% of the time they are not associated with actual difference in continuity, and 25% of the time that there is difference in continuity, there is no corresponding difference in title frames.

We learn from table 2B how often a specific type of visible indicator on the title frames occurs on only one member of a manifestation pair, how often it is the only indicator that differs between the members of a pair, how often it is associated with an actual difference in continuity, and how often it is the only visible indicator associated with actual difference in continuity. Title varies from one item to another only 7% of the time. Credits vary frequently, 25% of the time. Difference in series is frequent, 16%, but associated with actual difference in continuity only 10% of the time. Differences in graphics, copyright holder, and MPPDA statement are never the only difference associated with a difference in continuity.

In general, these findings reveal that none of these visible indicators are reliable indicators of actual difference in continuity.

Some title frame indicators are so important in identification, i.e., in matching users' citations to catalog records, that differences in them should probably be recorded on separate records even when there is no underlying difference in continuity or text. Title differences and billing order differences are of this nature. Items that differ in title or credits are referred to here as title manifestations.

Explicit manifestation statements on the films themselves were rare and unreliable. Explicit manifestation indicators were never the only indicator associated with difference in continuity. There was always another indicator as well. In only 8% of the cases were there manifestation statements associated with actual differences. In another 8% of the cases there were different manifestation indicators (including statements of subsidiary authorship, manifestation statements, and censorship or approval body statements) on the films, but no actual underlying difference in continuity. This would seem to indicate that manifestation statements should be viewed with suspicion by the cataloger, and that new records should be made only when the manifestation statement seems to correspond to actual difference in intellectual and artistic content.

There is little evidence in the literature of an interest on the part of film scholars in distributors after the original distributor. Distributor and distribution date were frequently different, in 48% and 36% of the cases respectively, but in only 3% of cases was the distributor difference the only indicator associated with a difference in continuity, and in no case was the date difference the only such indicator. These findings would seem to support the AACR2 approach of ignoring difference in distributor when deciding when to make a new record, if it is the only difference, and to support a change in practice so that difference in distribution date could be treated in the same way. Items that differ only in distributor or distribution date, unconnected to difference in intellectual and artistic content, are near-

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Footnote:

*Collector's logos, such as the UCLA Film and Television Archive logo, were ignored in determining whether or not two items were identical copies.

**When one item said "© 1958" and another said "© 1958, © 1963 renewed," this was counted as a different copyright date. However, when one item said "© 1958" and another said "© 1968, package design © 1989," this was not counted as a different copyright date.

†Whether or not a rating frame (e.g., "This film has been rated R") was present was ignored in determining whether two items were identical copies. MPPDA stands for Motion Picture Producers and Distributors of America, which gave films certificates of approval based on the famous Hays Code, as part of Hollywood's attempt to censor itself to avoid censorship by society at large.
equivalents. If the USMARC holdings format were to be used to record such near-equivalents, as it is already being used for reproductions, distributors and distribution dates could simply be recorded as holdings-level information. If this one provision of AACR2 were to be put into practice, it could rid OCLC of an immense number of catalog records for essentially the same videocassette release of a motion picture.

Series differences occurred in 16% of the cases, but were associated with actual difference in continuity only 10% of the time. Series statements on shorts can be quite important in citation practice among film users. Many shorts are better known by their series titles than by their actual item titles. Everyone has heard of the Looney Tunes cartoons released by Warner Brothers, but how many people can think of a single cartoon title in the series? For film users, it would probably be best to provide access under series titles, either by making separate records, or by allowing indexable access points for series to be attached to holdings records in the USMARC holdings format.

Sometimes one can tell from the graphics on the title frames that the title frames are later replacements, no longer in the same graphic style as the original title frames on the original issue of the film. This occurred in 8% of the cases in the research, but this difference in graphics was never the only difference associated with a difference in continuity. Such a difference is probably of some interest to users; it would probably be adequate just to indicate a difference in graphics in a note, either copy-specific or otherwise, depending on whether it was connected with difference in intellectual or artistic content or not.

**DIFFERENCE IN PHYSICAL FORMAT WITHOUT DIFFERENCE IN CONTINUITY OR TEXT: NEAR-EQUIVALENTS**

A question that was looked at was whether difference in physical format tended to be associated with difference in continuity. Format differences are differences in medium, i.e., film vs. video, or differences in color, sound, aspect ratio, or film gauge. Format varies frequently without any associated difference in continuity (42%) (table 3A). Conversely, 19% of the time, difference in continuity takes place without accompanying difference in physical format. Thus, these findings indicate physical format difference is an unreliable indicator of difference in continuity.

Details are shown in table 3B. Again, physical format difference is rarely the only indicator of a difference in continuity.

Physical format differences, e.g., monophonic track of a film originally stereophonic, panned-and-scanned manifestation of a film originally wide-screen, or black-and-white manifestation of a film originally color, are definitely of significance to users. These types of difference do not tend to be associated with subsidiary authorship; in other words, the person who did the panning and scanning is usually not given a credit. Thus, they can usually be readily communicated with a single phrase in the physical description area of the bibliographic record. This concisely communicates to the users a significant difference; at the same time, this method is economical, in that it allows one record to be used to describe more than one manifestation or near-equivalent without confusion to the user.

No colorized films were studied in the research reported here. However, colorization tends to be accompanied by subsidiary authorship credits for the colorizers. The same is probably true for “stereo-ized” films. In these cases, as in all cases where conditions of responsibility

### TABLE 3A

<table>
<thead>
<tr>
<th>Association of Continuity</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Difference with Physical Format Variation: Summary</td>
<td></td>
</tr>
<tr>
<td>Physical variation with actual difference in continuity</td>
<td>.28 ± .08</td>
</tr>
<tr>
<td>Physical variation with no actual difference in continuity</td>
<td>.42 ± .09</td>
</tr>
<tr>
<td>No physical variation, but actual difference in continuity</td>
<td>.19 ± .07</td>
</tr>
</tbody>
</table>
TABLE 3B
ASSOCIATION OF CONTINUITY DIFFERENCE WITH PHYSICAL FORMAT VARIATION:
SPECIFIC INDICATORS

<table>
<thead>
<tr>
<th>Physical Format Variation</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
</tr>
</thead>
<tbody>
<tr>
<td>Different color characteristics*</td>
<td>.09 ± .05</td>
<td>.01 ± .02</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Difference in stereo/monophonic</td>
<td>.09 ± .05</td>
<td>.03 ± .03</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Other physical format difference</td>
<td>.57 ± .09</td>
<td>.06 ± .04</td>
<td>.28 ± .08</td>
<td>.05 ± .04</td>
</tr>
<tr>
<td>16 millimeter</td>
<td>.37 ± .09</td>
<td>.03 ± .03</td>
<td>.21 ± .07</td>
<td>.03 ± .03</td>
</tr>
<tr>
<td>Video</td>
<td>.36 ± .09</td>
<td>.02 ± .03</td>
<td>.16 ± .07</td>
<td>.02 ± .03</td>
</tr>
<tr>
<td>Presentation format†</td>
<td>.11 ± .06</td>
<td>.01 ± .02</td>
<td>.05 ± .04</td>
<td>0</td>
</tr>
</tbody>
</table>

Key:
A = Physical format variation is on only one member of a manifestation pair
B = Physical format variation is the only indicator that differs between the members of at least one manifestation pair
C = Physical format variation is associated with an actual difference in continuity
D = Physical format variation is the only indicator associated with an actual difference in continuity

*This was coded as “yes” when one item was black and white and the other was color, but “no” when one item was Technicolor and the other was Eastman color.
†Different presentation format” was taken to mean missing image due to change in presentation format. Thus, a wide-screen 16 millimeter print and a video that had been put into letterbox format in order to get all of the wide-screen image onto the video screen were counted as having the same presentation format.

change, it probably would be best to create separate records so that all differences between manifestations can be clearly recorded.

One might suspect that commercially released videocassettes would tend to be very close in continuity to the original release manifestations most of the time, other than for differences in wide-screen image that might occur between a manifestation on film and a manifestation on video. As a quick test of this supposition, those titles for which a commercially released videocassette had been found were looked at. Of 44 works for which commercially released videocassette copies were found, 39, or 80%, were released commercially in the original release manifestation.

Users are definitely interested in whether they are going to be viewing a videocassette or a motion picture, as the image quality varies considerably from one medium to the other. However, this difference can be concisely indicated in the physical description; normally no other areas of the bibliographic record are needed to express it.

One complication, however, is the GMD, or general material designation, a brief physical description inserted in brackets after the title, e.g., [video recording]. The GMD is an option in AACR2, but an option that is followed by the Library of Congress, so a powerful one. Because archives frequently make video copies of motion pictures, and because the GMD [motion picture] would be confusing on our many 16 millimeter television prints, the GMD is not used in archives. It would seem that film and television study collections would have the same problem. The GMD has never been well liked by all members of the audiovisual community. Perhaps the tendency of GMDs to cause a proliferation of records for what are essentially copies of the same film might be another good reason for getting rid of the GMD.

As was mentioned above, it was frequently the case, 42% of the time, that there was a physical variation between
two items without there being any accompanying difference in continuity. In only 3% of the cases was a transfer to 16 millimeter format the only difference associated with an actual difference in continuity. In only 2% of the cases was a transfer from film to video format the only difference associated with an actual difference in continuity. This would seem to indicate format difference is rarely the only indicator of an actual difference in content, and therefore the OCLC practice of making a new record for every variation in physical format is not providing very good user service. Again, the use of the USMARC holdings format to solve the problem of physical variants could reduce the number of records in OCLC.

RECOMMENDED TREATMENT
Based on these findings, the following treatment for moving image materials is recommended.

TRUE MANIFESTATIONS
If there is any difference in the intellectual or artistic content, a new record should be made. There are three ways that true manifestations with actual difference in intellectual and artistic content can be created: by editing to change the continuity or track; by appending new material; and by changes in sound track and subtitles and cast carried out by identifiable subsidiary authors. The following are examples of such difference:

Edited manifestations:
Difference in continuity (indicator: difference in length of more than two minutes; note that this would include items that differ in film speed due to time compression or expansion)
Revoicings on sound track
Different sound effects on soundtrack

Manifestations with material appended:
Addition of prologues, epilogues, or other subsidiary matter, such as storyboards, posters, trailers, etc., on a videodisc

Accompanying advertising, if it is desired to provide access under it

Subsidiary authorship:
Colorization
New music track
New narration
Commentary by particular critic or filmmaker on separate soundtrack

Translation:
New subtitles
Dubbing

Other difference in text:
New subtitles in the same language
New intertitles on silent film
Restorations completed by particular preservationists or scholars
Partial difference in cast, e.g., the Spanish versions of Laurel and Hardy films, or the future envisioned by Spielberg in which new actors can be substituted for old

TITLE MANIFESTATIONS
If there are significant differences in the title frames, a new record should be made, even if the films beneath the title frames are identical. It is recommended that a difference in title or a difference in the order or inclusion of the production or cast credits be considered such a significant difference, unless such a difference is due to holding-specific damage.

NEAR-EQUIVALENTS
Explicit manifestation statements (e.g., domestic version) and censorship board certificates should be viewed with suspicion by the cataloger. At least one film studied in this research was represented by two items with identical manifestation statements but different continuity. If a manifestation statement is accompanied by a difference in length of over two minutes, it should be assumed to be connected with an actual difference in manifestation until proven otherwise. Otherwise, the statement should just be quoted in a copy-specific note.

It is recommended that no new record
be made when the only things that vary between two items are:

- The distributor
- The date of distribution
- The copyright statement
- The series
- Closed captioning
- Accompanying advertising when no access is desired
- Entrance or exit music
- Title frame graphics

Note that this recommendation is very similar to one made by O’Neill and Visine-Goetz, who suggested that a better object for a single catalog record might be what they refer to as a text, which they define as “a set of editions with the same content” (O’Neill and Visine-Goetz 1989, 172–174). According to this concept, two items that differ only in publisher, date of publication, publisher’s edition statement, paper, typography, binding and price, with no difference in intellectual content, could be described using the same record.

It is also recommended that the following physical variations be considered to create near-equivalents, which also could be described on the same record:

- Videotransfer of motion picture film
- Wide-screen vs. letterboxed vs. panned and scanned
- 3D vs. non-3D
- Black-and-white vs. tinted
- Color vs. black-and-white print
- Stereophonic vs. monophonic vs. Dolby
- 35 millimeter vs. 70 millimeter vs. 28 millimeter
- Nitrate film vs. safety film

**FURTHER RESEARCH NEEDED**

It would be useful to repeat this research in different types of moving image collections, particularly film study collections that contain many commercially released videocassettes and videodiscs, to see whether the findings are different for these newer materials. It is hoped that similar research will be done for other types of non-book materials, such as sound recordings, maps, computer files, etc., to see whether they vary by type of material.

**THE FUTURE**

It is already apparent that a greater awareness of the value of labeling is permeating the film distributing world, at least when the fact that a film item contains a particular manifestation is seen as a selling point. Many currently released videocassettes and videodiscs contain well-labeled director’s cuts or restored manifestations or manifestations with audio tracks by noted film scholars, etc. Caveat emptor is still the rule, however, as unlabeled short television manifestations do crop up on videocassette.

The advent of the digitized image opens up all kinds of intriguing possibilities for the future. If we could ever afford to digitize every copy of a film in existence (a big “if” in the current state of the art of digitization), we could envision computer programs that could number every frame of a film (paging for films at last!), and even flag variations in continuity for inspection by film scholars or catalogers.

**SUMMARY**

The major findings of the research reported above were as follows: Continuity, i.e., intellectual and artistic content, varies frequently in films. Visible indicators and physical format are very unreliable indicators of actual difference in intellectual and artistic content. Length differences of over two minutes are the most reliable indicators of actual difference in intellectual and artistic content.

The research findings are somewhat discouraging for catalogers, showing that the title frame indicators on which standard library cataloging is so dependent are woefully unreliable. However, on the bright side, extent is shown to be a relatively reliable indicator, just as it is for textual materials. Another positive aspect to these findings is that they could be used to support changes in cataloging practice that could lead to the creation of far fewer catalog records for the same work. This would save money for technical processing departments, hard-pressed to find resources to keep up with the flood of publications arriving every day. At the same
time, fewer records could be to the ben-efit of the users of large databases, who would not have to wade through so many records that represent essentially the same manifestations of a work.

For film scholars and archive preservation officers, the findings reported above should present a dire warning: when doing a critical study of a film or making decisions about which item to preserve, every available item should be viewed to make sure all the manifestations have been sorted out. Thirty-nine percent of the works sampled showed differences in continuity. Only 8% of the titles in the sample have been reported in the literature to have different manifestations. Eleven percent of the works sampled had continuity differences that were not accompanied by measurable differences in length. Archives do not have the resources to do shot-by-shot analyses on every copy of every work they collect, so inevitably archive catalogs will not necessarily report reliably on manifestations held.

WORKS CITED

Stanbrook, Alan. 1989. As it was in the beginning. Sight and sound 59, no. 1: 28–32.

APPENDIX: FILMS IN SAMPLE

Data analyzed

<table>
<thead>
<tr>
<th>No.</th>
<th>Film Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Aladdin and the Wonderful Lamp (1934)</td>
</tr>
<tr>
<td>2</td>
<td>The Amazing Mr. Blunden (1972)</td>
</tr>
<tr>
<td>3</td>
<td>Angel and the Badman (1947)</td>
</tr>
<tr>
<td>4</td>
<td>Animal Crackers (1930)</td>
</tr>
<tr>
<td>5</td>
<td>Anthony Adverse (1936)</td>
</tr>
<tr>
<td>6</td>
<td>Apocalypse Now (1979)</td>
</tr>
<tr>
<td>7</td>
<td>Auntie Mame (1958)</td>
</tr>
<tr>
<td>8</td>
<td>Balloon Land (1935)</td>
</tr>
<tr>
<td>10</td>
<td>Brats (1930)</td>
</tr>
<tr>
<td>11</td>
<td>Break of Hearts (1935)</td>
</tr>
<tr>
<td>12</td>
<td>Casablanca (1942)</td>
</tr>
<tr>
<td>13</td>
<td>Catalina Interlude (1948)</td>
</tr>
<tr>
<td>14</td>
<td>Chickens Come Home (1931)</td>
</tr>
<tr>
<td>15</td>
<td>A Chump at Oxford (1940)</td>
</tr>
<tr>
<td>16</td>
<td>Cinderella (1949)</td>
</tr>
<tr>
<td>17</td>
<td>Coming Home (1978)</td>
</tr>
<tr>
<td>18</td>
<td>The Dark Corner (195-?)</td>
</tr>
<tr>
<td>19</td>
<td>Darling Lili (1970)</td>
</tr>
<tr>
<td>20</td>
<td>David Harum (1934)</td>
</tr>
<tr>
<td>21</td>
<td>Dear, Dead Delilah (1972)</td>
</tr>
<tr>
<td>22</td>
<td>Diary of a Resistance (1945)</td>
</tr>
<tr>
<td>23</td>
<td>Dominick and Eugene (1988)</td>
</tr>
<tr>
<td>24</td>
<td>Down Dakota Way (1949)</td>
</tr>
<tr>
<td>25</td>
<td>Farm Frolics (Puddy the Pup and the Gypsies [1936])</td>
</tr>
<tr>
<td>26</td>
<td>Fast and Furry-ous (1949)</td>
</tr>
<tr>
<td>27</td>
<td>Fiddle-de-dee (1948)</td>
</tr>
<tr>
<td>28</td>
<td>Field Trip (ca. 1950)</td>
</tr>
<tr>
<td>29</td>
<td>Finding His Voice (1929)</td>
</tr>
<tr>
<td>30</td>
<td>Flying Leathernecks (1951)</td>
</tr>
<tr>
<td>31</td>
<td>Flying Tigers (1942)</td>
</tr>
<tr>
<td>32</td>
<td>Fort Apache (1948)</td>
</tr>
<tr>
<td>33</td>
<td>Giant (1956)</td>
</tr>
<tr>
<td>34</td>
<td>God’s Little Acre (1958)</td>
</tr>
<tr>
<td>35</td>
<td>The Graduate (1967)</td>
</tr>
<tr>
<td>36</td>
<td>The Greatest Show on Earth (1952)</td>
</tr>
<tr>
<td>37</td>
<td>Gunga Din (1939)</td>
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<tr>
<td>38</td>
<td>Hallelujah I’m a Bum (1933)</td>
</tr>
<tr>
<td>39</td>
<td>The High Command (1937)</td>
</tr>
<tr>
<td>40</td>
<td>Hoosiers (1986)</td>
</tr>
<tr>
<td>41</td>
<td>House of the Damned (1963)</td>
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<tr>
<td>42</td>
<td>Hud (1963)</td>
</tr>
<tr>
<td>43</td>
<td>It’s a Gift (1934)</td>
</tr>
<tr>
<td>44</td>
<td>Jack Frost (1934)</td>
</tr>
<tr>
<td>45</td>
<td>Joan of Arc (1948)</td>
</tr>
<tr>
<td>46</td>
<td>Juarez (1939)</td>
</tr>
</tbody>
</table>
47. Keyhole Varieties (195-?)  
48. King Kong (1933)  
49. Lawrence of Arabia (1962)  
50. Light Years (19—)  
51. Lisa (1962)  
52. Mad Youth (1940)  
54. Mole (1971)  
55. My Darling Clementine (1946)  
56. My Favorite Brunette (1947)  
57. On the Waterfront (1954)  
58. One Touch of Venus (1948)  
59. The Palm Beach Story (1942)  
60. The Phantom Planet (1961)  
61. The Prince and the Pauper (1937)  
63. Rhythm and Blues Review (1955)  
64. Rock Baby, Rock It (1957)  
65. Seven Brides for Seven Brothers (1954)  
66. Sing Me Goodbye (1950)  
67. Ski Devils (1948)  
68. Sleepy Time Possum (1951)  
69. Stagecoach (1939)  
70. Stolen Jools (1931)  
71. La Strada (1954)  
72. Stripes (1981)  
73. Summertime (1934)  
74. Things to Come (1936)  
75. 30 Years of Fun (1962)  
76. Tijuana After Midnight (1954)  
77. Tom Sawyer (1938)  
78. Tropical Sportland (1943)  
79. Unusual Occupations L1-6 (1942)  
80. Voodoo Man (1944)  
81. Whispering Smith (1948)  
82. Woody Woodpecker (1941)  
83. Guest Wife (1945)  
84. Once Upon a Honeymoon (1942)  
85. The Prairie (1948)  
86. Second Chance (1953)  
87. Snow White and the Seven Dwarfs (1937)  
88. That Cold Day in the Park (1969)  

89. Tidal Wave (Submersion of Japan [1975])  
90. Unusual Occupations L2-5 (1943)  
91. The Viking (1931)  
93. Yanks (1979)  

Identical copies (27)  
94. All My Babies (1953)  
95. Aqua Babes (1956)  
96. As Our Friends (1947)  
97. Avalanche (1978)  
99. Beyond Glory (1948)  
100. Beyond the Forest (1949)  
101. The Big Flame-up (1949)  
102. Black Cats and Broomsticks (1955)  
103. Bombing of Pearl Harbor (1942?)  
104. Double Rhythm (1946)  
105. Fliower Flying (1945)  
106. The Girl Behind the Curtain (1952)  
107. Hotlip Jasper (1945)  
108. Jailbirds (1932)  
109. Little Cut Up (1949)  
110. Lucky Jordan (1942)  
111. Objective—Security (1945?)  
112. The Price of Silence (1959)  
113. Remember These Faces (194-?)  
115. Sons of the Desert (1933)  
116. Tails of the Border (1943)  
117. Velvet Vampire (1971)  
118. The Whitetail Buck (1955)  
119. Wild Harvest (1947)  

Catalog records for these films can be examined in the UCLA Film and Television Archive database on ORION, the UCLA Libraries' online information system. Soon they will be available in MELVYL (free on the Internet).
Comparative Results of Two Current Periodical Use Studies

Maiken Naylor

When two current periodical use studies were conducted only four years apart in the Science and Engineering Library at the University at Buffalo, the opportunity arose to make a detailed comparison of results obtained by two different methodologies; one was a reshelving study, the other required users to self-report their use of materials. During the second study, there was concern that users would ignore instructions and either not report use or indicate repeated uses where none had taken place. Final tallies showed that high-use current science periodicals had 40% higher use when monitored by shelver pick-up than by user self-report; overall use in the physical sciences appeared to have dropped under the latter method for a group of 700-plus titles, while use in the life and environmental sciences increased, possibly due to new interdisciplinary programs. The entire collection of journals currently received during both studies had 18% less use when self-reported than when reshelved by library staff, indicating that while over-reporting of favorite titles might take place, it cannot compensate for patron indifference to producing a record of a wide range of use both at the shelf and away. Use study researchers who are trying to identify low use journals need to be aware that this methodology, though cost-effective, might provide results where a considerable portion of use goes unrecorded.

In this study I present a comparison between two current periodical use studies conducted four years apart in the Science and Engineering Library at the University at Buffalo using different methodologies. Given the fact that active user participation was necessary in the second of these studies, I wanted to compare data collected from both to see whether similar volumes of use data were generated, but also what the advantages and disadvantages associated with these methods were, and what concerns with user cooperation would need to be addressed in future studies.

Earlier I reported on an initial comparison of these methodologies, using data generated in a reshelving study in 1987–88, and also from the major study of both current and bound periodical use that was then underway and subsequently completed in August 1992 (Naylor 1993). The preliminary conclusion was that the earlier reshelving, or sweep, method had produced higher counts of journal use than the subsequently employed self-reporting, or check-off, method for high-use current science and engineering periodical titles. This earlier observation of differentially reported use has now been

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confirmed. In addition, a drop in the use of the collection of "physical science" titles and a rise for "life science" titles were observed and can only be partially explained by the introduction of new programs, and not by a change in the relative sizes of user populations.

BACKGROUND

In October 1987, the Science and Engineering Library and its branches (chemistry, mathematics, and geology) at the State University of New York at Buffalo embarked upon a survey of current periodical use, which was described at length in Serials Review (Naylor 1990). This study, which I will refer to as the SEL study, lasted for one year. Its primary purpose was the identification, through the sweep method, of low use current titles to provide back-up data for cancellation decisions. With the sweep method library shelves collect current periodicals that have been used and left lying about, record their number individually, and reshelve them daily. This study resulted in daily use statistics for about 1,700 titles. The use of each title was entered into a dBASE III+ database, enabling the author four years later to add and compare data with a minimum of effort.

Again in September 1991, the Science and Engineering Library and its branches participated in a larger effort, this time to measure use of both bound and unbound volumes in all University at Buffalo libraries, as well as in libraries at the other SUNY Centers at Albany, Binghamton, and Stony Brook. This study, hereafter referred to as the SUNY study, was far more ambitious in scope. Designed with input from representatives of all four campuses and supported by a grant from the Council on Library Resources, it was part of a joint project of the SUNY Center libraries, whose goal was the generation of policies and plans for cooperative collection development and resource sharing. These decisions, based on the concurrent studies carried out at all four SUNY Centers, will increase SUNY systemwide cooperation and are now being implemented.

CHANGES IN COLLECTIONS AND USER POPULATIONS

POPULATION

What changes have taken place in the Science and Engineering Library (SEL) in the four-year interval between studies, and how do they affect the generation and collection of journal use data that can be compared? SEL serves the Faculty of Natural Sciences and Mathematics and the School of Engineering and Applied Sciences. Doubtless, there has been some turnover in the user population of faculty and students. However, the populations then and now, described earlier (Naylor 1993, 29), were found to be generally similar, both in numbers and departmental affiliation.

PHYSICAL CHANGES

Physical changes in location of the collections in the past four years occurred through relocation and assimilation of the geology branch collection into SEL in 1991. The Chemistry-Mathematics Library, where both collections had been consolidated in 1988, remained unchanged in the intervening four years.

LIBRARY HOURS

Library hours in SEL were the same in spring and fall semesters of both studies (95.5 hours/week), higher in summer 1988 than summer 1992 (73 hours/week vs. 55.5 hours/week), and lower in intersessions 1987-88 than intersessions 1991-92 (45 hours/week vs. 51.5 hours/week), for a net drop in annual hours of only 1%, from 4,124 hours in 1987-88 to 4,071 in 1991-92.

JOURNALS HELD

Because the SEL study was initiated to identify low use journals with a view towards cancellation, it is no surprise that many of the 1300 titles in SEL exclusive of its branches in 1987 were no longer current in 1991, and therefore unavailable for comparison purposes. In fact, only 828 of
the journals received in 1987 remained, including those with title changes and continuations. Many new titles had been added in the interim, but they cannot be evaluated in the comparison attempted in this report.

**AVAILABILITY OF INDEXES**

Another factor worth considering when reviewing the environment in SEL then and now is the availability of indexes and abstracts to the user population. While there were no CD-ROM products and electronic databases available in SEL in 1987, by 1991 several non-paper indexes had been introduced at SEL and were available to the entire University at Buffalo community. These had an inevitably positive impact on journal use, demonstrated by a jump in interlibrary loan requests. In addition to BISON, the new online catalog running on NOTIS software as part of an integrated library system, Buffalo’s libraries made the most recent years of five Wilson databases available for online searching in the spring of 1991. Of particular importance for science library users were Applied Science and Technology Index and General Science Index. SEL also purchased Engineering Index (Compendex) on CD-ROM, cancelled it at the end of 1991, but reinstated it in the spring of 1992.

How this affected the use of the engineering literature during the course of the survey can only be guessed at, but the reinstatement came at the request and with the financial support of the engineering departments. SciSearch, the CD-ROM version of Science Citation Index, was also purchased in 1991, and the paper copy was dropped a year later. INSPEC on CD-ROM was bought in the summer of 1992, too late to facilitate access to the physics literature so far as this study was concerned. Cancellation of Chemical Abstracts paper copy in SEL at the end of 1991 (though another subscription remained at the branch Chemistry-Mathematics Library) might have had a negative impact on journal literature accessibility.

**METHODOLOGY OF SUNY STUDY**

The daily execution of all aspects of the SUNY study was assumed as an additional task by regular shelve and technical services personnel. The lack of funding in the grant for additional stack maintenance personnel prevented the use of a labor intensive method, such as the sweep method, to collect current periodical use data. The resulting methodology was, therefore, a hybrid in that it was respectively different for current issues (check-off) and bound volumes (sweep) of a title. One of the investigators at the Science and Engineering Library had recently used this differential approach successfully at UCLA (Herzog, Raeder, and Sullivan 1990). A data collection model already existed, as well as a data entry form that had been adapted with little additional effort for current issues as part of the total use of a journal, and it had proved cost-effective. In brief, use of current issues was checked off by users themselves, and use of bound volumes was captured by the reshelving or sweep method by library shelve as part of normal reshelving activity. The latter method has been frequently described in the literature (Wenger and Childress 1977, Rice 1979, Alldredge 1983, Fjallbrant 1984, Metz and Litchfield 1985, Eckman 1988). A sticker (or dot) is placed on the spine of a volume to be reshelved, and subsequent reshelvings are indicated by hash marks on this label (or more dots are added). At the study’s conclusion, use information is copied from the spines to tally sheets and then to a computer database. This procedure was followed for bound volumes in the SUNY study.

In this paper I focus only on the aspects of the SUNY study dealing with current periodical use. Other studies of this type based on self-reported use data had been conducted on a smaller scale at the Undergraduate Library of the University of Illinois at Urbana-Champaign in 1980 (Konopasek and O’Brien 1984), and at the Memorial University of Newfoundland (Milne and Tiffany 1991). At SUNY Centers, a small paper label was affixed to the front cover of each new journal issue.
Small labels were used because of the high cost of providing one for each current issue of tens of thousands of periodicals in all the participating SUNY Centers, and also to avoid covering important publication information. On this label, users were asked, "PLEASE HELP US gather data on your use of our journals by crossing off the next # each time you use this issue"; the numbers ran from 1 to 15. If an issue was used more than 15 times, the additional use was not known, although capturing these uses would have been interesting and potentially useful. For the purposes of the SUNY study, this was irrelevant, because the aim was to identify low use titles that could be shared in cooperative collection development among SUNY Centers. At the Memorial University of Newfoundland, a much larger tag was affixed to both bound and unbound periodicals, with 24 rather than 15 spaces on which the user was requested to indicate academic status, such as undergraduate, graduate, and other (Konopasek and O'Brien 1984, 67). While one of the advantages of such an in-house user study is that a user category can be related to the material (Christiansen, Davis, and Reed-Scott 1983, 437), this was again of no concern in the SUNY study, would have been more expensive to implement, and demanded more participation from the user. So far as the labels were concerned, a cutoff number of 15 proved to be adequate, because issues of only about 1% of all current periodicals ever reached this saturation level in the SUNY study. When the current issues were bound, the number of issues, their total use, and number of issues with more than 15 uses were coded on a sticker on the spine. Subsequent reshelving uses of the bound format were then recorded by library shelvers using hash marks on the same sticker. These bound-volume uses are not included in our comparison, which deals exclusively with unbound issues. At SEL, all current issues are bound soon after a volume is complete, except for tabloid type publications such as Scientist and Information Today, which are retained for the current year plus one, and then discarded.

The question of whether users in fact followed instructions and checked off a number every time they used an issue arose in the early months of the study. At the Chemistry-Mathematics Library, which has a collection of just over 300 current titles, the author frequently found one or two current issues on tables and carts without a check-off mark. Consultation with librarians at other units revealed that the instructions were sometimes being ignored elsewhere, too. This sparked the author's curiosity to examine use of a small number of titles at an intermediate point, and to compare this with time-specific data from the earlier SEL study. Now, after the year's data collection has been completed, one can begin to make some comparisons between the two use surveys, each of which covered a year starting roughly at the beginning of the fall semester, although four years apart.

Selection of Data

As noted before, an operating collection of 828 journals in SEL had survived cancellation over the four-year span since the earlier SEL study. Current-use data of these titles for both 1991 and 1992 unbound issues were drawn via screen prints from a Statistical Analysis Software file on the Buffalo mainframe computer imported into an e-mail account. The screens provided information on the number of current issues, their reported uses, the number that had "maxed out" with 15 or more uses, as well as concurrent information on bound volume use. Current issue data for the 828 titles gathered during both the SEL and SUNY studies were copied into an edited dBASE III+ file of the earlier SEL study data.

We also studied the performance of high-use current journals, which were first examined in an earlier article (Naylor 1993). These were from a set of 98 titles.
that had high use (50 and more) in the SEL study. Combining sections of one title under one heading (Journal of Geo-

physical Research), eliminating cancella-
tions and disregarding reserve titles left us
with 90. The 90 showed a 37% drop in current issue use from their previous lev-
els at an intermediate point in the survey
year (Naylor 1993). Follow-up evaluation
involved manual data collection for 27
titles that were in the Chemistry-Mathe-
matics Library and for which an SAS ftle
was not available at the time. The now-
bound 1991–92 volumes were examined
individually, and data were tallied from
check-off labels. Earlier high-use titles
not part of the group of 90 included two
that were on reserve to protect them from
theft. Because one reserve journal
(Chemical & Engineering News) was al-
ready in the pool, these two (BYTE, ENR)
were included for the sake of consistency,
bringing the group total to 92. A fourth
reserve title (EDN) did not qualify be-
cause of its low use.

The decision on how to treat data for
titles that had one or more “maxed out”
issues was problematic. While in all cases
there was an inherent uncertainty in the
number of uses checked off, including an
error of at least one for each time a current
issue was found unmarked and off the
shelf, for “maxed out” issues an additional
source of error was introduced: the inability
of users to check off any uses beyond
15 on the provided label. This extra use
might have been zero, one, or 100, but
there was no way to capture this. While
one would prefer to work with data that
were created with similar initial condi-
tions and constraints, the “maxed out”
journals were definitely used, perhaps
more than others, and cannot be ignored.
We decided to place the nominal numeric
value of each such issue at 15, and use this
number in all calculations and tables.
There were 15 of these titles, or just under
2% of the 828 under consideration, and
they are listed in table 1.

Since 1990, the assignment of LC class
numbers to all periodicals in SEL has
made it possible to sort titles on class and
to see how use in the different disciplines
has fared over the past four years, besides
noting what effect, if any, the self-report-
ing, or check-off, method was having on

TABLE 1
JOURNALS WITH ONE OR MORE CURRENT ISSUES REACHING 15 OR MORE USES

<table>
<thead>
<tr>
<th>Title</th>
<th>Sweep</th>
<th>Check-off</th>
<th>Class #</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACM Computing Surveys</td>
<td>13</td>
<td>20</td>
<td>QA76.5</td>
</tr>
<tr>
<td>Applied Physics Letters</td>
<td>568</td>
<td>237</td>
<td>QC1</td>
</tr>
<tr>
<td>Journal of Catalysis</td>
<td>64</td>
<td>65</td>
<td>QD501</td>
</tr>
<tr>
<td>Ecology</td>
<td>50</td>
<td>59</td>
<td>QH540</td>
</tr>
<tr>
<td>IEEE Trans. on Medical Imaging</td>
<td>29</td>
<td>43</td>
<td>RC78</td>
</tr>
<tr>
<td>Civil Engineering</td>
<td>85</td>
<td>65</td>
<td>TA1</td>
</tr>
<tr>
<td>Journal of Materials Science Letters</td>
<td>51</td>
<td>95</td>
<td>TA401</td>
</tr>
<tr>
<td>IEEE Trans. on Power Delivery</td>
<td>4</td>
<td>42</td>
<td>TK1</td>
</tr>
<tr>
<td>IEE Proceedings Pt. C.</td>
<td>3</td>
<td>16</td>
<td>TK1</td>
</tr>
<tr>
<td>IEEE Power Engineering Review</td>
<td>11</td>
<td>47</td>
<td>TK1</td>
</tr>
<tr>
<td>IEE Proceedings Pt. B</td>
<td>3</td>
<td>17</td>
<td>TK4000</td>
</tr>
<tr>
<td>IEEE Trans. on Electron Devices</td>
<td>58</td>
<td>75</td>
<td>TK7870</td>
</tr>
<tr>
<td>Thin Solid Films</td>
<td>51</td>
<td>96</td>
<td>TK7871</td>
</tr>
<tr>
<td>IEEE Journal of Solid-State Circuits</td>
<td>15</td>
<td>42</td>
<td>TK7871</td>
</tr>
<tr>
<td>IEEE Trans. on Computer-Aided Design</td>
<td>30</td>
<td>140</td>
<td>TK7874</td>
</tr>
</tbody>
</table>
TABLE 2

SELF-REPORTED (CHECK-OFF) PERIODICAL USE COMPARED TO RESHELVED (Sweep) USE

<table>
<thead>
<tr>
<th>#Titles</th>
<th>Sweep</th>
<th>Check-off</th>
<th>Change</th>
<th>Sweep</th>
<th>Check-off</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>92</td>
<td>5,060</td>
<td>3,114</td>
<td>-38%</td>
<td>9,920</td>
<td>5,959</td>
<td>-40%</td>
</tr>
<tr>
<td>83</td>
<td>4,540</td>
<td>2,503</td>
<td>-45%</td>
<td>8,819</td>
<td>5,005</td>
<td>-43%</td>
</tr>
</tbody>
</table>

*92 titles include nine that reached or exceeded the maximum check-off number of 15 uses.

**Results**

In a previous article (Naylor 1993) it was reported that 90 high current-use titles in SEL and its branches had 4,951 uses for October 1987 through March 9, 1988, and subsequently 3,106 uses for September 1991 through February 14, 1992, intervals corresponding to the first 148 days the library was open in each survey year. The ratio of these numbers is 0.63; 37% fewer uses for these titles were recorded by the check-off method than by the sweep method used four years earlier. Ignoring data for six titles that had one or more “maxed out” issues, making total use uncertain, the ratio for uses for 84 titles was 2594/4553, or 0.57, meaning that 43% fewer uses were recorded for them than four years before.

After a full year, the ratio continued to decline slightly for our universe of 92 titles, as shown in table 2. The 92 titles had 38% fewer uses by February 14, and 40% fewer uses after one year, than four years earlier. The further incremental drop is not surprising. The first interval of our comparison, September through the middle of February, included the entire first semester and three weeks of the second. The second interval, from February 15 through the end of August, included the remaining 12 weeks of the second semester, and the months June, July, and August, which had also shown reduced current periodical use in the SEL study. Sixty-one of the 92 titles had higher use in the first interval, 31 in the second. Twelve of the 92 had higher use by the check-off method than by the earlier reshelving, and two of these had suspicious repetitive markings that accounted for over 150 uses—possible cases of user interference.

Calculations that exclude the “maxed out” journals, of which there were nine after one year, show 45% fewer uses after 148 days, and 43% fewer after one full year. When a percentage point in our table 2 calculations represents 99 or 88 uses, even possible user over-reporting does not overcome the fact that there is a significant difference in use recorded by the two methods. Suffice it to say that for 92 high-use current science journals at the University at Buffalo, use dropped by 40% or more as self-reported by users, compared to library reshelving counts four years earlier. Titles and data are listed in table 3.

This decline in use is somewhat higher than the under-reporting observed by Milne and Tiffany, who saw in it a problem inherent in voluntary user participation. They carried out a pilot study to determine the relationship between actual uses and the number of ticks made by users on their data collection tags, using information from issues that had circulated. They found circulations outnumbered user ticks, or check-offs, three to two. This resulted in a correction factor of 1.5 for their data. In terms of percentages, this drop of one out of three uses would have appeared as -33.3% in table 2.

Similar circulation data exist for the small number of SEL journals on reserve, and we can use them as a reality check for our hypothesis. Current issues of Chemical & Engineering News, BYTE, EDN, and ENR were kept on reserve to guard against theft. Although individual title sta-
# TABLE 3

<table>
<thead>
<tr>
<th>Title</th>
<th>Sweep Method</th>
<th>Check-off Method</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>One Year</td>
<td>148 Days</td>
</tr>
<tr>
<td><em>Applied Physics Letters</em></td>
<td>568</td>
<td>220</td>
</tr>
<tr>
<td><em>Science</em></td>
<td>475</td>
<td>212</td>
</tr>
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<td><em>Physical Review Letters</em></td>
<td>432</td>
<td>211</td>
</tr>
<tr>
<td><em>JACS</em></td>
<td>383</td>
<td>188</td>
</tr>
<tr>
<td><em>Nature</em></td>
<td>359</td>
<td>151</td>
</tr>
<tr>
<td><em>Tetrahedron Letters</em></td>
<td>281</td>
<td>125</td>
</tr>
<tr>
<td><em>New Scientist</em></td>
<td>268</td>
<td>148</td>
</tr>
<tr>
<td><em>Chemical &amp; Engineering News</em></td>
<td>248</td>
<td>78</td>
</tr>
<tr>
<td><em>Journal of Geophysical Research</em></td>
<td>230</td>
<td>139</td>
</tr>
<tr>
<td><em>Physical Review B: Condensed Matter</em></td>
<td>186</td>
<td>94</td>
</tr>
<tr>
<td><em>J Chem Soc Chemical Communications</em></td>
<td>180</td>
<td>88</td>
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<tr>
<td><em>Japanese J Applied Physics, Pt. 2, Letters</em></td>
<td>160</td>
<td>74</td>
</tr>
<tr>
<td><em>Inorganic Chemistry</em></td>
<td>156</td>
<td>73</td>
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<tr>
<td><em>Solid State Communications</em></td>
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<td>86</td>
</tr>
<tr>
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<tr>
<td><em>Journal of Physical Chemistry</em></td>
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<td><em>Journal of Organic Chemistry</em></td>
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<td>76</td>
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<td><em>Tetrahedron</em></td>
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<td>80</td>
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<td><em>Synthetic Communications</em></td>
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<td><em>Journal of Organometallic Chemistry</em></td>
<td>132</td>
<td>89</td>
</tr>
<tr>
<td><em>Japanese Journal of Applied Physics, Pt. 1</em></td>
<td>130</td>
<td>54</td>
</tr>
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<td><em>Journal of Chemical Education</em></td>
<td>130</td>
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<td><em>Cell</em></td>
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<td><em>Materials Engineering</em></td>
<td>100</td>
<td>70</td>
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<td><em>Physics Letters: Part A</em></td>
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<td><em>Analytical Chemistry</em></td>
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<tr>
<td><em>Chemical Physics Letters</em></td>
<td>90</td>
<td>45</td>
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<td><em>Surface Science</em></td>
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<td>55</td>
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<td><em>Mechanical Engineering</em></td>
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<td><em>Civil Engineering</em></td>
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<tr>
<td><em>Angewandte Chemie Internat Ed</em></td>
<td>84</td>
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<tr>
<td><em>Optics Letters</em></td>
<td>83</td>
<td>54</td>
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<tr>
<td><em>Manufacturing Engineering</em></td>
<td>78</td>
<td>27</td>
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<tr>
<th>Title</th>
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<th>Check-off Method</th>
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</thead>
<tbody>
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<td>Mathematical Intelligencer</td>
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<td>Chemische Berichte</td>
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<td>39</td>
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<tr>
<td>ENR</td>
<td>74</td>
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<td>Methods in Organic Synthesis</td>
<td>74</td>
<td>35</td>
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<td>Physics Teacher</td>
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<td>Electronics Letters</td>
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<td>Datamation</td>
<td>64</td>
<td>45*</td>
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<tr>
<td>Expert Systems</td>
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<tr>
<td>Marine Ecology Progress Series</td>
<td>62</td>
<td>37</td>
</tr>
<tr>
<td>Chemical Engineering Science</td>
<td>62</td>
<td>37</td>
</tr>
<tr>
<td>CR Seances Acad Sci Ser 1: Mathematique</td>
<td>60</td>
<td>53</td>
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<tr>
<td>Materials Research Bulletin</td>
<td>60</td>
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<td>60</td>
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<tr>
<td>Journal of Engineering Mechanics</td>
<td>59</td>
<td>40</td>
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<tr>
<td>Canadian Journal of Earth Sciences</td>
<td>59</td>
<td>48</td>
</tr>
<tr>
<td>Journal of Crystal Growth</td>
<td>59</td>
<td>38</td>
</tr>
<tr>
<td>IEEE Transactions on Electron Devices</td>
<td>58</td>
<td>75*</td>
</tr>
<tr>
<td>Journal of Non-Newtonian Fluid Mechanics</td>
<td>57</td>
<td>18</td>
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<tr>
<td>American Journal of Physics</td>
<td>56</td>
<td>24</td>
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continued on next page
### TABLE 3 CONTINUED

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<th>Title</th>
<th>Sweep Method One Year</th>
<th>148 Days</th>
<th>Check-off Method One Year</th>
<th>148 Days</th>
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<td>Journal of Biological Chemistry</td>
<td>55</td>
<td>34</td>
<td>59</td>
<td>14</td>
</tr>
<tr>
<td>Superlattices and Microstructures</td>
<td>54</td>
<td>16</td>
<td>12</td>
<td>9</td>
</tr>
<tr>
<td>Applied Spectroscopy</td>
<td>54</td>
<td>45</td>
<td>12</td>
<td>8</td>
</tr>
<tr>
<td>IEEE Journal of Quantum Electronics</td>
<td>54</td>
<td>21</td>
<td>28</td>
<td>14</td>
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<td>Industrial Engineering</td>
<td>54</td>
<td>26</td>
<td>47</td>
<td>25</td>
</tr>
<tr>
<td>Journal of Chemical Physics</td>
<td>54</td>
<td>24</td>
<td>34</td>
<td>13</td>
</tr>
<tr>
<td>Pure and Applied Chemistry</td>
<td>52</td>
<td>18</td>
<td>38</td>
<td>17</td>
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<td>Analytica Chimica Acta</td>
<td>52</td>
<td>48</td>
<td>37</td>
<td>21</td>
</tr>
<tr>
<td>Physical Review A: General Physics</td>
<td>51</td>
<td>33</td>
<td>29</td>
<td>9</td>
</tr>
<tr>
<td>Journal of Materials Science Letters</td>
<td>51</td>
<td>23</td>
<td>95*</td>
<td>72*</td>
</tr>
<tr>
<td>Thin Solid Films</td>
<td>51</td>
<td>27</td>
<td>96*</td>
<td>59*</td>
</tr>
<tr>
<td>International Journal of Production Research</td>
<td>51</td>
<td>26</td>
<td>28</td>
<td>10</td>
</tr>
<tr>
<td>IEEE Expert</td>
<td>51</td>
<td>28</td>
<td>12</td>
<td>12</td>
</tr>
<tr>
<td>Marine Biology</td>
<td>51</td>
<td>25</td>
<td>33</td>
<td>21</td>
</tr>
<tr>
<td>Advanced Materials and Processes</td>
<td>51</td>
<td>31</td>
<td>25</td>
<td>17</td>
</tr>
<tr>
<td>Earthquake Spectra</td>
<td>50</td>
<td>18</td>
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<td>Computers and Structures</td>
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<td>28</td>
<td>23</td>
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<td>Ecology</td>
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<td>59*</td>
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</tr>
<tr>
<td>Pattern Recognition</td>
<td>50</td>
<td>34</td>
<td>50</td>
<td>38</td>
</tr>
</tbody>
</table>

*One or more issues of this title reached or exceeded 15 uses.

Statistics were not kept, these four were circulated a total of 194 times during the survey year. Check-off data were 79, 0, 11, and 51, respectively, for a total of 141. This indicates that users under-reported their demand for these titles by 27% (53/194), not quite our 40% for high-use journals or Milne and Tiffany's 33%. By comparison, uses for these journals had been 248, 55, 9, and 74, respectively, for a total of 386, in the SEL study. Chemical & Engineering News had not been on reserve in 1987, and had suffered heavily from pilfering, but not in so far as its reshelving counts would indicate. Reserve status seems to have effectively shut down much of the current awareness use that is the aim of this publication.

Turning to titles in SEL exclusively, the 828 had 18,192 uses in the reshelving study of 1987-88, and 15,455 in the check-off study in 1991-92, for a net loss of 15% (2,737/18,192). What is happening with the lower use titles? A differential effect that is progressively more marked as measured use goes into the hundreds is not identifiable across the board. One must remember that these data were collected four years apart, and there can be changes in popularity of titles as disciplines evolve or decline in the curriculum and new users arrive. If we eliminate titles that showed high (50 or more) use in the SEL study of 1987-88 from our group, the 828 are reduced to 765. Eight of these have issues that received 15 uses or more; if we discard these, we are left with 757. Summing their total use by the sweep method in 1987 we get 11,336; by the check-off method in 1991, 11,422. The volume of use reported by both methods is practically the same.
The distribution of journals having various numbers of use between 0 and 49 as reported by both methods is shown in Figure 1. It must be remembered that the distribution of uses shown for the sweep method relates to what remains of the original group of titles as it existed in 1987 after subsequent cancellations. It is a culled population. Clearly, there are fewer titles left with 1 or 2 or 3 uses, because lower use journals were cancelled preferentially. This explains the initial rise of the distribution curve to a mode of six. Moreover, these titles also survived an intermediate cancellation effort in 1990, so that it can be said that they were part of an operating collection. Yet when use was evaluated by the check-off method, over 100 titles showed 0, 1, or 2 instances of use only. A plot of this distribution for check-off use follows an exponential decline, having a larger number of low use titles. This is more evident in figure 2, a logarithmic plot of check-off data, which is roughly linear. After 15 or more uses, both distributions follow the same general exponential slope. Of course, the same titles did not have the same number of uses under both methods, four years apart. Only 298 titles showed check-off use within ±5 points from the sweep use, and 470 were within ±10; the remaining 287 were almost equally divided, with 150 showing higher sweep count and 137 with lower sweep count.

The percentage shifts from sweep to check-off use over the gap of four years for some major call number ranges of titles in SEL (table 4). This includes the SEL portion of the 92 high-use titles discussed earlier, or 65 (27 titles being in the Chemistry-Mathematics Library), and most titles in table 1 (not class RC). Data for such miscellaneous class numbers with just a couple of titles in SEL were omitted for the sake of brevity. These include JB, LB, NA, HV,
There are evidently dramatic changes in the use of the collection if one takes these numbers at face value. The substantial drop in use for QC, QE, QD, T, TP, and TA titles suggests that physicists, geologists, chemists, and engineers are reading less than before or have gone into hibernation, accompanied by the users of general science titles (Q). In view of the fact that current periodicals are a mainstay of physicists’ and chemists’ professional activity, and departments repeatedly go on record to sacrifice their monograph budgets in order to preserve their current periodical subscriptions, it is unlikely that use has dropped so drastically. It is possible that these users are indifferent to surveys such as this and do not bother to record their use of the items they read. The drop in current periodical use in these fields is not accompanied by a drop in numbers of faculty and students in the corresponding departments.

However, a case can be made for the surge in the use of titles in call number ranges QH, QP, QR, G, TC and S. New proactive faculty in the biology department have introduced new courses and interdisciplinary programs, particularly environmental ones. This reflects the increased interest in and awareness of the environment and ecology, water quality, and waste disposal by society at large. Programs in electronics and electrical engineering are also expanding, including the study of new materials, thin films, and devices, boosting use of all TK journals.

The numbers of titles from table 4 arranged in two groups corresponding to LC classes in the physical or life and environmental sciences are shown in table 5. The former show an average decrease of 27% (though TK does not), and the latter, an average increase of 38%.

Finally, we can perform an inde-
TABLE 4

<table>
<thead>
<tr>
<th>LC Class Range</th>
<th>No. Titles</th>
<th>Sweep Count &quot;S&quot;</th>
<th>Check-off Count &quot;C&quot;</th>
<th>&quot;S&quot; &gt; &quot;C&quot;</th>
<th>Increase/Decrease (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>TN</td>
<td>13</td>
<td>472</td>
<td>167</td>
<td>12</td>
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</tr>
<tr>
<td>TJ</td>
<td>35</td>
<td>715</td>
<td>325</td>
<td>28</td>
<td>-55</td>
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<td>Q</td>
<td>28</td>
<td>1,661</td>
<td>876</td>
<td>25</td>
<td>-47</td>
</tr>
<tr>
<td>T</td>
<td>23</td>
<td>598</td>
<td>344</td>
<td>19</td>
<td>-43</td>
</tr>
<tr>
<td>TH</td>
<td>5</td>
<td>73</td>
<td>44</td>
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<td>-40</td>
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<td>TP</td>
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<td>1,005</td>
<td>658</td>
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<tr>
<td>QE</td>
<td>55</td>
<td>876</td>
<td>568</td>
<td>41</td>
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<tr>
<td>other QA</td>
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<td>276</td>
<td>188</td>
<td>11</td>
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<tr>
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<td>96</td>
<td>3,004</td>
<td>2,243</td>
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</tr>
<tr>
<td>(97)</td>
<td></td>
<td>(3,572)</td>
<td>(2,480)</td>
<td>(64)</td>
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<tr>
<td>TA</td>
<td>117</td>
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<td>1,880</td>
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<tr>
<td>(119)</td>
<td></td>
<td>(2,581)</td>
<td>(2,040)</td>
<td>(83)</td>
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<tr>
<td>QD</td>
<td>29</td>
<td>675</td>
<td>544</td>
<td>20</td>
<td>-20</td>
</tr>
<tr>
<td>(30)</td>
<td></td>
<td>(739)</td>
<td>(609)</td>
<td></td>
<td>(-18)</td>
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<tr>
<td>TS</td>
<td>13</td>
<td>280</td>
<td>249</td>
<td>8</td>
<td>-11</td>
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<tr>
<td>QA264, QA267, QA75–QA76</td>
<td>52</td>
<td>750</td>
<td>687</td>
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<td>-9</td>
</tr>
<tr>
<td>(53)</td>
<td></td>
<td>(763)</td>
<td>(707)</td>
<td></td>
<td>(-7)</td>
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<tr>
<td>TK</td>
<td>57</td>
<td>954</td>
<td>877</td>
<td>34</td>
<td>-8</td>
</tr>
<tr>
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<td></td>
<td>(1,129)</td>
<td>(1,352)</td>
<td></td>
<td>(+20)</td>
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<tr>
<td>TD</td>
<td>13</td>
<td>273</td>
<td>270</td>
<td>7</td>
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<tr>
<td>QP</td>
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<td>274</td>
<td>333</td>
<td>5</td>
<td>+21</td>
</tr>
<tr>
<td>G, GB</td>
<td>24</td>
<td>386</td>
<td>486</td>
<td>10</td>
<td>+26</td>
</tr>
<tr>
<td>QL</td>
<td>16</td>
<td>152</td>
<td>217</td>
<td>7</td>
<td>+43</td>
</tr>
<tr>
<td>QH</td>
<td>47</td>
<td>990</td>
<td>1,449</td>
<td>15</td>
<td>+46</td>
</tr>
<tr>
<td>(48)</td>
<td></td>
<td>(1,040)</td>
<td>(1,508)</td>
<td></td>
<td>(+45)</td>
</tr>
<tr>
<td>TC</td>
<td>8</td>
<td>48</td>
<td>70</td>
<td>3</td>
<td>+46</td>
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<tr>
<td>S</td>
<td>14</td>
<td>179</td>
<td>294</td>
<td>3</td>
<td>+64</td>
</tr>
<tr>
<td>QR</td>
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<td>18</td>
<td>84</td>
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<tr>
<td>Total</td>
<td>754</td>
<td>16,490</td>
<td>13,262</td>
<td>481</td>
<td>-20</td>
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<tr>
<td>(768)</td>
<td></td>
<td>(17,496)</td>
<td>(14,278)</td>
<td>(483)</td>
<td>(-18)</td>
</tr>
</tbody>
</table>

Data in parentheses include additional titles that have reached 15 or more uses for one or more issues.
suggests that more than a third of all issues reshelved (4,819/13,970) could have had more than one use while off the shelf or had other additional uses while on the shelf. But we know from observation that issues were also left lying about without ever having been checked off, so that there was also pick-up use that had no corresponding check-off use. Because this was not a reshelving study, perhaps reshelving was not carried out as assiduously as four years before; there is ambiguity in the data. Conceivably much of the check-off use took place in the current periodical stacks, where people browse the collection and possibly check off titles they look at and then reshelve themselves. It is also possible that enthusiasts checked off their favorite titles more than once after use, voting not necessarily early, but often. Some instances of this have been tentatively identified, as reported above. One journal showed an unusually high final use count after moderate use at the interim date when the author made an evaluation of the high-use journals. On a large number of consecutive issues, six very distinct check-off marks nearly always appeared in the same order, like notes of a leitmotif. Issues received after a certain date showed lower use with check-off marks of no distinction and in no discernible sequence. If six separate users actually checked off all these issues, they did it consecutively, as in an assembly line, and they checked off everything on the shelf. As a test, I then scanned table 3 for another title with a big jump in final use and found one with marks in exactly the same pattern, for issues on shelf at the same time. Other questionable instances include series of little red triangles on some journal issues, which could of course mean that someone read four or five articles in each issue. However, one cannot go on to second-guess data for a large number of titles. Milne and Tiffany devised reasonable methods appropriate for the size of their collection to guard against and identify user tampering in their survey; procedures unfortunately unworkable for tens of thousands of journals.

**DIRECTIONS FOR FURTHER RESEARCH**

What are the implications inherent in the two approaches to counting periodical use? Prospective designers of use studies should reflect on the strengths and weaknesses of both methods, the resources available for their surveys, what types of use can be monitored most easily in their libraries, and which are meaningful for their purposes. Unlike opinion surveys that poll faculty or other users on titles they cannot do without and need for research, these methodologies produce numbers; the investigator should be aware of errors likely to be encountered, how to minimize them, and how to estimate their magnitude.

When a survey is initiated, the purposes of librarians might run counter to the perceived needs of users who see their interests threatened and who suspect cancellations in a time of decreasing library budgets and materials cost inflation. While libraries publicize surveys and try

---

**TABLE 5**

**JOURNAL USE GROUPED BY LC CLASS FOR PHYSICAL VS. LIFE AND ENVIRONMENTAL SCIENCES**

<table>
<thead>
<tr>
<th>LC Class Ranges</th>
<th>No. Titles</th>
<th>Sweep Count &quot;S&quot;</th>
<th>Check-off Count &quot;C&quot;</th>
<th>&quot;S&quot; &gt; &quot;C&quot;</th>
<th>Increase/Decrease (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>BF, HA, Q, QA, QB, QC, QD, QE, T, TA, TH, TJ, TK, TN, TP, TS</td>
<td>627</td>
<td>15,126</td>
<td>11,016</td>
<td>433</td>
<td>-27</td>
</tr>
<tr>
<td>G, GB, QH, QL, QP, QR, S, TC, TD</td>
<td>141</td>
<td>2,370</td>
<td>3,262</td>
<td>50</td>
<td>+38</td>
</tr>
<tr>
<td>Total</td>
<td>768</td>
<td>17,496</td>
<td>14,278</td>
<td>483</td>
<td>-18</td>
</tr>
</tbody>
</table>
to enlist user support, this might be difficult if fear and distrust trigger user behavior that runs counter to the aims of library studies and muddies the anticipated results. Therefore, it would be informative for researchers intent on using the self-reporting methodology to record pick-up counts and also check-off counts on current issues for a sample period of time. This would not provide comparative data on individual titles, unless the pick-up count is kept that way, but would compare the volumes of use obtained by both methods and establish a numerical relationship between them. Alternatively, just as Wenger and Childress monitored user compliance in a reshelving study, so could one monitor check-off use in a self-reporting study by observing users' actions. A complication would be keeping an eye on users to see whether a check-off is actually made, somewhat harder than observing a simple reshelving. This might mean following a person away from the stacks. Unless surveillance is unobtrusive, users will be irritated, inconvenienced, and react negatively to what seems to be invasive behavior on the part of library staff. Nobody likes Big Brother watching, although remote camera monitors are now commonplace in banks, airports, malls, and stores.

The check-off method itself is open to manipulation that cannot be controlled by librarians' intervention. It depends entirely on user participation. The validity of all our efforts is based on the users' integrity and willingness to cooperate, so that each recorded use is precisely that, no more, no less. In return for not having to pick up after them and counting journals, we accept what they tell us their use of the collection is, and we let them create the data that we ultimately will evaluate and process, by asking them to mark a paper label on the front cover of each unbound issue they use. In this way, we are letting the user define "use," and we are not able to stipulate what the minimal level of user interaction with the journal should be in order to constitute use. Some examples of use, on a scale of increasing significance, are: looking at the table of contents; browsing; scanning a single article; photocopying an article; taking notes; reading a whole article. Milne and Tiffany used the check-off method in order to obtain this entire gamut of uses in their survey, because all of them could result in an interlibrary loan if the subscription were cancelled. But reading tables of contents of journals is more and more obviated by the availability of Current Contents online in conjunction with online catalogs, and no longer requires physical contact between user and journal. Such use is not recorded, nor is use of table of contents services via the Internet (Springer Verlag journals, CARL UNCOVER, to mention just two). Wilson databases mounted on online catalogs can be searched in the library or remotely for a journal title as a source to produce a listing of the latest articles. The electronic format promotes current awareness and browsing, and users with this kind of access might bypass the current periodical shelf unless they already have a specific article in mind. Nor is all photocopying done by the end user of an article; one professor who claimed to be a frequent reader of a seemingly little-used journal up for cancellation discovered that his secretary had never checked off use, because she was "only photocopying." Additionally, some libraries provide free photocopying to the users they serve; this copying is done by student staff in a copy center. Recording this use on the cover could be done by the patron, copy service personnel, both, or neither. Here record-keeping can become confusing and might involve double check-offs. Such document delivery via surrogates or remote ways of accessing a journal's table of contents no longer contributes to use data as measured traditionally when the only way to use materials was at the site by users themselves.

The check-off method is relatively low in cost; only the final transfer of data from journal spines to tally sheets involves an intensive effort of several days from library workers, and it is suitable for high-volume surveys when daily costs of data keeping and reshelving must be controlled, and additional workers cannot be hired to monitor data flow on a daily basis. The accompanying risk is that evidence of
low use, or non-evidence of use, can quickly be altered with a few strokes of the pen, as by one professor who remarked, "I come in here and check off everything, but after a while I get bored." This type of behavior is aptly described as "blitz ticking" by Milne and Tiffany, in that it is fast and furious early in a study and decreases when the user loses interest. In addition, under-reporting is a source of error to be considered, in that it robs us of a record of uses made by indifferent patrons. Between Scylla and Charybdis, the use study researcher must be alert to these deviations.

By comparison, with the sweep method, or reshelving of journals, the method itself identifies what constitutes "use": the item has been removed from its customary location and must be replaced by a staffer in order to be counted. The user has been eliminated from the data recording process. Instead, library staff have assumed control of this survey step, distancing it from further intervention by the user. While the exact type of use is not known, one supposes it to be more than browsing the table of contents, something many users do while standing in the current periodical stacks. Their unwanted reshelving tends to reduce the measure of actual use by 36% to 75% (Wenger and Childress 1977, Taylor 1976), to the despair of survey takers. However, because each displacement must be followed by a reshelving in order to be counted as a use in the survey, the possibility of "ballot box stuffing" is here reduced and would require real commitment on the part of a user wishing to boost his favorite title. Control over the counting process means more work for library workers, because reshelving must be done frequently to eliminate loss of data when issues are used more than once while off the shelf, and daily records must be kept for all titles, a daunting task for large collections.

Finally, circulation data, when available, are an objective measure of use. While these data are accurate, they are usually limited to a small number of journals on reserve. Current periodicals generally do not circulate in academic libraries, but if they did, we soon would know what is used and what isn't, and circulation departments would be swamped. Reserve status is inhibiting to free and casual use such as browsing, in that the inconvenience to the patron of charging out an item tends to inhibit all but the most serious need.

CONCLUSIONS

What four years ago were characterized by a reshelving survey as heavily used current journals now exhibit a 40% drop in use according to a year-long study that relies entirely on user participation. In addition, 627 current journals in the physical sciences showed an average drop in use of 27%, whereas 141 biology and life science related titles showed an average 38% increase in use as compared to four years earlier. In addition, 35% more uses for all journals are reported than are accounted for by library pick up counts for the same year, suggesting that multiple uses are occurring and are recorded in the current periodical stacks during browsing. It has been noted elsewhere that it is a disadvantage to use the check-off method in open stacks, where one has to rely entirely on the compliance of users, and it is difficult to devise a correction factor for non-cooperating users (Christiansen, Davis, and Reed-Scott 1983). Unless there are procedures in place for estimating levels of non-compliance and intentional interference with impartial data collection, as a stand-alone measure of periodical use the check-off method introduces the uncertainties produced by under-reporting indifferent users and over-reporting enthusiastic users, and needs to be approached with caution.

WORKS CITED


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The Documentation of Electronic Texts Using Text Encoding Initiative Headers: An Introduction

Richard Giordano

A general introduction to the form and function of the TEI header is given and its relationship to the MARC record is explained. The TEI header's major strength is that it documents electronic text in a standard interchange format that should be understandable to both librarian catalogers and text encoders outside of librarianship. It gives encoders the ability to document the electronic text itself, its source, its encoding principles, and revisions, as well as nonbibliographic characteristics of the text that can support both scholarly analysis and retrieval. Its bibliographical descriptions can be loaded into standard remote bibliographic databases, which should make electronic texts as easy to find for researchers as texts in other media, including print. Finally, it represents a long collaboration between librarians and members from a range of academic disciplines outside of librarianship, and may thus be a model of such collaboration. The header's major weakness is that the default header does not provide the ability for fine-grained retrieval within or across texts that users might want now or in the future as networked research environments improve.

The Text Encoding Initiative (TEI) is a multilingual, international project that developed guidelines for the preparation and interchange of electronic texts for scholarly research. Since its work began in 1987, its activities have served humanities scholarship generally, and have become important to a range of applications in language industries (including publishing), as well as across academic disciplines. This article is intended primarily for librarian catalogers and others who collect and catalog electronic texts. A treatment for humanities encoders (Giordano 1994) appears elsewhere.

Responsibility for appropriate sections of TEI's planned guidelines for encoding machine-readable text rested with four committees. These were the Committee on Representation (which provided for the adequate representation of printed and manuscript versions of text), the Committee on Text Analysis and Interpretation (which provided tags for textual features not conventionally represented typographically in a text), the Committee...
on Metalanguage Issues (which provided a syntax for the tag set for the guidelines) and the Committee on Text Documentation (which designed the TEI Header) (Ide and Sperberg-McQueen 1994).

In April 1994 the TEI issued the first full version of its Guidelines for the Encoding and Interchange of Machine-Readable Texts (Sperberg-McQueen and Burnard 1994), which provides encoding conventions for a range of text types and features relevant for research in language technology, the humanities, computational linguistics, and the social and behavioral sciences. It represents a major milestone—before the TEI it had not been possible to achieve consensus among research communities about encoding conventions to support the interchange of electronic texts. It is reasonably safe to assume that many electronic texts will be encoded according to the recommendations of the Guidelines (some major text-based projects are already following the Guidelines), and that TEI-encoded texts will form an increasing share of collections in libraries and other repositories.

Every TEI-conformant text is prefixed by a “prolog” that documents the encoded text itself, its source(s), its encoding practices, contextual nonbibliographic information, and its revision history. This prolog is called the TEI header, which provides information for people using texts, for software processing them, and for catalogers and archivists collecting them.

The TEI header can be viewed as a set of descriptions and declarations that provide the electronic equivalent to the title page attached to a printed book. Additionally, the TEI header constitutes the equivalent to codebooks or introductory manuals customarily accompanying electronic datasets.

The TEI header was designed by the Committee on Text Documentation, initially composed of archivists and librarians from both Europe and North America who had experience in cataloging, collecting, and describing electronic sources. The committee’s work was guided by longstanding documentation principles for describing both texts on paper and machine-readable data files. Their work also was influenced by other TEI committees and work groups unrelated to the library and archival professions, specifically the work group on spoken language, which did much of the work on the profile description part of the TEI header (Johansson 1984). As a consequence of input from other members of the Text Encoding Initiative, the TEI header describes both bibliographic and nonbibliographic information and supports, in addition to the identification and retrieval of an encoded text, the machine analysis of encoded text.

**Brief Overview of the TEI Header**

This overview explains the main features of the TEI header, what it is, and what it does. It does not attempt to document it fully. The reader should consult the Guidelines for detailed and full information and recommended practices.

The TEI header, or `<teiHeader>`, is composed of four major functional parts that document the bibliographic description of the electronic text and its source, the encoding of the text, nonbibliographic information that characterizes the text, and a history of updates and changes made to the electronic text. These major elements are referred to as `descriptions`.

The bibliographic description of the encoded text and its source, which is essential for the retrieval of an item, forms the File Description, or `<fileDesc>`.

Documentation on the relationship of the encoded text to its source, for instance a documentation of editorial decisions or procedures, is provided in the Encoding Description, or `<encodingDesc>`. Nonbibliographic information characterizing various descriptive aspects of a text, which is useful for the human or machine-assisted analysis of text, forms the Profile Description, or `<profileDesc>`. Finally, the history of updates and changes to the machine-readable text makes up the Revision Description, or `<revisionDesc>`. Together, these elements allow users to
identify an encoded text, understand the editorial decisions made when the text was encoded, have documentation of the characteristics of the text, and view a history of any revisions to the transcription of the text. A skeletal representation of the header looks like this:

```xml
<teiHeader>
  <fileDesc> . . . </fileDesc>
  <encodingDesc> . . . </encodingDesc>
  <profileDesc> . . . </profileDesc>
  <revisionDesc> . . . </revisionDesc>
</teiHeader>
```

Of these major elements, only the file description is mandatory.

**THE FILE DESCRIPTION**

The `<fileDesc>` is an electronic analogy to the title page of a book. Because any work without a title page is difficult or impossible to identify accurately, the `<fileDesc>` is the sole required element of the TEI header. The `<fileDesc>` should not be confused with a finished catalog record, but it can be used by a librarian cataloger for the creation of a catalog record, or by anyone to derive the correct bibliographic citation for the encoded text. In addition to providing bibliographic information about the encoded text itself, it provides citation information regarding the source (or sources) from which the encoded text was derived.

Because the bibliographic description of a machine-readable text resembles the bibliographic description of a book or manuscript, the `<fileDesc>` has been closely modeled on existing descriptive standards in library cataloging, specifically the Anglo-American Cataloging Rules, 2d ed., 1988 revision (AACR2 1988), the ISBD(G) (General International Standard Bibliographic Description 1977), and the USMARC record format. UNIMARC was not sufficiently stable at the time of the header's development to be used as a model (Crawford 1989, USMARC 1988). Elements of the `<fileDesc>` have been given explicit names that, where possible, parallel the names of areas in ISBD and AACR2, and fields in MARC. Anyone familiar with a MARC record and ISBD should immediately recognize the elements of a TEI header and should be able to derive accurate local cataloging copy from it.

The file description is composed of three mandatory and four optional elements. (Equivalent MARC fields are provided in parentheses. For details on mapping TEI headers into MARC records, see chapter 24 of the Guidelines [Sperberg-McQueen and Burnard 1994, 672–76].) These are:

- `<titleStmt>` (mandatory, equivalent to the 240 or 245 MARC fields)
- `<editionStmt>` (optional, equivalent to the 250 MARC field)
- `<extent>` (optional, equivalent to the "physical description" MARC field, 256 or 3XX depending on local practice)
- `<publicationStmt>` (mandatory, equivalent to the 260 MARC field)
- `<seriesStmt>` (optional, equivalent to 4XX MARC fields)
- `<notesStmt>` (optional, equivalent to 5XX MARC fields)
- `<sourcesDesc>` (mandatory, can be mapped to the "source of data" note [537 in RLIN MDF format])

Because these elements are familiar to catalogers, we will discuss only the three mandatory elements.

The three required elements of the `<titleStmt>` provide a reference to the source from which the electronic text was derived; they allow a user to identify a unique electronic text and access it from a publisher or distributor. The `<titleStmt>` element, like the title statement in a bibliographic record, contains information about the title of a work and those responsible for its intellectual content, that is, a title and one or more "statements of responsibility." Formally, these "statements of responsibility" are `<title>` (equivalent to 24X$a), `<author>` (equivalent to a 245 $c in MARC, not the 1xx), `<sponsor>` (equivalent to 24X $c), `<funder>` (equivalent to 24X $c), and `<principal>` (as in the principal investigator, 24X $c).

Alternatively, encoders can use a general `<respStmt>` to identify those responsible for the intellectual content of a work where specialized elements do not suffice or do not apply. For instance, a
<titleStmt> in a TEI header attached to an encoded version of Thomas Paine's *Common Sense* would look something like this:

```xml
<titleStmt>
  <title>Common sense, a machine-readable transcription</title>
  <respStmt><resp>compiled by</resp>
    <name>Jon K. Adams</name>
  </respStmt>
</titleStmt>
```

A more formal title statement may look like this:

```xml
<titleStmt>
  <title>Notebooks of a computer pioneer, Tom Kilburn; a machine-readable transcription</title>
  <author>Tom Kilburn</author>
  <sponsor>National Archive for the History of Computing</sponsor>
  <funder>Simon Engineering Fund</funder>
  <principal>Martin Campbell-Kelly</principal>
  <respStmt>
    <name>Jon Shapiro</name>
    <resp>data entry, scanning and proof correction</resp>
  </respStmt>
  <respStmt>
    <name>Carole Goble</name>
    <resp>created and maintained pre-SGML full text and image database</resp>
  </respStmt>
  <respStmt>
    <name>Anna Garry</name>
    <resp>converted full text database to TEI markup</resp>
  </respStmt>
</titleStmt>
```

The `<titleStmt>` (the equivalent to the 260 MARC field) is the second mandatory element in the file description and groups information concerning the publication or distribution of an electronic or other text. Like the `<titleStmt>`, it can contain a simple prose description or groups of formal elements. At least one of the following three elements (all equivalent to the 260$b' in MARC) must be present unless the `<publicationStmt>` is given as prose. These are:

```xml
<publisher> <distributor> <authority> (the person or entity responsible for making an electronic file available, other than the publisher or distributor).
```

If any of these elements are used, they may be followed by one or more of the following elements:

```xml
<pubPlace> (260$a) <address> <idno> (such as ISBN or ISSN) <availability> <date> (other than the creation date)
```

Local practice will determine the appropriate MARC fields for `<address>`, `<idno>`, and `<availability>`. Restrictions on access should normally be placed in the 506 field, while the place where an item may be ordered may be located in a local notes (590) field. If local practice warrants it, the address of the publisher should be indicated in the 260 field.

Thus, a prose `<publicationStmt>` can look like this:

```xml
<pubPlace> (260$a) <address> <idno> <availability> <date> To be distributed for purposes of teaching and research only.<p>
```

A `<publicationStmt>` using elements to group information would look like this:

```xml
<pubPlace> <address> <idno> <availability> <date>
```

The `<sourceDesc>`, the last mandatory element in the `<fileDesc>`, is used to record details of the source or sources of an electronic text. This might be a manuscript or printed text, another computer file, an audio or video recording, or a combination of these. An electronic file may also have no source, if what is being cataloged is an original text in electronic form.

The `<sourceDesc>` may contain a simple prose description or, more usefully, a
structured bibliographic citation specifying the provenance of the text. (Recommendations for the form of citations are given in section 5.2.7 of the Guidelines.) The following are some possible \(<\text{sourceDesc}>\) formats.

\(<\text{sourceDesc}>
  \text{<p>No source: created in machine-readable form</p>}\n\)</sourceDesc>

\(<\text{sourceDesc}>
  \text{<biblioStruct lang=FR>}
    \text{<monogr>}
      \text{<author>Eugèn\é Sue</author>}
    \text{<title>Jan, l'infant trouv\é</title>}
    \text{<title type=sub>M\é moires d'un valet de chambre</title>}
  \text{<imprint>}
    \text{<pubPlace>Bruxelles at Leipzig</pubPlace>}
    \text{<publisher>C. Muquardt</publisher>}
    \text{<date>1846</date>}
  \text{</imprint>}
  \text{</monogr>}
\text{</biblioStruct>}
\)</sourceDesc>

Note that a source description containing a full bibliographic reference, like the one in this example (using the \(<\text{biblioStruct}>\) element), might be mapped to a 581 field (note on primary publication), using the ISBD format to separate each data element.

If an encoder chooses to create minimal headers by using prose instead of grouping information in formal elements, very little cataloging expertise is needed. Note that there is no equivalent to the MARC 1XX field in the TEI header. We chose this course primarily because the creator of a TEI header may or may not be trained in cataloging; an encoder should not necessarily be expected to provide full descriptive cataloging of an encoded text when constructing a header. For example, an encoder might be expert in Old Norse poetry, but not know what should go in an \(<\text{author}>\) element because, as many librarians know only too well, deciding on the author is not always a simple matter, especially in cases of multiple authorship, corporate authors, pseudonyms, or where arcane cataloging rules apply. And then there is always the vexing question of the form of the author's name once the author is determined. For instance, it is unreasonable to think that an encoder without reference to a Name Authority File would know the correct form for the name T.S. Eliot. If the Committee on Text Documentation had recommended an explicit \(<\text{author}>\) element when the author was known, some encoders might construe this to mean that the correct author and the correct form of entry must be given. The most likely outcome in this circumstance is that encoders would give nothing.

The Committee on Text Documentation believed that if an encoder, although uninitiated or uninterested in the rules of cataloging, included in the statement of responsibility everyone who was seen to be responsible for the intellectual content of a work along with their role (such as compiler or editor), then a cataloger, not the encoder, could apply both standard AACR2 rules and local practice to determine the appropriate author and others responsible for the work and the form of their names.

Thus, the file description exemplifies a principle of shared responsibility for the documentation of scholarly material. The intention was not to place the burden of documentation on the shoulders of the encoder, but to encourage the encoder to provide enough accurate information to librarians and others in the documentation community so that professional cataloging could be carried out both effectively and efficiently.

**THEENCODINGDESCRIPTION**

The relationship between the encoded text and its source or sources is described in the Encoding Description, or \(<\text{encodingDesc}>\). The roots of the \(<\text{encodingDesc}>\) can be found in social science data
archives that collect codebooks documenting how phenomena are encoded in a particular dataset. Such information as variable names, value labels, record layout, sampling procedures, etc. are the sine qua non of every machine-readable data file. An encoded text, however, is not just another electronic file that can be categorized like a data set of numbers, because text, unlike a file of numbers, can contain multiple hierarchies and multiple meanings. For this reason, the Profile Description was developed for the TEI header largely through the efforts of the Spoken Language and Corpus Linguistics workgroups.

The <encodingDesc> documents editorial rationales, decisions, and practices made both before and during the transcription of a source text into encoded machine-readable form. Such documentation can include a prose description of the aim or purpose for which the file was encoded, the method or rationale used in sampling texts in the creation of a corpus or collection, editorial principles and practices, including whether or how the text was normalized during transcription, how the encoder resolved ambiguities in the source, what levels of encoding or analysis were applied, how canonical references are constructed, and definitions of any classification codes introduced in the text by the encoder.

A minimal <encodingDesc> might look something like this:

```xml
<encodingDesc><p>Blank lines and multiple blank spaces, including paragraph indents, have not been preserved.</p>
</encodingDesc>
```

The <encodingDesc>, moreover, canhold structured information in its subelements. If different editorial practices were applied to different parts of the text (for instance, different sampling procedures used throughout a large corpus [Dunlop 1994]), one can repeat the <encodingDesc> element in the TEI header to reflect the different editorial practices and assign an ID attribute to each one. The value of the ID attribute can then be linked to the specific part of the text (which would have the same ID value) where those editorial principles apply.

A simple, but structured, example of the <encodingDesc> for a typical project that converts texts from sources of American history for use in a course on historical methodology might look something like this:

```xml
<encodingDesc>
<projectDesc><p>Transcription of the US Constitution for the teaching of a first-year course in historical methodology at Barnard College, Columbia University.</p>
</projectDesc>
<editorialDecl>
<correction><p>Errors in scanning and transcription controlled by using the Microsoft Word, v.5.0, spell checker.</p>
</correction>
</editorialDecl>
</encodingDesc>
```

The 567 field (notes on methodology) appears to be the most appropriate MARC location for this information, although this field is normally intended for methodologies in the social sciences. Practically, it would be wise to map the elements of the <encodingDesc> as separate 567 fields.

**The Profile Description**

The <profileDesc> is an optional element that provides details characterizing various descriptive nonbibliographic aspects of the text, such as language usage, the situation in which the text was produced, and the participants and their setting. The <profileDesc> enables descriptive aspects that do not identify the work, as bibliographic elements would (and which go beyond information typically found in codebooks), to be recorded within a single unified framework. The <profileDesc>, which resulted largely from input from the Spoken Language workgroup, is of most use to linguistic-based spoken text projects, although many of its features can be applied to written text, such as drama, or to those projects for which it is desirable to track multiple speakers or voices.
though prose. (See Johannson 1984 and Dunlop 1994 for a fuller discussion.)

The core <profileDesc> element has three optional components:

<creation>: contains information about the creation of a text. This may differ from the publication date in the bibliographic description, for example giving the date and place of composition, and may be of acute relevance to studies of linguistic variation across space and time.

<langUsage>: describes the languages, sublanguages, dialects, etc. represented within the text.

<textClass>: groups information that describes the nature of the text in terms of a standard classification scheme.

A brief profile description might look like this:

<profileDesc>
  <creation>
    <date value='1989-08'>August 1989</date>
    <place>Brooklyn, New York</place>
  </creation>
  <langUsage>
    <language id=EN wsd=wsd.en>
    <language id=SP wsd=wsd.sp>
    <p>Approximately 95% of the text is in American English with quotations from first- and second-generation Italian immigrants to Brooklyn; the remainder is in transcribed Spanish spoken by first- and second-generation Puerto Rican immigrants to Brooklyn.</p>
  </langUsage>
  <textClass>
    <keywords scheme=LCSH>
      <list><item>Brooklyn (New York, N.Y)—Biography.</item><item>Brooklyn (New York, N.Y)—Social life and customs.</item>
    </list>
    <classCode scheme=LC>F129.B7</classCode>
  </textClass>
</profileDesc>

Such a classification system, while useful to most projects, may be too coarse when applied to the analysis of language in spoken text or when applied to some written text (such as drama), collections, or corpora. In these cases the <profileDesc> allows the encoding of a high degree of classificatory information about the text itself, the voices of characters or participants within it, and the setting. This information can be recorded using optional extensions to the <profileDesc>: the text description or <textDesc>, the participants description or <particDesc>, and the setting description or <settingDesc>.

Formal situational information may be included in the <textDesc> to support the analysis of speech or written text. Such situational parameters might include the medium by which the text is delivered or experienced, the internal composition of a text or text sample (for instance, documenting a complete text, a fragment, a composite text), the nature and extent of indebtedness or derivation of the text to others, the social context for which the text was realized or intended (for instance, as entertainment, or for religious and ceremonial purposes, etc.), the interaction between those producing and experiencing the text, whether or not a text was prepared or spontaneous, and the purpose of the text. (See Sperberg-McQueen and Burnard 1994, 648–658 for more details.)

Situational parameters describe the situation within which the text was produced or experienced, and thus characterize it in a way relatively independent of any a priori theory of text types. Rather than insisting on a system of discrete text types, which in practice would be impossible to formulate, the Guidelines recommend the use of situational parameters that can be used in combination to supply distinguishing descriptive features of individual texts. When text types are used in combination with situational parameters, the internal structure of each text type can be specified in terms of the parameters proposed. This, in contrast to discrete categories based on type or topic, allows for the relatively continuous characterization of texts and supports meaningful comparisons across corpora, allowing analysts to build their own text types based on the particular parameters of interest to them. Such descriptions are
equally applicable to spoken and written texts.

An informal domestic conversation might be characterized as follows:

<textDesc id=t1 n=’Informal domestic conversation’>
  <channel mode=s>informal face-to-face conversation</channel>
  <constitution type=single>each text represents a continuously recorded interaction among the specified participants</constitution>
  <derivation type=original>
    <domain type=domestic plans for coming week, local affairs</domain>
    <factuality type=mixed>mostly factual, some jokes</factuality>
    <interaction type=complete active=plural passive=many>
      <preparedness type=spontaneous>
        <purpose type=entertain degree=high>
          <purpose type=inform degree=medium>
        </purpose>
      </preparedness>
    </interaction>
  </derivation>
  <channel mode=w>print</channel>
  <domain type=art>
    <factuality type=fiction>
      <interaction type=none>
        <preparedness type=prepared>
          <purpose type=entertain degree=high>
            <purpose type=inform degree=medium>
          </purpose>
        </preparedness>
      </interaction>
    </factuality>
    <preparedness type=prepared>
      <purpose type=entertain degree=high>
        <purpose type=inform degree=medium>
      </purpose>
    </preparedness>
  </domain>
</textDesc>

We have noted that situational parameters may be applied to texts other than to spoken texts. Consider this example of situational parameters applied to a novel:

<textDesc n=’novel’>
  <channel mode=w>print</channel>
  <constituion type=single>
    <derivation type=original>
      <domain type=art>
        <factuality type=fiction>
          <interaction type=none>
            <preparedness type=prepared>
              <purpose type=entertain degree=high>
                <purpose type=inform degree=medium>
              </purpose>
            </preparedness>
          </interaction>
        </factuality>
        <preparedness type=prepared>
          <purpose type=entertain degree=high>
            <purpose type=inform degree=medium>
          </purpose>
        </preparedness>
      </domain>
    </derivation>
  </channel>
  <firstlang>English</firstlang>
  <langKnown>Italian</langKnown>
  <langKnown>French</langKnown>
  <residence>New York City</residence>
  <education>medical school</education>
  <occupation>Endocrinologist</occupation>
  <socioeconomic status source=Thernstrom code=HWC>
</textDesc>

It is possible, in addition, to document information about participants in a spoken text or persons named or depicted in written text, including demographic and descriptive information about them and the relationships among them. The <participant> element is used for this purpose. Individual speakers, or groups of speakers, can be named and identified by a code (or ID attribute), which can then be used to identify the speaker throughout the text. This allows an analyst to identify multiple speakers or voices in the text, learn detailed information about them, and then track the participants’ speech throughout the text. The Guidelines provides a set of elements to identify the name of the speaker, place of birth, residence, education, occupation and so on, but in practice such details will vary enormously for different forms of analysis; users of TEI P3 are encouraged to customize them to fit the needs of their projects.

An individual appearing in a text might be described either informally or formally. For instance, consider the following informal prose description of a character:

<participant id=P1 sex=M age=39>
  <birth date=’1953-09-28’></birth>
  <place>Newark, NJ</place>
  <firstLang>English</firstLang>
  <langKnown>Italian</langKnown>
  <langKnown>French</langKnown>
  <residence>New York City</residence>
  <education>Medical school</education>
  <occupation>Endocrinologist</occupation>
  <socioeconomic status source=Thernstrom code=HWC>
</participant>

Although a prose description might be sufficient for most projects, demographic information may be described formally, and lends itself to machine capture and analysis. For example, consider the formal description of the same character:

<participant id=P1 sex=M age=39>
  <birth date=’1953-09-28’></birth>
  <place>Newark, NJ</place>
  <firstLang>English</firstLang>
  <langKnown>Italian</langKnown>
  <langKnown>French</langKnown>
  <residence>New York City</residence>
  <education>Medical school</education>
  <occupation>Endocrinologist</occupation>
  <socioeconomic status source=Thernstrom code=HWC>
</participant>

Finally, the setting or settings in which the language interaction takes place can be described in the <settingDesc> element. The information here may contain prose or it may be grouped in a series of
subelements, depending on the level of analysis required by the encoder. For instance, the setting can be described informally as follows:

```
<settingDesc>
  <p>The time is early summer, 1993. P1 is doing the dishes. P2 is in the living room chair reading an unidentified newspaper. P3 is watching the news on television. P4 (a television news broadcaster) is in a broadcasting studio in New York.</p>
</settingDesc>
```

This description is useful as codebook information, may be sufficient for the purposes of most projects, but it would be difficult for use in machine analysis. The following formal setting description may make computer processing tractable.

```
<settingDesc>
  <setting who="P1">
    <place>New York City</place>
    <date value=1993>early summer, 1993</date>
    <locale>kitchen sink of New York apartment</locale>
    <activity>washing dishes</activity>
  </setting>
  <setting who="P2">
    <place>New York City</place>
    <date value=1993>early summer, 1993</date>
    <locale>living room chair of New York apartment</locale>
    <activity>reading newspaper</activity>
  </setting>
  <setting who="P3">
    <place>New York City</place>
    <date value=1993>early summer, 1993</date>
    <locale>living room of New York apartment</locale>
    <activity>watching news on television</activity>
  </setting>
  <setting who="P4">
    <place>New York City</place>
    <date value=1993>early summer, 1993</date>
    <locale>broadcasting studio, New York City</locale>
    <activity>reading news</activity>
  </setting>
</settingDesc>
```

The `<settingDesc>` can thus provide researchers with a powerful tool to identify and track each participant throughout the text by the use of a formal description, or can be used solely for documentation by using informal prose descriptions.

The `<profileDesc>` is the most problematic element in the TEI header for librarians, because it provides a detailed description of nonbibliographic aspects of the text, which can be used for both retrieval and analysis. There is no place in the MARC record designed to hold this information. Catalogers have a number of alternatives that will be based on local practice and local cataloging philosophy. They can, of course, ignore the `<profileDesc>`, or they can map the `<profileDesc>` (with its TEI tags) into one or more 590 fields and develop software for retrieving them. They may also keep a copy of the TEI header (such as an Independent header, discussed below) intact on some machine, and have the MARC record point to the header that in turn will point to the encoded text.

**THE REVISION DESCRIPTION**

The final part of the TEI header is the Revision Description, or `<revisionDesc>`, which provides a detailed log in which each change made to a text can be recorded. This log is very similar to logs kept of data files in the social sciences. It is an especially important element for recording changes to a file as it is passed from system to system or from researcher to researcher.

The revision description consists of the following tags:

```
<revisionDesc>: summarizes the revision history of a file
<change>: summarizes a particular change or correction made to a particular version of an electronic text that is shared among several researchers
<date>: contains a date in any format
<respStmt>: supplies a statement for someone responsible for the intellectual content of text, edition, etc., where specialized elements for authors, editors, etc. do not apply
<item>: contains one component of a list
```
An example of a change log might look like this:

```
<revisionDesc>
  <change><date>6/4/93</date>
  <respStmt><name>RG</name><resp>ed.</resp></respStmt>
  <item>proofread SJW's work</item>
</change>
<change><date>6/2/93</date>
  <respStmt><name>SJW</name><resp><data entry></resp></respStmt>
  <item>Changes to pretty-up printed version</item>
</change>
</revisionDesc>
```

Like the <profileDesc>, the <revisionDesc> is problematic for catalogers for two reasons: first, there are no MARC fields that deal specifically with changes of these sorts, and it appears that the best appropriate field for this would be a 59X field; second, it is unclear how revisions might affect the “version” of an electronic text. The current edition of the Guidelines offers little help in this regard.

**THE SIZE AND COMPLEXITY OF THE TEI HEADER**

From the overview above, it is easy to see that the TEI header can become quite large, and in some cases may even exceed the size of the text it is documenting! The size of the TEI header, however, depends on the nature of the project and the amount of documentation that encoders wish to attach to a text. It is not intended, however, that all of the elements recommended in the Guidelines, nor even the formal structures illustrated in this article, be present in every TEI header. At one extreme, an encoder may expect that the TEI header will be needed to provide only minimal bibliographic information of the text adequate to local needs, or to be shared with a small number of close colleagues. Encoders may wish to describe their texts only in detailed prose, leaving it to professional catalogers, archivists, and others to create structured subelements that are tractable by machine. At the other extreme, wishing to ensure that their texts can be used for the widest range of applications, encoders may want to document both bibliographic and descriptive information as explicitly as possible, so that no prior or ancillary knowledge about the text is needed in order to process it. The TEI header in the latter case will be very full, approximating the kind of documentation often supplied in the form of a manual. Most texts will lie somewhere between these extremes; large corpora and linguistics-based research projects in particular will tend toward the latter.

The Guidelines make no recommendations on how a particular project must encode a TEI header, other than to require that at least an informal <fileDesc> be included for all encoded texts. The Guidelines do, however, offer guidance on creating minimal and recommended headers (Sperberg-McQueen and Burnard 1994, 134–35), as well as on creating freestanding or Independent headers that can be sent to libraries and other sites without text attached to them (Sperberg-McQueen and Burnard 1994, 667–78). Contingent resources such as time, staff, and money, as well as the intended purposes of the encoded texts, should determine the level of encoding, not printed guidelines. Once the participants on a project decide which information is to be encoded, the Guidelines will provide recommendations on ways to proceed. Some elements of the TEI header may be difficult for those unfamiliar with bibliographic description to understand. Potential users uninstructed into library practices may be wary of even attempting to construct a TEI header.

It is not the TEI's intention that everyone who creates a TEI header spend several semesters in library school to learn which elements to include. Rather, we anticipate that encoders outside of librarianship will provide much information in the <fileDesc> in prose and then leave it to a cataloger at a text repository to structure the information into appropriate subelements or to input (or automatically convert) that information into a local bibliographic system. What matters when encoders construct a TEI header is not the structure of the information, but instead
its completeness and fidelity to the encoded text. Highly structured and accurate bibliographic information, especially that contained in the <fileDesc> of the TEI header, however, will greatly ease the burden of catalogers. Such information can be loaded directly into online catalogs with relatively little human intervention, with the exception of the <profileDesc> and possibly the <revisionDesc>. If header information is already contained on a database, it might be a matter of generating a TEI header automatically from that database (as was done with the British National Corpus [Dunlop 1994]) and transferring it to a bibliographic file.

USE OF THE TEI HEADER TO SUPPORT DOCUMENT RETRIEVAL AND ANALYSIS: PROSPECTS AND PROBLEMS

TEI headers can be distributed and published in paper or electronic form as Independent headers (that is, the TEI header is physically separated from the text it describes) and distributed to libraries and other repositories to support online bibliographic retrieval. Two advantages of this approach mentioned by Dunlop (1994) are that users save local storage since they do not need the full text in order to make selections, and users need not undertake any copyright responsibilities defined in end-user agreements. Most important, TEI headers loaded into or referenced from standard bibliographic databases allow users to identify electronic texts as easily as texts in other formats, including print. Linked with easily accessible bibliographic databases, the Independent TEI header should, in the near future, engender widespread use of electronic texts and encourage people to encode texts for distribution, rather than simply for local use.

As we have seen, it is not a simple matter to load all of the elements from a TEI header to the MARC record, although the majority of structured file descriptions might be mapped to a MARC record with little or no human intervention. There are limitations with the current TEI header's ability to provide fine-grained retrieval that might be important for some applications. The Guidelines provide encoders with a relatively fixed set of tags and attributes (which, of course, can be extended by the user), but the values given to those tags and attributes are, for the most part, open. For instance, one encoder might encode <local> New York City </locale>, another might encode <locale> Manhattan </locale>, and yet another might encode <locale> Upper West Side </locale> to designate the same place. This uncontrolled vocabulary, and its form, may seriously affect retrieval unless it is limited through the use of an authority file or its equivalent.

The form of personal names is another potential problem. The lack of specificity in the Guidelines for determining the form of names, subjects, or uniform titles or serials is the result of twin circumstances. First, the Text Encoding Initiative was concerned primarily with providing users with a set of recommended tags and guidelines for using them, not rules for determining the values that encoders would use with those tags. Second, and more significantly, the encoders themselves and relevant international and professional bodies are best positioned to address the syntactic and semantic questions of standardized content formats and values. The specific form of values is very much related to the intended use of the encoded texts, the purposes of a project, and the "language" of the discipline to which the text or encoding project is connected. The TEI could not issue specific guidelines or make recommendations that would apply across a range of disciplinary or professional orientations. The Guidelines therefore assume that encoders or documentation professionals who encounter TEI-encoded texts will refer to the work of professional organizations such as the Library of Congress, the American Library Association, and the International Standards Organization, or discipline-specific organizations (for instance art documentation associations) for guidance.

The model of "documentation" that guided much of the work of the Committee on Text Documentation was informed by standard library and archival practice,
and this resulted in the default structure of the TEI header, which is adequate to the needs of many applications. The reliance on standard library practice is both a strength and a weakness. Typically, documentation in the library community involves providing enough descriptive information to users so that a text itself can be uniquely identified. The Committee on Text Documentation thus made reference to an existing working model as defined in AACR2 for the cataloging and description of machine-readable data files. Consequently, the committee began work under the assumptions embedded in those rules: that users would need information in the form of an index and codebook to identify a text for retrieval, and that they would use the index and codebook information the same way as they would when identifying a social science machine-readable data file stored on tape in a data archive. These assumptions led to the construction of the <fileDesc>, <encodingDesc>, and <revisionDesc>, which document the bibliographic aspects of texts, their encodings, and revisions, and serve as pointers to encoded texts. That is, the mental model of documentation presupposed the traditional notion of an index, which is a physical object (such as a catalog), that points users to another physical object (such as a book) (Gorman 1992).

The problem is that this model of an index points to the electronic text and assumes that it exists only as a separate, unified physical object. Users are characterized as being interested in retrieving only the entire physical object, rather than, say, only parts of it. Thus, in many ways the TEI header at present functions as little more than an electronic analog of the catalog card: one can retrieve the encoded text with information from the <fileDesc>, but there is no mechanism in the default header to navigate through the text or to retrieve portions of it that fit some analytic criteria.

The work of the Text Encoding Initiative in general supports multiple views of texts (as physical objects, typographic objects, linguistic objects, rhetorical objects, etc.) and recognizes that in many situations more than one view of text is needed. It should then come as no surprise to observers that outsiders to library science, notably the Spoken Language workgroup and members of the Corpus Linguistics community, made recommendations to the <profileDesc> that are extremely useful to researchers for the retrieval and analysis of portions of texts (for instance, such linguistic objects as phonemes) that fall outside the traditional boundaries of retrieval one normally associates with librarianship. Consequently, the information contained in the <profileDesc> falls outside that normally contained in the MARC record and, by extension, what would normally be found in online catalogs. The <profileDesc>, for instance, gives encoders the ability to track participants and voices through a text, and extensions to the TEI header that support corpora allow users to isolate sub-portions of the text (Dunlop 1994).

Such features, though useful, are under-specified. Although voices can be traced through a text using the TEI header, no unified structure exists at present in the default header to track the occurrences of intellectual or editorial responsibilities throughout the text. Take a case where there are multiple editors in a text, each responsible for different parts of the text, perhaps edited at different times. The default TEI header does not at present give encoders the ability to identify each editor, isolate which parts of the texts were edited by them, and retrieve them. There are, of course, ways of encoding intellectual interventions, but none are to be found in the default TEI header without extending its content model. Further, the default TEI header does not provide tools for the tracking of editors, voices, or participants across texts. For example, it does not give encoders the ability to isolate an editor in a text, retrieve those parts of the text for which that editor is responsible, and to retrieve parts from other texts for which that editor is also responsible. Such a facility would give researchers the ability to compare, for example, editorial styles across works of different genres. It could be used also to investigate the effects of different situ-
ations on the register of the speech of a given speaker.

The potential solutions to these problems are deceptively simple: there is no reason why one might not redefine the TEI header so that those listed in the <respStmt> are given an ID attribute, and their "interventions" isolated in the text using much the same mechanism that isolates speech by participants in spoken text. The Committee on Text Documentation, however, did not take this approach because it demands that the <respStmt> do something that the library community never intended. The Guidelines would therefore be at variance with standard library practice. Such information can be carried in the <profileDesc>, but encoders then run the risk of encoding redundant information in the <respStmt> (by listing editors of a text) and again in the <profileDesc> (by pointing to areas of the text that they had indeed edited).

One can hazard the proposition, however, that once textual collections are in an electronic environment, in particular a networked electronic environment where texts in arbitrary locations can easily be combined in a screen buffer, the rules that guide the identification and retrieval of texts are altered, for it is important that users have not only the ability to retrieve texts in a traditional sense (as one would retrieve a book), but also some standard mechanisms for the fine-grained retrieval and analysis to support multiple views of texts.

Although the international library and documentation community will sooner or later have to focus on this problem, there are mundane issues that will need to be addressed soon. The difficulty, however, is that no one really knows yet what those mundane issues are. There is no large-scale empirical field experience with the TEI header, only a set of guidelines and a lot of good will. How people will make use of the TEI header; whether people will make use of the TEI header; the ability of the TEI header to provide the documentation that researchers and scholars need; the willingness of encoders to create accurate TEI headers... these are issues that might occupy these pages in the coming years.

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Cataloging Electronic Texts: The University of Virginia Library Experience

Edward Gaynor

An ongoing project at the University of Virginia Library is an effort to provide bibliographic control and access through use of the TEI header and MARC record to SGML-encoded electronic texts collected by the Library’s Electronic Text Center. The Original Cataloging Unit creates both full MARC records and Text Encoding Initiative (TEI)—conformant headers for electronic texts. The author discusses the development of the cataloging workflow and raises issues, both local and national, that confront libraries as they integrate electronic text cataloging into the traditional technical services operations.

Electronic texts have become an increasingly common resource in academic libraries over the last five years. Surveys conducted in 1989 and again in 1991 showed that in the intervening years both the percentage and number of libraries purchasing electronic texts for local use had more than doubled (Price-Wilkin 1991, 13). While many of the texts acquired by libraries are formatted for use with specific software packages, a growing number of libraries are building large collections of texts that are encoded using the Standard Generalized Markup Language (SGML). As these collections expand, libraries are confronted with the age-old problem of obtaining bibliographic control over, and providing bibliographic access to these materials. The cataloging of SGML-encoded texts presents both problems and opportunities for libraries that seek to integrate them into existing library structures and methods.

SGML and the Text Encoding Initiative

SGML was first developed in 1970 as GML (Generalized Markup Language) and evolved through an American National Standards Institute working group into both a national and international standard (Bradley 1992, 272). SGML has been an international standard since October 1986 (ISO Standard 8879); it is widely accepted in the United States, Western Europe, and Japan and is used for a variety of business, industrial, and academic applications (Adler 1992, 556). What exactly is SGML and what does it do? It is probably easiest to describe first what SGML is not: it is not a single set of tags or identifiers and it does not define all possible tags and codes that might be used to mark up a text. It is, rather, a meta-language—a means of describing and defining a particular markup language. Two

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of the most important features of SGML are that it (1) provides for descriptive, as opposed to procedural, markup—that is, it simply states names to categorize parts of a text instead of specifying processes to be carried out; and (2) allows for document type definition (DTD) (Sperberg-McQueen and Burnard 1994, sec. 2). These two features allow SGML-encoded texts to be processed by many different types of software with many different results. Thus, data remain independent of any particular hardware or software configuration, making SGML and SGML-conformant applications extremely flexible.

Much has been written about SGML, both in general terms and in reference to its many particular applications. Readers interested in more detailed descriptions of SGML should consult Bryan 1988, Cover 1991, Goldfarb 1990, or Van Herwijnen 1990. Of the wealth of information available, the Guidelines for Text Encoding and Interchange developed by the Text Encoding Initiative (a joint project of the Association for Computers and the Humanities, the Association for Computational Linguistics, and the Association for Literary and Linguistic Computing) has perhaps the greatest immediate relevance to academic research libraries, especially in reference to the growing area of electronic texts. The Text Encoding Initiative’s purpose in preparing the Guidelines was to develop “a common encoding scheme for complex textual structures in order to reduce the diversity of existing encoding practices, simplify processing by machine, and encourage the sharing of electronic texts.” (Sperberg-McQueen and Burnard 1994, preface). Many libraries that have developed text archives and service centers have adopted the TEI guidelines for processing their texts.

The Electronic Text Center

The University of Virginia Library established an Electronic Text Center in the summer of 1992; the center combines an online archive of SGML-encoded electronic texts with hardware and software for the creation and analysis of text housed in the University Library. The purpose of the center is to provide scholars a body of texts for analysis and to provide support for individual teaching and research projects. Electronic texts are collected from numerous sources including commercial vendors and non-commercial archives, and are created locally at the Electronic Text Center. The center’s holdings include the entire corpus of Old English texts (approximately 3,000 texts); the Chadwyck-Healy English Poetry Database (approximately 1,600 texts); 1,568 titles from the Patrologia Latina database; the Oxford English Dictionary, second edition; and approximately 500 miscellaneous texts (such as the complete works of Shakespeare and Thomas Jefferson), primarily in Modern and Middle English.

Texts are marked up using TEI-conformant SGML (version P2)—generally in accordance with the Oxford Text Archive document type definition (OTA DTD). The texts are stored on an RS6000 model 360 computer (named Etext) with 128 megabytes of RAM. The texts are indexed and searched using Open Text Corporation’s Pat software and can be viewed by using either a locally developed VT-100 client, PowerSearch (an MS-Windows client), or PatMotif (an X-Windows client), as well as in Pat’s command-line mode. The library has also developed a Pat-to-World-Wide Web gateway that uses CGI (Common Gateway Interface) to gain access to SGML structures and return the results to users in HTML (Hypertext Markup Language), thus making the texts available to FORMs-compatible World-Wide Web clients such as Mosaic. The University Library makes the texts as widely available as possible; if there are no restrictions on use, the texts are available for anonymous FTP to all users; and faculty, staff, and students of the university may make copies of the files. The use of some texts is governed by licensing agreements that stipulate that the texts may be used only within the university community.
BEGINNING THE CATALOGING PROCESS

In the fall and winter of 1992, the Electronic Text Center began to collect and create texts at a rapid rate. As the center's collections expanded it became evident that some sort of bibliographic control of the materials was necessary—not only to provide access to users through the online catalog (VCAT), but also to document and control the acquisition and organization of the texts for library staff. In July 1992 the University Library developed a set of guidelines for representing library materials and providing access to those materials in VIRGO (Virginia Online), the library's local implementation of the NOTIS system. The guidelines state that "any information entity that is maintained by the University Library for patron use should have a record in VCAT." The library defined maintaining a collection to mean "direct involvement by library staff in acquiring, processing, storing and providing access to materials." Furthermore, any such sources of information represented in VCAT by a bibliographic record "should be readily accessible for use by university faculty, students and staff" (University of Virginia Library 1992, 2). At its 1992 Planning Day, the library affirmed that collection of, access to, and delivery of electronic information resources would be one of its top ten priorities for the next year. Clearly, the hundreds of texts in the Electronic Text Center were prime candidates for cataloging.

In early 1993 the eight catalog librarians of the Original Cataloging Unit volunteered to develop procedures and implement a workflow for cataloging electronic texts. As a first step in planning the local workflow, the group investigated the current status of electronic text cataloging at other academic libraries and discovered that few institutions were creating MARC (machine-readable cataloging) records for their texts. The notable exception was (and is) the Center for Electronic Texts in the Humanities (CETH). Staff at CETH had taken over cataloging the Rutgers Inventory of Machine-Readable Texts in 1991 (Hockey 1993, 41). The highly detailed and carefully thought out cataloging processes that CETH evolved were adapted for the University of Virginia Library's approach to cataloging electronic texts. Unfortunately for Virginia, the catalog records for the Inventory are held in the Research Libraries Information Network (RLIN) (Hoogerspel 1994b, 27) and the University Library is not a cataloging member of RLIN, though the library's bibliographic records are tape-contributed to RLIN. All cataloging records for the University of Virginia Library's electronic texts would, of necessity, have to be created originally. An added twist to the emerging local workflow was the University Library's status as a tape-contributing member of the OCLC Online Computer Library Center, Inc. OCLC's extended matching algorithm for tape contributions does not process original computer file records (OCLC 1993, B.2). This meant that all original MARC records for electronic texts would have to be entered directly on OCLC, as opposed to the local practice of creating MARC records on VCAT and returning to OCLC on tape.

The catalogers reviewed chapter 9 of the Anglo-American Cataloguing Rules, 2d ed. (AACR2), Library of Congress Rule Interpretations, and OCLC documentation for the computer files format in preparation for creating MARC records. The University Library's Systems Librarian for Information Services, acting as a liaison between the Original Cataloging Unit and the Electronic Text Center, supplied the catalogers with typical samples of documentary information on electronic texts. After much review and several discussions, it became apparent that the information available for electronic texts and their printed sources was often sketchy and frequently poorly organized—at least to a cataloger's eye. Because the Electronic Text Center is designed to support scholarship, research, and teaching, we deemed it essential to provide thorough description and documentation of the electronic texts and their sources. It seemed appropriate for the catalogers...
to organize and expand this information not only in the MARC record but also in the TEI header. The catalogers were enthusiastic about undertaking this task and proceeded to reevaluate their plans. They immediately identified three areas for study and development: (1) an understanding of the TEI guidelines and the relationship, if any, of the TEI header to the MARC computer files format record; (2) training in the technology to create TEI headers; and, (3) a mechanism to receive information relating to texts gathered by the staff in the Electronic Text Center.

The catalogers immersed themselves in the TEI guidelines (draft version P2, August 19, 1992) and realized that the guidelines were far less prescriptive than the typical library cataloging triumvirate of AACR2, Library of Congress Rule Interpretations, and MARC format documentation. For example, of the many possible elements in a TEI header, only one component is mandatory—that of the file description. Within the <fileDesc> element, the three elements <titleStmt>, <publicationStmt>, and <sourceDesc> are all required; however neither the form nor the completeness of the content of any of these elements is mandated (Sperberg-McQueen and Burnard 1994, sec. 5.2). As a result, the catalogers developed a local set of guidelines and interpretations (based on the TEI guidelines and the OTA DTD) for formatting information within the TEI header. The catalogers felt that, to the extent possible, the TEI header should contain all the necessary information to create a MARC record. That is, the creation of the MARC record should flow naturally and easily from the completed TEI header; indeed, the Text Encoding Initiative consulted ISBD (G), AACR2, and ANSI Z39.29 during the development of the header guidelines to ensure some similarity between MARC and the TEI headers (Sperberg-McQueen and Burnard 1994, sec. 5.7). The catalogers also recognized that there was a great deal of information required for the header that would not necessarily make its way into the MARC record. The group agreed on standard terminology and phrasing for particular fields such as notes, file size, and publisher information.

Two of the most difficult decisions the catalogers faced were how to enter the author's name in the <author> field and what constituted a version, edition, or state of the electronic text. Questions about the form of author entry were many. Should it be entered in direct order (e.g., Thomas Jefferson), or in inverted order (e.g., Jefferson, Thomas)? And, furthermore, should the name be entered exactly as found in the electronic text, or should the catalogers use the AACR2 form of the name? Fortunately, as the group debated the issue, the indexing and retrieval software provided the answer. The precision with which author subindexes were created would determine the search results. For example, if “Jefferson” were the common element specified in a particular subindex, a search using “Jefferson” would retrieve texts with author elements Thomas Jefferson; Jefferson, Thomas; Thos. Jefferson; and T. Jefferson, but not with an author element T.J. The search would also retrieve texts with an author element William Jefferson Clinton. The group agreed that the use of the AACR2 catalog entry form would at least provide a single, standardized version of the author's name that would allow the indexes to be created with greater precision.

The question of what constituted a version, state, or edition of the text was not so easily resolved. The catalogers finally decided that the Electronic Text Center's addition of TEI-conformant tagging was a significant addition to the text files. Thus, the text should be considered the University of Virginia Library's version, and the library should be represented as the publisher of the text. Commercially acquired texts that were already marked up were not included in the project.

By the spring of 1993, the catalogers had developed a TEI header workform (see figure 1) as well as a locally defined OCLC MARC workform (see figure 2). Simultaneously we developed a checklist to be used by staff who created and processed texts in the Electronic Text Center. This paper form (created from a word processing file) centralized all available
information about the source of acquisition, size of the text file, bibliographic source information, and other file characteristics. Staff in the Electronic Text Center completed the checklist as texts were processed and, on completion, printed the checklists and forwarded them to the Original Cataloging Unit. Armed with as much information as possible, the catalogers were prepared to tackle the problems of technology.

Coping with available technology proved to be the most difficult and laborious issue that confronted the catalogers. Each cataloger had at his or her desk an IBM model 3163 terminal, and each was assigned an account on the RS6000 computer. The resident text editor on the machine was JOVE (Jonathan's Own Version of Emacs); although Emacs is a powerful text editor and although it offered a rudimentary windowing capability, it proved, in combination with the relatively unsophisticated machinery available, to be cumbersome for the kind of intensive text editing required in the creation of TEI headers. Nonetheless, the catalogers soon mastered the vagaries of JOVE and by July
1993 had completed both TEI headers and MARC records for several electronic versions of Thomas Jefferson’s works (see figures 3 and 4). The workflow that had evolved was both straightforward and labor-intensive. Original Cataloging received completed text checklists from the Electronic Text Center. The bibliographic information about the printed source was verified in any one of a number of standard sources such as OCLC, RLIN, or the National Union Catalog. This proved to be a frustrating and time-consuming enterprise because most citations included with the texts were inaccurate and poorly organized. Catalogers then created TEI headers directly on the RS6000 computer using the local Emacs text editor; the completed headers were parsed according to the OTA DTD and stored alongside the completed texts. From the completed header, catalogers cut and pasted information into an OCLC workform template. The completed OCLC workform was printed out and keyed into OCLC by a student assistant; the completed MARC record was then exported into VCAT. Finally, the record was exported on tape to RLIN.

**Refining the Process**

Where does the University of Virginia Library go from here? The local workflow achieves the goal of providing improved bibliographic access to the University Library’s growing electronic text collection through both MARC records and TEI headers. The project has had the additional benefits of expanding both the skills and the outlook of the catalogers in the Original Cataloging Unit. These benefits have not, however, been gained without a
Figure 2. University of Virginia Library OCLC Workform for Electronic Texts

price. The steps required to create MARC records and TEI headers are both time- and labor-intensive, and duplication of work is high. Locally, the acquisition of more advanced hardware and software in the Original Cataloging Unit has eased some of the burden and promises to relieve it even more in the near future. In early 1994 the catalogers’ IBM terminals were replaced with 486 PC clones, giving the unit access to a networked version of WordPerfect, file transfer protocol utilities, and multiwindowing abilities. The catalogers moved the creation of TEI headers off the RS6000 computer and into WordPerfect to take advantage of better and faster editing capabilities; completed headers are transferred (using FTP) to the RS6000, where they are parsed and merged with the texts in a final step. Access to the networked version of WordPerfect has also made the paper checklists from the Electronic Text Center redundant. Plans are under way to deliver the checklists electronically through a shared directory on WordPerfect; catalogers will be able to cut and paste information from the checklist into the header, thus reducing possible typographic errors and increasing the speed of the cataloging process.

The final technological advancement in the process is the development of a local SGML-to-MARC conversion program. The University Library’s Systems Librarian for Information Services has developed a program in the perl programming language to convert TEI headers into MARC-like records. The first version of this program is in test as this note is being written. The development of this program will have two results. First, catalogers will no longer have to rekey or cut and paste information from the TEI header onto a MARC workform; the execution of the SGML-to-MARC program
will create a file that can be printed and rekeyed into OCLC with minimal editing by the catalogers. Second, when the University Library’s online system migrates to a client/server architecture, it should be possible to transfer this MARC-like file directly into a bibliographic record.

Two other tasks confront the catalogers. The newest version of the Guidelines for Electronic Text Encoding and Interchange were published in May 1994; the catalogers are in the process of revising local procedures and practices to conform to these updated guidelines. In addition, the catalogers have proposed a pilot project to provide form, genre, and attribute access to the electronic texts; elements that might be included are gender and nationality of the author, literary form of the text, and topical subject terms. Catalogers will, in consultation with the Electronic Text Center, either use existing vocabularies or develop terminology locally.

**FUTURE DIRECTIONS**

Is the creation of TEI headers by libraries a worthwhile endeavor? The first stages of the University Library’s project seem to indicate that it is. However, a
A similar concern is the issue of what constitutes an edition or version or state of an electronic text. The terms edition, version, and state come burdened with one set of meanings for librarians in general and catalogers in particular; the words have another set of meanings for scholars and publishers. Electronic information is by its very nature more subject to change and revision than is printed information; the TEI header offers a way to document changes to electronic texts, but the TEI Guidelines do not define or prescribe when, or whether, those changes constitute a new version. Again, agreement among librarians, scholars, and creators of texts about what constitutes a new, unique version of a text seems essential.

One of the more pressing concerns for libraries—the cataloging community in particular—is the relationship, both short- and long-term, of the TEI header to the MARC record. Enmeshed in this issue are questions about existing cataloging standards and practices, their applicability in the light of evolving information technologies, and even about the future of library catalogs. Many of these issues were raised and discussed at the CETH Workshop on Documenting Electronic Texts in the Humanities held in Somerset, New Jersey, on May 16–18, 1994. The workshop brought together a group of experts on the use of SGML, the TEI header, the MARC record, and electronic text services with the express purpose of making a
larger community aware of documentary issues surrounding electronic texts. Hoogc Arsnel (1994a) gives an excellent survey of the problems associated with using existing cataloging tools such as AACR2 and Library of Congress Subject Headings for the creation of MARC records for electronic texts and suggests some much-needed improvements.

In the short-term, the cataloging community needs to reevaluate its tools for cataloging electronic texts. A revision of chapter 9 of AACR2 is probably long overdue given the proliferation of different types of computer files since 1988, AACR2's last revision date. Similarly, libraries and scholars should investigate the creation of a taxonomy or taxonomies of form, genre, attribute, and subject terms for use with electronic texts. Such terminology is particularly needed in the humanities. The development of an agreed-upon set of standards for TEI header content (perhaps in AACR2/ISBD form) by and for libraries is also a short-term necessity. It is heartening to note that the newest version of the TEI Guidelines contains a new chapter on "The Independent Header," with a section titled "Header Elements and their Relationship to the MARC Record" (Sperberg-McQueen and Burnard, 1994, sec. 24.3); the guidelines do not, of course, prescribe MARC content, but offer suggestions about how header information should transfer to a MARC record. More importantly, this chapter recognizes that the TEI header does not, and need not stand in isolation from library catalogs. For libraries to make the most effective use of the TEI header, data conversion between the header and MARC records, and data interchange among local text systems, local library systems, and bibliographic utilities must improve. Librarians need to work with system designers and vendors to develop automatic data conversion capability. In addition, librarians should consider the usefulness of developing a MARC document type definition (DTD) in coop-
eration with the Text Encoding Initiative. A full-blown MARC DTD could make data conversion and interchange a relatively simple matter of programming.

**CONCLUSIONS**

The cataloging of electronic texts presents librarians with the opportunity to challenge the notion of the hegemony of the MARC record. Imagine a library system that includes electronic texts with TEI headers created by the Library of Congress' Cataloging-in-Publication program. As libraries are poised to move toward enhanced, expanded, and extended systems (Hildreth 1991, 17–38), catalogers should question the assumption that all bibliographic data must be delivered in a single record structure. Perhaps finding ways to incorporate resources that carry their own cataloging—as TEI headers are capable of doing—is a way for librarians to, as Mandel has urged, “break existing conceptual barriers” and to move “creatively toward new techniques and approaches” (Mandel 1992, 4). Bibliographic organization and control of information resources will still certainly be needed. Without some sort of organization information sources will remain chaotic and unusable, and, as Thomas Jefferson wrote to the first University of Virginia librarian, “a library in confusion loses much of its utility” (Clemons 1955, 17).

**WORKS CITED**


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The Core Record: A New Bibliographic Standard

Willy Cromwell

In 1993, in an effort to reform and expand the scope of national cooperative programs, the Cooperative Cataloging Council appointed a task group to recommend cost-effective cataloging standards that would be acceptable to as large a segment of the cooperative community as possible. Among the final recommendations of that Task Group was a model of a proposed core-level bibliographic standard. The core-level standard presents a flexible, less-than-full cataloging standard that emphasizes local needs and the exercise of judgment. It was developed in response to the perceived inadequacies of the minimal- and full-level standards. The first is widely considered to be cost-effective but of limited utility to cooperative cataloging, while the second is frequently very expensive. The core-level standard represents a third option that has some of the advantages of both levels of cataloging without the drawbacks.

In 1992 representatives from Library of Congress, the OCLC Online Computer Library Center, Inc., the Research Library Group (RLG), and academic and public libraries joined forces to form the Cooperative Cataloging Council. The goal of the Council was to facilitate an increase in the number of mutually acceptable bibliographic records available for use by the cooperative community. The Council proposed to start at ground zero to design a new cooperative program and in the process identify solutions to the problems that had militated against the effectiveness of previous cooperative efforts. To achieve this end, the Council appointed six task groups to propose answers to the following questions:

1. What changes are necessary to enable libraries to catalog "better, faster, cheaper"?
2. How can the transmission and distribution of records be improved?
3. What changes might make contributing to the national-level authority file more attractive?
4. How must bibliographic standards change to make the creation of serviceable records easier?
5. How should effective catalogers be trained?
6. What is the role of international MARC records in the cooperative environment?

Defining the core-level standard for books by the third Task Group, the Task

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Group on Standards, was the beginning of answering the third question. It is the development of this standard that is the subject of this note. The Task Group comprised librarians from a representative spectrum of libraries. The members, Willy Cromwell (Stanford University), Roxanne Sellberg (University of Washington), Margarte Shen (Cleveland Public Library), Lynn El-Hoshy (Library of Congress), Kay Giles (Library of Congress), and the Cooperative Cataloging Council Liaison, Karen Smith-Yoshimura (RLG), were charged as follows:

1. Develop standards that could support wide use of records in a cost-effective manner;
2. Promote and facilitate the use of mutually accepted standards;
3. Evaluate the need for quality standards or conformance measures.

The core-level standard was developed in response to the first charge. The Task Group found that the recommendations pertaining to the second and third charge followed logically from the nature of the new standard and the concomitant assumptions about the standards environment that it implied.

**ANTECEDENTS**

The Task Group did not begin its labors in a vacuum, but in a bibliographic universe that already included national full-level and minimal-level cataloging standards. The rhetoric of cataloging simplification was becoming more prevalent, and the corresponding effort to define what such simplification might imply was becoming increasingly urgent, driven by the reality of reduced budgets and by the possibilities and challenges represented by information technology developments. It is against this background that the Cooperative Cataloging Council developed its agenda and charged the Standards Task Group. Other signs of the times were the appointment of the CONSER Core Elements Task Force to examine serial cataloging standards and an International Federation of Library Associations (IFLA) working group established in 1989 to explore the issue of simplified descriptions using the International Standard Bibliographic Description (ISBD).

**MINIMAL-LEVEL CATALOGING (MLC)**

There is nothing new about a less-than-full standard. The publication of the *National Level Bibliographic Record—Books (NLBR)* in 1980 made a minimal-level cataloging (MLC) standard available to libraries. The concept of minimal-level cataloging was given further legitimacy by the specification of three levels of cataloging in the second edition of the *Anglo-American Cataloguing Rules* in 1978. Although AACR2 cited local requirements as the criteria for the use of any cataloging level, the *NLBR—Books* stated explicitly that the MLC standard was not intended to be used as a substitute for full-level cataloging but as an alternative for materials deemed less important than others by the cataloging agency. It presented a minimum set of data elements for "the cataloging of materials which the cataloging organization feels do not warrant the high cost of full cataloging but nevertheless should be maintained under a degree of bibliographic control" (Library of Congress 1980, v).

The use of MLC has always been controversial, however, and pro and con arguments abound. The reasons given for the use of MLC are generally related to the idea that some access is better than none, and that some materials might not require a full-level bibliographic record (Horney 1986). Marko and von Walde (1986) are typical of those proponents of MLC who regard it as an important tool that can be used to economically reduce backlogs.

In spite of its advantages, however, use of the MLC standard excites strong opposition. Ross and West (1986) summarize many of the common arguments against MLC: it does not provide sufficient access to materials; it might prohibit browsing (because an item might not be classified); it omits vital management information; it is harmful to the national cooperative environment. They also argue that it is not
the best way to achieve timely cataloging, because backlogs can be managed and made accessible via computerized acquisition records while awaiting fuller cataloging. Rhee (1986) turns a main argument for the use of MLC on its head, noting that selecting materials for MLC treatment on the basis of their ephemeral nature, language, or other characteristics runs the risk of denying adequate control to possibly unique and important materials.

There seems to be a general consensus that MLC can rarely be used without considerable review and upgrade. Fox and Preece observe that MLC "is being used not only for items that may be unique or relatively scarce, but for current items that are widely held" (1991, 33), contrary to the stated purpose of the standard. This fact, together with the assumed loss of access in the MLC record leads them to endorse systematic upgrade of MLC records. Recently, the Library of Congress voiced its concern "about the impact of its minimal-level cataloging on the library user community in terms of the added costs this community incurs when using these MLC records, as well as the complications associated with the lack of subject access in these records" (Library of Congress 1992b).

The use of MLC also introduces another complication into the national databases. The MLC standard describes minimum requirements; it does not forbid the addition of other elements. Consequently, records identified as MLC might vary in fullness; they might or might not have subject headings, classification, uniform titles, etc. As Crowe (1986, 338) notes, "variant slippery definitions of 'minimal-level cataloging' are in themselves a challenge, for without common bases for discussion, even intralibrary communication about MLC will collapse."

While the MLC standard might be cost-effective, it lacks wide acceptance in the cooperative community. Many institutions endorse its use in a limited fashion, but few are willing to use other libraries’ MLC records without review and upgrade. Confusion about the actual data elements that might be included in records that are encoded to indicate minimal-level record content leads to problems in a cooperative cataloging environment. In short, while the MLC standard might present a starting point for thinking about a cost-effective, widely acceptable standard for a cooperative cataloging program, it is not the ultimate answer.

**FULL-LEVEL RECORDS AND CATALOGING SIMPLIFICATION**

While the issues surrounding MLC are more concerned with the inclusion or exclusion of specific data elements, the issues that surround the full-level record exhibit a tension between questions that relate to the degree of fullness of a record and questions that relate to the manner of formulating data elements. In an evaluation of the NCCP (National Coordinated Cataloging Program), Burger (1990) notes that the full-level record aspiring to a "national-level quality" in its contents, is measured against the LC catalog. Although Burger is speaking about the NCCP catalog record, most non-NCCP catalogers would recognize the justice of this assertion as it pertains to their daily efforts to create "quality" bibliographic records. As Burger observes, the effort to create records that are consistent with LC practice is an expensive business, and it imposes a quality standard that is vague, difficult to define, and insufficiently linked to accessibility of collections, and that makes no concession to local needs.

In an environment characterized by shrinking budgets, and given the challenges and promises of a rapidly developing information technology, it is inevitable that practices so perceived will be challenged. Mandel states that "we have been given the mandate—in the form of reduced budgets, growing backlogs, and an increasingly impatient clientele—to rethink our practices" (1988, 214). Gregor and Mandel (1991) propose an agenda for realizing this mandate that involves simpler descriptive cataloging, devalues interlibrary consistency except in access points, relies on cataloger judgment rather than rigid adherence to authority,
and recommends subject heading practice that not only simplifies, but better represents patron searching practices.

In an effort to meet such criticisms as they related to the NCCP, the Library of Congress convened a two-day meeting in July 1989 to consider possible simplifications in the NCCP process. Further efforts to achieve cataloging simplification led to a conference in 1991 to evaluate subject heading subdivision practice and a group of proposed cataloging modifications (Library of Congress 1992a). Among these modifications were proposals that would have eliminated series authority work and curtailed the number of added entries routinely made in full-level cataloging. These efforts to streamline the full-level record were discussed at the Heads of Large Technical Service Units discussion at the American Library Association Midwinter Meeting in San Antonio in 1992, where they were perceived as falling short of real simplification and were subsequently retired by LC.

**ISBD(M) SIMPLIFIED**

In relation to the core-level standard, the work of the IFLA Standing Committee of the Section on Cataloging is particularly significant because it focused on defining an alternative ISBD(M) that would accommodate cataloging simplification. This working group was concerned with defining a hierarchy of values for the range of cataloging data elements. Hornby describes the goals of the ISBD(M) Simplified as records that “sufficiently identify the item, retain interchangeability between agencies in different countries and in addition, allow quicker and easier creation of the records” (1990, 15).

Hornby acknowledges the distinction between limiting the required data elements in the catalog record and the fact that other aspects of cataloging practice might also require examination if simplification is to be meaningful. However, while noting that ISBDs are only part of a complex of interrelated standards that govern cataloging, she also observes that “most libraries are finding it almost im-

possible to afford to provide the maximum amount of descriptive information that might ideally be provided in the catalog records” (1990, 15).

**CONSER CORE ELEMENTS TASK FORCE**

Another important event that occurred concurrently with the appointment of the Cooperative Cataloging Council Standards Task Group was the designation of a CONSER Core Elements Task Force. Its significance for the core-level record lies in the focus of the CONSER group on designating essential data elements and on the grass roots nature of the project that indicated that the community might be ready for such an approach to simplification. As Mandel notes, one aspect of the success of the CONSER program is the fact that “CONSER cataloging standards are essentially the same standards that most members would elect to follow for their own operations” (1992, 52).

**COOPERATIVE CATALOGING COUNCIL STANDARDS TASK GROUP SURVEY**

Such was the environment in which the Cooperative Cataloging Council Standards Task Group began its work. Thanks to tightened budgets and increased pressure to reduce backlogs and retain currency with incoming materials, the use of the MLC standard was widespread, although its acceptance by the library community was equivocal. At the same time, the values that governed the full-level catalog record were being subjected to critical scrutiny; some type of cataloging simplification was recognized by influential segments of the national and international community as essential.

Conjoined to this conceptual background were two layers of constraint that also affected the work of the Standards Task Group. The primary constraints were dictated by the charge itself: the final product would have to be acceptable to as many of a large group of diverse institutions as possible and should at the same time contribute to a more cost-effective
product. Equally compelling were the constraints dictated by Council's expectation that the Task Group should submit its final recommendations by October 31, 1993. Because the Task Group had been formed in May 1993, there was very little time for it to complete its work; the short time-frame dictated an extremely pragmatic approach.

The Task Group's efforts to define the scope of standards to be evaluated gave rise to the procedure it adopted. It became clear to the Task Group members that, given the limited time-frame, the most that they could hope to achieve would be a delineation of the primary data elements required by the cataloging community in an acceptable record for print monographs. To gather information about the needs and preferences of the community, the Task Group decided to send out a questionnaire about a proposed model of a core record. The goal was to determine the intersection between the kinds of records cataloging institutions would be willing to accept and those that they would be willing to create. Although Task Group members were serious about the model they developed for the survey and felt that it was viable, it was, nevertheless, understood that they would learn as much from the negative reactions it might elicit as from the endorsements and that it was not a final proposal for a standard.

At the request of the CONSER Core Elements Task Force, specific serials fields were included in the model record to present an integrated list of bibliographic fields that were mandated if applicable to the type of material under consideration. In the introduction, Task Group members indicated that if consensus on the set of data elements could be achieved, then the essential data elements for non-book materials could be added later. Although the Standards Task Group did not feel that they could properly endorse serial elements for inclusion in the standard they ultimately proposed, the information was forwarded to the CONSER Task Group.

Because time was of the essence, the questionnaire was, for the most part, distributed electronically on various electronic discussion lists. It was posted on AUTOCAT, COOPCAT, SERIALST, and PUBLIB. It was also distributed to a list serving the Technical Services Directors of Large Research Libraries Discussion Group and individually to the mailing list compiled by the chair of the Technical Services Administrators of Medium-Sized Research Libraries Discussion Group. Copies were also sent to catalog department heads of the 25 largest public libraries in the United States by electronic mail when possible and surface mail when not. A modified version was posted to PACS-L to solicit feedback from public service librarians who work more directly with users of the catalog and whose user-oriented point of view the Task Group wished to incorporate into its considerations. The questionnaire was distributed in July and recipients were asked to respond by August 31.

**Survey Results**

The Task Group received 88 completed responses, 56 from academic libraries, 16 from public libraries, and 10 from special libraries. Responses were received from national libraries and from the OCLC Techpro cataloging operation; one response was from an unknown source. Fourteen of the respondents indicated that they were responsible for the creation of more than 10,000 original catalog records each year; 10 created more than 5,000 records; 25 more than 1,000 and 35 created fewer than 1,000 records yearly. Many respondents attached comments, and most indicated that their responses represented an effort to secure an institutional response, often incorporating responses from public service units.

Using a spreadsheet program to break out the data, Task Group members considered the responses for each type of library and for each level of original cataloging. In breaking out the data in this fashion, the Task Group found, not surprisingly, that those libraries that were responsible for the creation of the largest number of original catalog records were
more enthusiastic about a core record standard—although few respondents rejected the idea of a core record out of hand. Many respondents gave qualified answers indicating that they would accept the core-level record model only if specific changes were made.

Aggregate responses to the four survey questions were as follows:

1. Accept the core record as proposed:
   - yes (unqualified) 16%;
   - no (unqualified) 0%;
   - qualified responses (84%).
2. Commit to do original cataloging using core record standard:
   - yes (unqualified) 67%;
   - no (unqualified) 1%;
   - qualified responses (32%).
3. Support access points with national-level authority work:
   - yes (unqualified) 67%;
   - no (unqualified) 1%;
   - qualified responses (32%).
4. Core record would enhance local cataloging operation:
   - yes (unqualified) 25%;
   - no (unqualified) 0%;
   - qualified responses: 69%.

The Task Group was especially interested in the qualified responses because they suggested the areas in which the core record model should be changed in order to increase the viability of the model. Among the respondents who offered a qualified yes or no to the first question, 66% specified that the addition of three or fewer data elements would be necessary. Thirty-four percent specified that four or more data elements would be necessary or else qualified their answer in such a way that the qualification was not quantifiable. While few respondents indicated that they would require more than a couple of additional data elements, there was very little overlap in the fields that different respondents specified as necessary. The most problematic area seemed to be classification, as there appears to be less standardization in classification practice than in other aspects of cataloging.

CORE-LEVEL STANDARD

The Task Group met in Washington D.C., September 27–28, 1993. At that meeting, members attempted to interpret the survey data and reconcile the contradictions it presented. The outcome was the following definition of a core record:

**FIXED FIELD VALUES:** Code fully
- 020, 8a (ISBN): record if present on item
- 040 (Cataloging source)
- 042 (Authentication code)
- 050, 082, 086, etc.: Assign at least one classification number from an established classification system recognized by USMARC

**DISCUSSION:** This specification must necessarily be stated in the broadest terms to accommodate a wide variety of needs. Assignment will in some cases constitute solely classification, while in others it will consist of a full call number. While this fact, as well as the use of any of a variety of classification systems may mitigate against the availability of records that can be used without modification, it supports the need to accommodate the broad spectrum of the library community in soliciting as wide a pool of records as possible

**1XX (Main Entry):** If applicable
- 240 (Uniform title): If known or readily inferred from material being cataloged
- 245–300 (Title page transcription through physical description): Describe fully, using all data elements appropriate to the item described
- 4XX (Series area): Transcribe series if present. Other aspects of series treatment (classification together or individually), analysis, tracing) are local in nature

**5XX (Note fields):** Minimally, include the following if appropriate:
- 500: Note for source of title if not from t.p.
- 505: (Contents note) For multi-part items with separate titles
- 533: (Reproduction note)

**6XX (Subject headings):** If appropriate, assign from an established thesaurus or subject heading system recognized by USMARC at least one or two subject headings at the appropriate level of specificity

**7XX (Added entries):** Using judgment and assessing each item on a case-by-case basis, assign (1) a complement of added entries that covers at least the primary relationships associated with a work (e.g.
joint authors) and (2) added entries to bring out title access information judged to be important.

NOTE: For both (1) and (2) above, determination of primary relationships and of the relative importance of title access information are intended to reflect either individual catalogers' judgment or the institutional policy of the participant 8XX (Established form of series if different from that in 490 field): If series is traced, use as appropriate.

**Task Group Recommendations Related to Core-Level Standard**

In addition to a proposed core-level standard, the Task Group's final report also contained twenty-one related recommendations, many of which are essential to provide a framework from which to properly understand the core level record standard. In articulating these recommendations the Task Group was greatly influenced by the comments that respondents attached to their returned questionnaires.

Many respondents voiced the belief that reducing the number of data elements in a record is not the only answer to the cataloging problem and that greater simplification of the cataloging standards that govern descriptive and subject cataloging is needed as well. While Task Group members believed that an option to reduce the number of data elements in a catalog record is important, they also agreed that it will not necessarily lead to cost-effective and use-effective cataloging by itself. For this reason, the Task Group's first recommendation was that the administrative body of the new cooperative cataloging program should press forward to effect the changes in descriptive and subject cataloging practice that would best serve the goals of the program.

One respondent suggested that core records might be regarded as a work in progress so that they could be progressively upgraded by subsequent users. The Task Group recognized in this suggestion the germ of a solution to such seemingly intractable problems as that posed by the question of which classification system or systems to endorse. It suggested a way to articulate a standard that is both cost-effective and still meets a wide array of needs. Access to many records that require enhancement in only one or two details is preferable to access to only a few that require no enhancement at all. If, within the context of a new cooperative program, the core-level record could be regarded as dynamic (accepted as is or progressively enhanced by those who use it), the Task Group felt that it could incorporate real flexibility into the standard and still contribute to a result that would increase the number of widely acceptable catalog records available to the cooperative cataloging community. As such records are enhanced, they will, of course, become even more widely acceptable.

Many respondents remarked that the core-level record standard would be acceptable only if it could be clearly identified as such. The Task Group members recognized that such identification would be necessary if their recommendation regarding the dynamic nature of the record was endorsed by the Council. As such records are enhanced, it will be necessary to signal their level of content. Proper identification of a core record could also be key in managing record hierarchies in the utilities. And, of course, proper identification would deal with the situation created by less-than-full cataloging that varies in fullness so that it cannot be easily channeled into a processing routine.

**Core Record vs. Minimal-Level Catalog Records**

Core records differ from minimal-level records in four respects:

1. USMARC fixed field values must be coded fully. The Task Force reinstated the full range of fixed fields, many of which had not been included in the survey model. Because the Task Group members believed that they were constructing a standard that should emphasize the automated environment, the potential role of fixed fields as primary or secondary
(i.e. limiting) access devices in online catalogs and in the utilities dictated that they be retained. Additionally, the potential use of fixed fields to generate notes was also suggested by several survey respondents.

2. The core-level record standard mandates a more complete array of descriptive elements. It was felt that transcription of these elements is rarely troublesome. Proposals to eliminate certain of these elements were not well received by survey respondents.

3. While offering fewer access points than full-level records, the core level record specified flexible formulas for added entries and subject headings.

4. The core record mandates that a classification number be present, although it does not specify that the classification reflect any system other than that it be recognized by USMARC. The presence of classification of some sort will guarantee that although it might not be acceptable to all libraries the record will be acceptable to more libraries than it would be with no classification at all.

CORE RECORD VS. FULL-LEVEL RECORD

The core record standard differs from the full-level record in two important particulars:

1. It mandates fewer data elements and attempts to reduce the redundancy of the full-level record. Mandatory notes are severely restricted on the principle that only notes that are essential for the identification of an item should be required. Fewer added entries are required and no more than one or two subject headings need be added to the core record. The result is a leaner, more economical record with less related authority and subject work than the full-level record, although, unlike MLC, the presence of a certain basic level of access is guaranteed.

2. The core record allows local agencies more flexibility and emphasizes judgment in its construction. Because it is to be considered a dynamic record that can be enhanced as necessary, contributing libraries need not be stretched to meet all the needs of quite different types of institutions. Classification and series treatment are examples of areas where the core record standard recognizes that different institutions often have quite different practices. Choice of added entries is another area in which institutions or individual catalogers are given more leeway than the current complex of rules and rule interpretations allow when constructing a full-level catalog record. The core record emphasizes judgment in determining which added entries are important and specifically states that such determinations should be local in nature.

CORE RECORD VS. PROGRAM

CORE RECORD

The core-level standard promises to be useful because, while it does not try to meet all the needs met by full-level catalog records, it will meet basic needs better than current minimal-level records. At the same time it should help minimize some of the expenses of full-level cataloging. However, the standard was developed in the context of an organized national cooperative cataloging program. As a program standard, the core record will have value added in two important ways:

1. The Task Group recommended that all access points of program core records be supported by national-level authority records. This would guarantee that the access points would be consistent from one institution to another and could be accepted as authoritative without scrutiny.

2. The Task Group also recommended that some way to further identify core records that are program records be developed. One of the explicit assumptions of the Task Group was that if a program record is to retain its
guarantee of quality, it should be modified or enhanced only by program participants who have undergone appropriate training and who are committed to create national-level authority records for each access point. (It may, however be copied and enhanced for local use by non-participants.) Proper identification of program records is central to implementing such a guarantee.

While the Task Group believes that the core record standard offers a cost-effective and user-effective standard, it is in conjunction with a national cooperative program that the core record standard offers the greatest advantages. The standard could make participation in such a program feasible for many institutions otherwise unwilling or unable to accommodate the extra constraints imposed by past cooperative endeavors. And increased participation in the national program will result in more records that institutions can use with less review and enhancement; the program imprimatur should serve as guarantee for the record and the authoritative nature of its access points.

IMPLEMENTATION

The major outcome of the Cooperative Cataloging Council activity and that of the Council’s associated Task Groups was the formation in early 1994 of a new cooperative cataloging program to be called, fittingly enough, the Program for Cooperative Cataloging (PCC). In a strategic plan released in early 1994, the PCC endorsed the use of the core-level standard: “Two levels of program bibliographic records should be recognized for the books format: the currently defined full level record and the proposed core level record (as defined by the CCC Standards Task Group). Participating institutions may choose to catalog at either level or they may use both levels selectively.” (Program for Cooperative Cataloging 1994, 5). The PCC also endorsed the idea of the dynamic nature of the core-level record, noting that one should “consider the state of any particular core record to be dynamic, with participants choosing to use it as it is, allowing participants to incrementally add only those data elements needed, by modifying or enhancing it to full level.” (Program for Cooperative Cataloging 1994, 1).

The USMARC community appears to be moving with all due speed to incorporate the core-level record into the identified standards available to the library community and to accommodate the proper identification of program core records. MARBI Discussion Paper 94-13 (for ALA Annual 1994) deals specifically with the changes to the USMARC format that implementation of a properly identified program core-level record will require. This dispatch on the national level is important because several libraries have expressed interest in implementing the standard sooner rather than later, and the universal concern seems to be the choice of encoding to be used prior to the development of an encoding level explicitly for the core record.

Because the standard has not yet been implemented in any meaningful fashion its cost-effectiveness is yet to be proven. However, at least one preliminary test of the standard indicates that identifiable savings may accrue from its use. Christian M. Boissonnas (1994) reports that cataloging staff at Cornell achieved a 25% savings in cataloging time when they compared the cataloging time per title for two groups of similar materials, one group cataloged using the core-level standard, the second cataloged at full level.

At the Stanford University Libraries a very similar standard has been used in place of minimal-level cataloging for the past year. The success has been variable and analysis of the reasons for that variability suggests that a new set of cataloging content guidelines will not achieve the optimal level of cost-effectiveness all by itself. It must be introduced into the workplace with care, and catalogers must appreciate the goals of implementation and understand and feel confident about the new emphasis on judgment and flexibility. Cataloging departments must be
clear about what portions of their workflow are to be done at core level and what at full level and be sure that catalogers understand why that is so and what it is that the institution is hoping to achieve through the use of the core-level standard. A fair test of the standard might require a shift in emphasis in the day-to-day cataloging environment that goes beyond simply specifying another level of catalog record.

FUTURE

The sea-change that will make such a shift in emphasis possible is in process and is evident in the initiatives launched by the new Program for Cooperative Cataloging. When the Standards Task Group sent forward the final proposal for a core record, it was accompanied by a recommendation that the standard be expanded for non-book formats and for nonroman materials. This recommendation was endorsed by the Council and currently two Task Groups have been charged and are actively working to delineate core record elements for scores and sound recordings and for non-roman script materials respectively. Core-level standards for these materials should be available by the end of the year. Complementary changes in descriptive and subject cataloging standards are also in process. The five-year strategic plan of the Program for Cooperative Cataloging pledges ongoing efforts toward continuing rationalization of both subject and descriptive cataloging practice. To date, a Series Authority Record Task Group has been formed to examine the content and functional uses of series authority records in the national file; a Subject Authority File Task Group will examine the functional requirements and uses of the national subject authority file and its relationship to the Library of Congress Subject Headings. The appointment of an AACR2 Code Revision Task Group was also promised. In this context the core record is only the first step in a systematic process of defining a new cataloging environment.

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This publication, coming as it does concurrently with the 1993 proposal for a Program for Cooperative Cataloging (PCC), is very timely. As libraries face staff reductions combined with new technologies and the pressures to provide new services, they are forced to re-examine their existing procedures and cooperative arrangements and to consider new ones so as to make the best use of their limited resources. One of the traditional ways in which libraries have shared resources is through cooperative cataloging arrangements. The editor follows the ALA Glossary definition of cooperative cataloging: "The original cataloging of bibliographic items through the joint action of a group of libraries ..." (p. 59). Specifically excluded is the centralized cataloging model by which one agency creates bibliographic records and distributes them for the use of others.

This volume provides in one place a historical perspective on cooperative cataloging together with descriptions of the existing major national cooperative cataloging programs. The various authors present different perspectives on the issues involved in cooperative cataloging, the strengths and weaknesses of current programs, and possible approaches to improvement of cooperative cataloging efforts.

Barbara B. Tillett sets the stage with her survey of cooperative cataloging efforts in the United States prior to the implementation of the MARC format in 1967. She points out the persistence both of the dream of cooperation and the suggestions and approaches taken to accomplish that cooperation. Linda K. Bartley, Coordinator of the CONSER Program, gives her view of the successful CONSER model. Robert Harriman, Coordinator of the United States Newspaper Program, describes that program. Two articles discuss the National Coordinated Cataloging Program (Beacher Wiggins presents the LC viewpoint while Susan Rosenblatt of Berkeley presents a participant's perspective). A related article, written jointly by John J. Riemer and Karen Morgenrooth of the University of Georgia Libraries, describes the cooperative authority work component of NACO.

Among the other articles are one (by Martin Joachim) describing three cooperative projects to catalog microform sets, Robert P. Holley's status report on cooperative cataloging outside of North America, Greg Anderson's overview of current cooperative efforts and his investigation of the characteristics of successful cooperative cataloging projects, and a vision for the future of cooperative cataloging by Sarah E. Thomas and Jennifer A. Younger.

Certain features that characterize successful cooperative projects turn up again and again in the various articles: a well-defined mission, a collegial and participatory governance structure, standards, the existence of appropriate technology, and participants' trust in each other's judgment. As Susan Rosenblatt points out, cooperative programs, if they are to be successful, must also meet local needs as well as national objectives.

As libraries place increasing reliance on an Access Model rather than an Own-
As libraries prepare to enter a new cooperative projects and those not yet designated—Judith Hopkins, State University of New York at Buffalo


I must admit to a lack of enthusiasm in taking up the assignment to review Declining Acquisitions Budgets. I supposed that anything more said would simply confirm the second law of librarianship, "If librarians can, they will do everything twice." True, conference proceedings as a form of literature have a reputation that cannot be said to elicit excitement. Yet, to my surprise, Declining Acquisitions Budgets presented many new ways of looking at library budget deterioration and responses to it. In addition, it renewed my confidence in the ability of our practitioners and administrators to deal with this crisis.

A more appropriate title for the publication (and for the conference at which the papers were first presented) might have been "Rethinking the Acquisitions Budget." Almost without exception the authors have dared think of actions and alternatives that would have been considered heresy in the collection development community just a few years ago. While external forces (budget, technology, etc.) might have precipitated this rethinking, it is a sign of a mature profession that the response internally is to examine priorities, to rethink and to re-engineer where appropriate, and to develop proactive strategies that will continue to accomplish the goals of librarianship.

Of eight papers included in the collection, most are well written, and the content can be characterized as expert and provocative. Nancy Eaton provides a library director's perspective of "The Acquisitions Dilemma." She admits that libraries must accept some of the blame for the way in which the budget problem is viewed by top administrators. She observes that requests for more money to match inflation (and other destroyers of purchasing power) are no longer viable unless accompanied by initiatives for changing the existing system. She says that the 20/80 rule is no longer credible to our funding sources, but she doesn't elaborate. (I had thought the "20% of collections meets 80% of demand" rule would apply in any budget scenario, but now I wonder . . . ) It is most interesting that as she discusses the director's role in meeting the acquisitions dilemma, she has included examples of an "Audience Strat-
egy Checklist." I suspect many directors will find the examples helpful.

Leonard Schrift asks, "Is It Possible to Develop Libraries Without Resources?" He then looks at the library marketplace and concludes that it doesn't correspond to classic economic and marketing theory. He also observes that the ascendency of journals (in budgetary importance) is a distortion and that the key professional issue we face is determining the desired nature of collections and collection development objectives. In addition to formalized collection objectives, Schrift advocates a formula-like policy (details are lacking) to meet the objectives.

Ross Atkinson discusses "Reevaluating Acquisitions Budgeting in an Age of Transition." Of course, the transition is influenced not only by declining budgets but also by the phenomenal development of new technologies in libraries, including connectivity that was only dreamed about a few years ago. Atkinson briefly describes the progress of collection development over the last three decades to the point where it is now considered organizationally as separate from public and technical services. He then points to the acquisitions budget and its historically "protected" status in the overall budgeting process. This protected status and declining purchasing power have helped produce the definition and goals of collection development to the present time (1992). He does not feel that most efforts at cooperative collection development have been effective. Atkinson describes a "remodeling" of the library budget and admits that this will be a tall order. Multidimensional budgeting is described, and this makes a lot of sense in an age of microbudgeting and accountability. In his conclusions, Atkinson includes one idea I wish he had developed more fully: he suggests that our local users rely more on mediation services provided (online) by other institutions. Like most of his many scholarly additions to the collection development literature, Atkinson's paper is well-presented, except for his overuse of words like "certainly," "most," and "must."

Judy Webster's contribution is "Allocating Library Acquisitions Budgets." She reviews the traditional allocation methods and formula approaches. She evidently agrees with Charles Lowry's view that no method or formula can overcome budget insufficiency. She also describes a study at UT-Knoxville in which data were gathered on high-use materials with a view toward revising allocations to correspond with user needs.

"Access vs. Ownership" is the subject of a study at Columbia described by Anthony Ferguson and Kathleen Kehoe. At the outset they accept the fact that access vs. ownership is only half the question. Speed of access is often equally important. The "browsing factor" is also important, and many libraries are evaluating electronic browsing applications. The authors say in conclusion, "If electronic browsing and document delivery could substitute or indeed be viewed as superior to the browsing and photocopying... currently employed..., the whole research library paradigm that has dominated for the past one hundred years will be changed" (p. 98).

"Toward a Calculus of Collection Development" is, in part, a passionate rebuttal by Charles Hamaker to the contention of publishers that serials price increases over the last two decades are based entirely on article proliferation. Hamaker notes that less access to monographs has been the result of the "Serial Wars." Several strategies for responding to the serials cost crisis are described. He does not envision technology providing the solution to the serials crisis, although I believe this paper awaits a second installment. The final paper in the collection is authored by Kathleen Born, and it provides a perspective on the serials vendor's role in collection assessment.

A collection of papers inherently will have some unevenness, but there is much food for thought here. Papers from the Oklahoma topical conference over the last ten years have varied in quality and timeliness. This present volume contains the best on both counts.—Don Lanier, University of Illinois at Chicago/Rockford

Guide to Technical Services Resources.

Edited by Peggy Johnson. Chicago:

The publication of Guide to Technical Services Resources is a major bibliographic event as “a first attempt at a comprehensive and practical guide to the principal information resources for technical services practitioners, educators, and students” (p. 1). Editor Peggy Johnson concisely defines the Guide’s purpose and conventions in her introduction. It was inspired in part by ALA’s Guide to Reference Books and borrows its structure with chapters on broad areas within technical services that are then subdivided into topical units. With its practical emphasis, the primary criteria for selection are currency and usefulness to North American libraries. “Chapter authors sought to describe the tools that they would like at their fingertips and that they would use on a regular basis” (p. 2). Entries, nonetheless, extend beyond traditional printed resources to include professional associations, conferences, electronic discussion groups, and electronic journals. The editor foresees periodic supplements and updated editions. Each chapter begins with a “topical introduction” of no more than three pages that provides “an overview of the subject area it covers” (p. 3).

An important issue is the definition of technical services, because it determines the scope of this volume. As Sheila Intner comments in her overview chapter, “functional definitions of technical services are not universal” (p. 5). For the most part, the Guide tends toward a broad definition that includes organizationally disputed areas such as collection development, database management, and access services (circulation, interlibrary loan, document delivery, etc.). I am surprised, however, at one exclusion. Filing, with its organizational rules for the card catalog, is present, while the Guide does not treat in depth its equivalent in the new technology, online catalog display.

The division into twelve chapters often seems arbitrary and does not seem to me to “parallel the organization and divisions found in many technical services opera-

tions” (p. 2) as stated by Ms Johnson. Is not “Authority Control” (Chapter E) one aspect of “Database Management” (Chapter K)? “Indexing,” included with “Filing” in Chapter F, is certainly part of “Subject Analysis Systems” (Chapter D). Subject overlap leads to duplication. As one specific example, both the chapter on “Subject Analysis Systems” and the one on “Authority Control” include a section on “Subject Authority Control.” The organization also shows the ties of the Guide’s authors to the Association for Library Collections and Technical Services (ALCTS) because each ALCTS section has at least one chapter. Even if “cross-references are provided to works described elsewhere” (p. 2), I would favor a tighter structure in the next edition, though the current arrangement does provide multiple perspectives on the same topic.

As for the selection and description of the individual resources, it is difficult to generalize, because chapter editors have their own styles and selection criteria. The individual annotations, ranging on average from about 50 to 100 words, are most often descriptive, given the selective nature of the Guide. I am reasonably content with the selection in my own area of specific expertise, subject access to information. Individual “topical introductions” also vary in content; I preferred those where the author gave the selection criteria and explained the organizational structure of the chapter.

The “Author/Title Index” is arranged by citation number. Proofreading was not perfect with “Van Order, P. J.” (p. 301) instead of the correct “Van Orden.” Improved authority control might also have been in order with at least a see also reference to link entries by the same person under different names, e.g. “Drabenstott, K. M.” (p. 271) and “Markey, K.” (p. 285). The “Subject Index” is extensive with over 1,200 entries, including some see and see also references. A nice touch is a list of all acronyms used in the Guide. The volume, printed on permanent paper, is sturdily bound and typographically pleasing with plenty of “white space” to make for readable entries.

In summary, the Guide to Technical
Services Resources has its imperfections but should nonetheless be an invaluable tool for technical services librarians, library administrators, and library science students. Not only does it record the best current writing on technical services, but it also provides guidance for keeping abreast of new developments with its valuable listing of journals, electronic discussion lists, and conferences. Because references to specific works will quickly become dated, I strongly recommend that the American Library Association publish supplements or updated editions on a regular basis to keep up with advancements in this rapidly changing field.—Robert P. Holley, Wayne State University


Bourdon’s study of the problems that have beset international efforts at sharing name and title authority data is divided into three sections. The first is an examination of the principles and documents that have promoted and guided these efforts, noting conceptual ambiguities that have resulted in confusion and lack of progress. The second section is an analysis of cooperative authority control in terms of what functions authority records can reasonably serve in an international context, and what kinds of data are needed to serve those functions. The last section is a proposal for several steps based on the preceding analysis to move us further toward the goal of universal bibliographic control (UBC).

Looking at authority control in an international context, Bourdon sees a number of problems with the way authority records are conceived and defined. There are two functions served by authority records: heading management and heading identification. The former involves specifying an authoritative form for a heading and linking that form to variant forms and related headings. In addition, though,
authority records must identify the entity named in the heading sufficiently for the cataloger to feel confident in using the heading. When the authority records derive from bibliographic records in the catalog to which they belong, the need for identifying data might be met by the related bibliographic records. In other words, a local authority file must clearly establish the form of headings and references, but it can be less inclusive of identification data.

When authority records are shared outside their original context, the function and content of the records must be rethought. If the authority records created by one national bibliographic agency (NBA) are to be used elsewhere, they must carry with them more identifying information than might be needed in their original catalog. At the same time, the diversity of opinion among national bibliographic agencies regarding what rules should govern the form of name and title headings makes it essential that choice of heading be more flexible. In her recommendations, Bourdon calls for greater emphasis on including identification data in authority records. She also calls for agreements so that a heading established by a national bibliographic agency for one of its nationals will always be included as a heading or reference in other systems’ versions of the record.

Bourdon accepts as given that international efforts should follow the UBC principle that NBAs should establish the names of their nationals. However, this too might be an obstacle to progress. Will NBAs really be willing to wait on each other for name authority work or to revise their own work when the record of the official NBA comes along later? Though logical, this underlying principle of UBC has serious practical drawbacks. Bourdon’s support for a meaningfully structured international standard authority data number (ISADN) to link national versions of authority records for the same entity, and for flexibility in heading choice, would help alleviate the problems of integrating data from parallel authority files; however, as she also notes, administering such a system poses serious problems.

Overall, Bourdon has written (and Ruth Webb has ably translated) a thoughtful analysis of the several functions of authority data that should be of value to anyone contemplating the problems of sharing authority work. Meanwhile, the recent addition of British Library name authority records to the Library of Congress authority file marks another positive step in the slow progress toward international authority control.—Stephen S. Hearn, University of Minnesota

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Letters

From Bella Hass Weinberg, Professor, Division of Library and Information Science, St. John's University, Jamaica, New York, and Robert Singerman, Bibliographer (Anthropology, Jewish Studies, and Linguistics), Price Library of Judaica, University of Florida, Gainesville, Florida:

In scanning the table of contents of the April 1994 issue of LRTS and encountering an entry for an article entitled "Empirical Analysis of Literature Loss" (Schwartz 1994), we expected to find a study of the theft of fiction from libraries (colleagues have echoed this interpretation); the abstract reveals, however, that the paper deals with collection development. We had hitherto been unfamiliar with the term "literature loss," which the author defines as "the declining ability of the nation's research libraries to maintain comprehensive book collections" (p. 133).

The LRTS reviewers of "The Year's Work in Collection Development" (Lehmann and Spohrer 1993) did not employ this term; Library Literature has not established it as a subject heading; and a free-text search of ERIC failed to retrieve any documents with the phrase "literature loss" in the title. A colleague who is knowledgeable regarding AMIGOS (the software used in the study) reports that the term does not emanate from that environment. Perhaps Schwartz coined the term, which we consider infelicitous—you can't lose something that you never owned.

The abstract mentions that the author's methodology was applied to "a selected field" but does not identify it. Only in the second column of the full text is the reader informed that the field in question is Judaic Studies. Both the title and the abstract thus fail to convey the disciplinary focus of the paper. Although the methodology of a study in the field of Judaica cataloging which was recently published in LRTS (Weinberg 1993) is applicable to many disciplines (as Schwartz believes his is), the keyword Judaica was included in both the title and the abstract of that paper. LRTS articles are of interest to some readers for their methodological focus, to others for the subject studied.

The latest Instructions for Authors issued by LRTS specify that the title should "fully describe the content of the article" (Instructions 1994, 111, point 4). They also request an informative abstract (Instructions 1994, 111, point 5; emphasis added). Such an abstract should, according to the American National Standard for Writing Abstracts (ANSI 1979a, sect. 3.4.2), report on data collected as well as findings. Schwartz's abstract does neither. It merely mentions that the holdings of "71 research libraries" were examined, without specifying that the study was limited to Association of Research Libraries (ARL) members.

Although the adequacy of a title and abstract are crucial to relevance judgments (as this case demonstrates), journal referees are generally not asked to comment on these elements of a paper. They are, however—in our experience with other major journals in the field of library and information science—asked to comment on the adequacy of citations. We do not have the distinction of being LRTS referees, but it would surprise us if the referees' guidelines for this journal do not include this criterion, although the Instructions for Authors (1994, 111, points 6-7) discuss only the form of references, not thoroughness of the literature search.

It is absolutely incredible that a paper on collection development of Judaica does not include a reference to even a single paper on that subject. We do not expect LRTS referees to be regular readers of Judaica Librarianship, which has
featured several papers on collection development—including one reprinted from the conference proceedings of an ARL library, Harvard (Grunberger 1989)—but we do expect a referee in that area to know the journal Library Acquisitions: Practice & Theory, which not long ago had a special issue devoted to "Collection Development of Religious Materials" (Singerman 1991), including an article on "Defining the Scope of Judaica" (Weinberg 1991). The Judaica exhibition catalog of another ARL member, the Library of Congress, has treated this question as well (Karp 1991, xxii-xxiv).

Schwartz dismisses the problem of defining the scope of Judaic Studies in a single sentence (p. 134), in which he notes that the field includes history [LC Class D], the arts [LC Classes M-N], and philosophy [LC Class B]. Still, he limits his study to class BM (religion). Although his position title is Social Sciences Bibliographer, Schwartz fails to touch on the vast corpus of Jewish social studies. There are special libraries, such as that of YIVO Institute for Jewish Research, which focus primarily on the social sciences and collect little in the area of theology. Many of YIVO's holdings on Jewish folklore, sociology, and political movements would be classed by LC in G, H, and J, respectively.

By limiting his population to ARL institutions, Schwartz is remiss in having excluded specialized research-level Judaica collections, such as the libraries of the Jewish Theological Seminary of America, Hebrew Union College-Jewish Institute of Religion, and Yeshiva University. Although the author admits that OCLC data do not reflect "world publishing output in its totality" (p. 134), he fails to mention the most comprehensive collection of Judaica in the world, that of the Jewish National and University Library (JNUL) in Jerusalem. JNUL acquisitions are documented in the bibliographical quarterly Kiryat Sefer, which Singerman (1992, 116) calls the "standard resource for defining the broad parameters of the bibliographic universe in which a Jewish Studies bibliographer functions." Schwartz does not mention Kiryat Sefer or any other bibliographical tools in Jewish Studies, although his abstract claims that he has come up with "a model of total book publication output."

Among the disciplines of Judaic Studies that the author omitted is Hebrew language and literature (LC Class PJ). Singerman (1992, 119) listed this among "Major Divisions of Jewish Studies." A highly relevant point not made in Schwartz's article is that much of the literature on the Jewish religion is published in the Hebrew language and script. Although OCLC promised to develop a Hebrew character set a couple of decades ago, it never did. Quite a few Judaica libraries that joined OCLC in anticipation of the promised Hebrew capability did not input their Hebrew records—not even in romanization—on that utility, preferring instead an adherence to cataloging in the original script. In 1988, RLIN's Hebrew script capability became operational, and several major Judaica libraries migrated from OCLC to RLIN and began inputting their Hebraica catalog records on the latter network, without tapeloading them to OCLC. The results of a survey of recent Hebraica cataloging practices, with specific reference to RLIN and OCLC, have been published by Lerner (1993).

Schwartz's exclusive focus on OCLC and ARL members, without any mention of RLIN as the utility of choice for research-level Judaica collections since 1988 or of OCLC's failure to support Hebrew script, is a shortcoming and calls into question his overall finding of an alleged literature loss: "an estimated 40% of book output is not held in any of the 71 research collections" (p. 135). Given that the institution with which the author is affiliated, Rice University, is a member of the Research Libraries Group, he should have been aware of RLIN's non-Roman script capabilities, as well as of the large number of Judaica titles cataloged on that utility.

Nowhere does Schwartz elaborate on the nature of the 7,100 titles in Judaic Studies, all classified in LC class BM and published in the 1979-88 period, with respect to their languages or countries of
publication. Is he considering only American imprints in English? Or is this population drawn from the polyglot literature of Jewish Studies published throughout the world, including Hebraica from Israel? If the scope of his study extends to Hebrew books, is it really appropriate to berate ARL libraries on campuses without graduate programs or centers of Jewish Studies for not acquiring works in that language?

One looks in vain for a description or characterization, however cursory, of the titles deemed "lost"; a representative title listing should have been appended to the paper to educate and guide Judaica subject bibliographers. Could some or most of these titles be unchanged reprints, privately published "vanity" books, or juvenile works, and therefore deemed out of scope by ARL bibliographers? Without a list, however abbreviated, of this so-called "lost literature," the value of Schwartz's study to other bibliographers is at best compromised and at worst nil.

Schwartz refers to the literature not creative acquisitions methods; similar techniques are required for other branches of fudaica. The unusual methods employed for Yiddica, for example, have been described by Abramowicz (1984). Schwartz does not even hint at the publication patterns or acquisition methods of Judaica that affect the comprehensiveness of collections in this field.

The author implies that the lack of overlap of Judaica collections is a negative phenomenon. Grunberger (ibid.) has, however, deplored the fact "that our collections are highly duplicative" with respect to monographs; Kertesz (1992) has done the same for periodical collections in Jewish Studies. Thus, even Schwartz's conclusions fail to present a balanced discussion of the topic.

The limitations of using LC class BM to represent Jewish Studies have already been noted. The method used to search the OCLC Online Union Catalog with terms rather than class numbers, described in Schwartz's Appendix, appears to be even more flawed. The only concrete example of a subject heading search is "f SU judaism." Although the author alludes to "associated subject headings," he does not enumerate them. This makes it impossible to evaluate or replicate his methodology. The possibility of replication of a study is a key characteristic of scientific papers (ANSI 1979b, sect. 5.3). Smiraglia and Leazer (1994, 44) claim that "LRTS represents a literature... that shows a continuing maturation toward a hard science." Among the factors they considered was the percentage of articles that report research results. Statistics without methodological details do not a scientific paper make.

Quantitative studies may enhance the image of library and information science, but before undertaking such a study, it is important to know something about the corpus being analyzed. Schwartz does not demonstrate any knowledge of Judaica acquisitions, bibliography, or cataloging (the abc sequence is intentional). His list of Works Cited constitutes a true example of "literature loss." The publications on Judaica collection development that he failed to cite, of which only a small percentage are noted here, are not in the realm of "grey literature" (in the sense of ephemera); they are covered by major bibliographic databases in library-information science. A simple search on the headings "Jewish libraries and collections" and "Jewish literature" in the print version of Library Literature would have identified many of the relevant works. It is significant that the majority of Schwartz's references and much of his narrative are devoted to the justification
of imprecise methodology. This paper is not up to LRTS's usual standard of comprehensiveness and quality.

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Instructions for authors. 1994. Library resources & technical services 38: 111–12.


From Tony Schwartz, Rice University:

I am pleased to be invited to comment on Ms. Weinberg and Mr. Singerman’s letter but at the same time feel frustrated by their lack of even a basic grasp of my article. Apparently, they expected to find a paper written along the same lines as the rest of the literature on Judaica collections and, upon finding that the article does not fit that mold, overlooked or ignored what my article is actually about. Clearly, they misunderstand the subject of the article and the technologies involved. The subject of the article is not "collection development in Judaica." Rather, the subject is how anyone can use the OCLC and AMIGOS technologies, taken together, to generate fairly reliable estimates, for various fields, on a general problem which had not been previously investigated—the declining financial ability of the nation’s libraries to maintain comprehensive collections.

“Collection development” on the practitioner’s level is not the subject because that is a micro-level activity that has no direct bearing on the systems-level problem of assessing the aggregate outcomes of tens of thousands of collection development decisions taken within ARL institutions over a decade. Nor is “Judaica” the subject; it is just one of several case studies of the new technologies.

Thus, the title and abstract correctly target the article to anyone who might be interested in undertaking the same kind of analysis in their own field of interest. To narrow the title or abstract would lose that potential audience, as well as miss the real purpose of such analysis—to make intellectually interesting proposals to outside funding agencies for retrospective collection projects.

Given Ms. Weinberg and Mr. Singerman’s misconception of its subject, it is
little wonder that they are disturbed by the article's lack of references to the conventional literature on Judaica. That literature, which is aimed at the daily work of bibliographers, is simply not relevant to systems-level analysis (the few articles that are relevant are all cited in the first paragraph of my article).

Misunderstandings of the methodology can be cleared up as follows. Why the exclusive focus on ARL libraries? Because they represent a recognizable sample of the nation's libraries and are programmed in the AMIGOS collection analysis system. Why was not RLIN used to gauge aggregate acquisitions? Because RLIN data cannot be correlated to AMIGOS data. Why not include small specialized Judaica collections in non-ARL libraries? Because those few collections have no direct bearing on the article's general premises or statistical relevance to its aggregate findings. Why not search OCLC by subject class number ranges rather than subject terms? Because OCLC is not programmed to generate sets based on a class range beyond a decimal point. Why not describe specific characteristics of the titles comprising the various zones of literature acquisition or loss? That is a good question. Such information may, or may not, be relevant or interesting, depending on the subject literature. Actually, I did find making such descriptions useful in some other articles (cited in the LRTS piece). For example, in the article on literature loss in international relations, I described the earliest records on nuclear warfare because they preceded the nuclear age (of the 1940s) by several years and because they included some striking ideas. Rightly or wrongly for Judaica, I fell back on the assumption that "everybody knows" that acquisition zones are dominated by major publishers; whereas zones of literature loss are filled with less-known publishers, foreign-language materials, dissertations, and so forth.

Why did the article not enumerate the subject headings associated with Judaism? Partly because of my assumption that "everybody knows" the LC hierarchy of sub-headings, and partly because of my failure to stipulate that the search "su Judaism" picks up all subheadings (whereas "su = Judaism" restricts all subheadings).

Why did the article not include subject classes other than that of BM for Judaism? Some insolvable technical problems on correlating OCLC and AMIGOS programmed data came into play, but my major concern was to make a reliable model without writing a "dissertation" on the subject. Is the methodology replicable? Of course it is—my article refers to four other studies of literature loss and points out that all of the findings fall within recognizable patterns.

In a nutshell, the abstract of the article explicitly invites readers to consider the usefulness of the model for generating knowledge that, while low on precision, has broad reliability and relevance. To evaluate the article on that broad, systems-level basis requires a shift in focus from the usual daily affairs of collection development.

**Erratum**

An egregious error occurred in the memorial to Don Cook in volume 38, number 3 (July 1994). Mr. Cook's name is properly given as C. Donald Cook (Charles Donald Cook). We regret the error.—Editor.
Index

Volume 38, 1994

Compiled by Edward Swanson

General Procedures Used in Compiling the Index
The following types of entries are included:
  a. authors—of articles, reviews, and letters
  b. titles—of articles and of articles about which letters were published
  c. subjects—of articles and of books reviewed
Subject entries for individuals are identified by "(about)"; letters are identified by "(c)."
Reviews are indexed by name of reviewer and by subject of the work reviewed, identified by "(r)." They are also listed by title under the heading "Books reviewed."
Entries are arranged word by word following the "file-as-spelled" principle. Numbers are arranged before alphabetical characters; acronyms without internal punctuation are arranged as words.

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