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Title Overlap: A Study of Duplication in the University of Wisconsin System Libraries

It has been commonly believed by many in the profession as well as many of those who fund library programs that collection duplication is exceedingly high across comparable libraries that support similar user needs. Devising efficient ways of assessing duplication, or overlap, among libraries was difficult prior to the availability of archival tapes from bibliographic utilities. Most collection overlap studies were conducted drawing samples from card catalogs or order slips. This paper outlines the results of a study of collection overlap for the University of Wisconsin System libraries. OCLC archival tapes covering the time period July 1977-June 1979 provided two years of cataloging data. More than 392,000 monograph records created by the cataloging activities of eleven libraries were compared to determine duplication rates. Findings based on analyses of these cataloging records are discussed.

ECONOMIC CONDITIONS and inflation have created an environment of increasing costs and dwindling budgets, forcing university and library administrations to rethink library program priorities. Today, few, if any, university libraries enjoy a real growth in purchasing power. Inflation is affecting not only the actual costs of books but also the dollars required to handle, process, and house materials. A sense of alarm has developed and universities have taken a variety of steps to meet the challenge.

One strategy for lessening the impact of inflation on libraries is to reduce duplicate

book purchases. This policy can be administered rather easily in single collection libraries. However, such a policy is somewhat more difficult to implement across a number of libraries. Nonetheless, libraries are now examining cooperative collection development agreements. Cooperative collection development allows two or more libraries to establish purchasing agreements that reduce duplication in specific areas. Under such a plan, some materials are purchased and housed in only one library and are made available to other member libraries.)

The assumptions supporting this approach are based on the belief that collection duplication is exceedingly high from library to library. Thus by monitoring and, when feasible, controlling duplicate book purchases, the impact of budgetary downturns and inflation may be lessened. Of course, it also has been argued that some unspecified level of duplication is necessary to provide acceptable library service at each university location.

The University of Wisconsin (UW) System

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created a Library Planning Study Committee (LPSC) in 1978 to undertake a comprehensive study of the libraries in the UW System. Some of the issues addressed by the LPSC were the need for adequate housing for growing library collections; the potential for cooperative library activities; the feasibility of coordinated acquisitions; and the need for resource sharing. In order to fully address these issues, the LPSC required detailed information about the current overlap in acquisitions of the UW System libraries. Much of the work of this overlap study was sponsored by the LPSC.

LITERATURE REVIEW

Collection overlap studies among libraries have largely been conducted through sampling techniques. Information has been gathered from card catalogs, order slips, or archival tapes provided by a bibliographic utility. While there have been several studies of title overlap, only Nugent has assessed both current acquisitions and total holdings. He found a 40 percent title overlap across the holdings of six New England state university libraries. This figure increased to 47 percent when only current imprints were examined.¹

Cooper, Thompson, and Weeks investigated the degree of title overlap among nine University of California campuses. Their study found that 25 percent of the titles held at Berkeley were duplicated on at least one of three other northern campuses, and 44.9 percent of the University of California at Los Angeles titles were duplicated on at least one of four other southern campuses.²

In a study of Canadian additions libraries, Dingle-Cliff and Davis noted that 76 percent of the seventy-one titles with imprints of 1969 or later were found in at least two libraries.³ Altman found a 52 percent title overlap among thirty-one school libraries.⁴ She stated, "This finding refutes the assumption that school library collections are basically similar."⁵

By sampling orders placed from libraries in the London University System, Urquhart and Schofield found an overlap of 15 percent.⁶ Parker also examined the amount of overlap in acquisitions of five member libraries of the Consortium of Universities of Metropolitan Washington. He reported that 61 percent of the orders were duplicated with

a rate of 2.24 copies per title.⁷

All of the above studies relied on samples drawn from card catalogs or order records. Evans, Gifford, and Franz reported that the State University of New York (SUNY) Central Administration Office of Library Services used the machine-readable bibliographic records (OCLC magnetic tapes) of four member libraries to assess title overlap. This study was part of an overall analysis of OCLC tapes completed to determine collection development practices. Unique OCLC record numbers were compared for a twelve-week cataloging period. It was found that 86.7 percent of 25,622 titles on the tapes were owned by only one library. Only 13.3 percent of the titles were held by more than one library.⁸

UNIVERSITY OF WISCONSIN SYSTEMS LIBRARIES

The University of Wisconsin System has approximately 150,000 students enrolled at thirteen degree-granting universities and fourteen freshman-sophomore centers located throughout the state of Wisconsin. All but two of the thirteen libraries at degree-granting universities were using the OCLC system as a means of cataloging in 1979. The cataloging transactions for these eleven libraries were routinely recorded on magnetic tape and maintained by the Wisconsin Library Consortium. This wealth of data provided an excellent opportunity for an expanded overlap analysis similar to the SUNY study.

All eleven of the UW libraries included in the study serve undergraduate students. In addition, most offer graduate programs, with UW-Madison and UW-Milwaukee providing extensive doctoral programs. Although the nine nondoctoral universities offer similar core course programs, many have focused curriculum specialties, e.g., business, applied technologies, agriculture, home economics, etc.

The magnetic tape cataloging data was complete from the date each library began using OCLC. However, four of the libraries studied were not online during portions of the two-year period studied. Table 1 details the total number of transactions, number of titles, and the dates covered for each of the UW libraries included in the study.

TABLE 1
UNIVERSITIES AND TITLES INCLUDED IN TITLE OVERLAP STUDY

| University of Wisconsin Campus | Monograph Records on OCLC Tapes 7/1/77-6/30/79 | Records Used after Collapse Regardless of Imprint | Records Used after Collapse with Imprints 1976-79 |
|--------------------------------|--|---|---|
| Eau Claire | 32,764 | 30,639 | 20,252 |
| *Green Bay | 57,346 | 54,648 | 9,407 |
| *LaCrosse | 11,380 | 11,004 | 7,089 |
| †Madison | 129,732 | 113,740 | 71,122 |
| Milwaukee | 64,986 | 57,758 | 36,313 |
| Oshkosh | 26,393 | 24,875 | 19,607 |
| *Parkside | 11,768 | 10,769 | 7,315 |
| *Platteville | 9,016 | 8,824 | 4,061 |
| *River Falls | 7,597 | 7,145 | 4,355 |
| Stout | 20,701 | 18,441 | 11,195 |
| Whitewater | 23,333 | 19,710 | 13,843 |
| Total records | 392,016 | 357,553 | 204,559 |
| Total titles | | 267,979 | 124,774 |

*Online status: Green Bay: retrospective conversion project under way; LaCrosse: online Dec. 1977- ; Parkside: identifiable retrospective records eliminated prior to collapse programs; Platteville: online Feb. 1978- ; River Falls: online June 1978-

†Includes the Wisconsin State Historical Society from Dec. 1977- ; Instructional Materials Center, Health Sciences and Law Libraries.

METHODS

OCLC archival tapes for the UW System for the time period July 1, 1977, through June 30, 1979, were used. Two years of cataloging data were examined to minimize the effect of purchasing and/or cataloging delays. The twelve-week time period used in the SUNY study was viewed as too short, as the authors of the SUNY report had warned: "The presence of 'unique' records (those held by exactly one institution) is suspect because it is unusually high and similar for all institutions. It is due to the short time period analyzed, the difference in cataloging practices at the four institutions, and the relative timeliness of the different selection and acquisition processes."⁹

The archival tapes contain a full bibliographic description, OCLC unique control number, and a library identification code for each cataloging transaction (produce, update, replace, and cancel) completed by each library. The tapes do not contain uniform data for each library. Local practice for cataloging various types of materials and special projects (retrospective conversion of old cataloging and reclassification) are reflected on the OCLC tapes. Thus, all identifiable retrospective conversion records were excluded. Also, serial records were excluded from the study since several UW System libraries do not catalog these materials.

The UW System study differs from most of

the previously cited studies in that government documents, musical scores, and audiovisual and instructional materials were included. While the inclusion of serials would likely effect the results, it was felt that the large sample size would reduce the impact of these nonstandard items. Indeed, only 2 percent of the titles analyzed were audiovisual or instructional materials.

All titles, regardless of imprint date, were used for the first analysis. A second analysis was done using a smaller group of titles with publication dates from 1976 to 1979. The examination of current imprints diminished the possibility of artificially high rates of unique titles due to cataloging backlogs, unidentified retrospective cataloging, reclassification, and time lags in purchasing materials. While the analysis of current imprints provided a better indication of the overlap in current acquisitions among the eleven UW libraries, it ignored those materials that were currently purchased for special, rare book, and other collections made up of older imprints. Thus, the results of the two analyses represent two extremes of overlap.

The following items were extracted from each archival tape record: the unique OCLC control number, the three-character library identification code, and the first two letters of the LC classification number (discipline code). All eleven libraries use the Library of Congress classification scheme. The discipline code was taken from either the local LC

call number (090) or national LC call number (050) field. Of the total records processed, 6.1 percent did not contain an LC call number and were excluded only for the analysis by discipline.

These twelve-byte records were sorted by OCLC control number and by library location within OCLC control number. A collapse program was run to eliminate all but the most recent occurrence of a record with the same OCLC control number and library location code. The collapse program combined all UW-Madison locations, including the Wisconsin State Historical Society, thereby eliminating the duplicates found among these campus libraries. Further, the collapse program eliminated all duplicate records created by a single library. These records may represent multiple copies, corrections to previous cataloging, or cancel transactions (to withdraw a title). The results of the collapse are found in table 1.

Title overlap frequency programs were then run to compare the numbers of remaining location codes for each title. Five categories of overlap comparisons were completed: (1) among all eleven university libraries; (2) between the two university libraries serving doctoral and nondoctoral universities; (3) among the nine university libraries serving nondoctoral institutions; (4) between university libraries serving doctoral and nondoctoral universities; and (5) among all university libraries by four disciplines.

All comparisons were done for all titles regardless of imprint date. Only the first three

comparisons were repeated for titles having an imprint date of 1976-1979.

FINDINGS

Comparison of the 267,979 records created by the cataloging activity of the eleven UW libraries from July 1977 through June 1979 revealed that only 18.16 percent of these titles had two or more location codes and 1.05 percent had six or more location codes. The percentage of titles overlapped increased to 31.99 percent for two or more locations and to 2.24 percent for six or more locations when only current imprints were compared. Table 2 details the overlap among titles for both comparisons.

The actual overlap in currently cataloged materials falls between these two figures, 18.16 percent and 31.99 percent, for titles held in two or more locations. The actual number of titles with six or more locations differed by only eleven titles between the two comparisons. The low overlap among all titles cataloged confirms the SUNY findings.¹⁰

These findings indicate that the level of title duplication among all the UW libraries was much lower than previously assumed. Since this study relates to currently cataloged material, it does not necessarily serve as an indication of total collection overlap among the libraries studied.

The data for each individual UW library compared with the rest of the UW System libraries studied are given in table 3. The percent of overlap was higher for any single library than for the group as a whole. The larg-

TABLE 2
COMPARISON AMONG ALL UNIVERSITIES

| | Titles | Percent | Cumulative Percent |
|---|---------|---------|--------------------|
| <i>Comparison of All Titles Held*</i> | | | |
| By one univ. | 219,327 | 81.84 | |
| By two univ. | 28,863 | 10.77 | 92.61 |
| By three univ. | 9,132 | 3.41 | 96.02 |
| By four univ. | 5,012 | 1.87 | 97.89 |
| By five univ. | 2,833 | 1.06 | 98.95 |
| By six or more univ. | 2,812 | 1.05 | 100.00 |
| <i>Comparison of Current Imprints held (1976-79)†</i> | | | |
| By one univ. | 84,860 | 68.01 | |
| By two univ. | 20,967 | 16.80 | 84.81 |
| By three univ. | 8,443 | 6.77 | 91.58 |
| By four univ. | 4,898 | 3.93 | 95.51 |
| By five univ. | 2,805 | 2.25 | 97.76 |
| By six or more univ. | 2,801 | 2.24 | 100.00 |

*Three titles were held in all eleven university libraries.

†No titles were held in all eleven university libraries.

TABLE 3
PERCENT OF UNIQUE TITLES IN EACH UNIVERSITY LIBRARY

| University of Wisconsin Campus | All Titles Cataloged | | Current Imprints | |
|--------------------------------|----------------------|----------------|------------------|----------------|
| | Titles Cataloged | Percent Unique | Titles Cataloged | Percent Unique |
| Eau Claire | 30,639 | 45.95 | 20,252 | 28.57 |
| Green Bay* | 54,648 | 80.03 | 9,407 | 22.42 |
| LaCrosse | 11,004 | 46.63 | 7,089 | 27.56 |
| Madison | 113,740 | 72.85 | 71,122 | 61.91 |
| Milwaukee | 57,758 | 57.99 | 36,313 | 39.37 |
| Oshkosh | 24,875 | 34.30 | 19,607 | 22.62 |
| Parkside | 10,769 | 37.07 | 7,315 | 18.65 |
| Platteville | 8,824 | 53.32 | 4,061 | 21.79 |
| River Falls | 7,145 | 46.13 | 4,355 | 24.75 |
| Stout | 18,441 | 57.45 | 11,195 | 40.39 |
| Whitewater | 19,710 | 45.22 | 13,843 | 31.76 |

*The figures for the comparison of titles regardless of imprint date for UW-Green Bay included retrospective conversion records that were unable to be identified and eliminated.

est library, UW-Madison, had the lowest overlap rate with 38.09 percent of its current imprints duplicated elsewhere in the UW System. The smaller libraries (14,000 titles cataloged or less) tended to have considerably larger overlap rates for current imprints, with an average of 73.24 percent. This confirms Davis and Shaw who found that, "the larger the library from which the sample is drawn, the more likely it is to have material that is either esoteric or of only local interest."¹¹

Since the two largest libraries studied are also the two libraries that serve doctoral-degree-granting universities, a series of comparisons were run with the doctoral and non-doctoral groups. The overlap comparison between the two groups shows that 11.63 percent of all titles cataloged during the period were held by at least one library in each group. Table 4 presents these results.

Comparisons were also done within each group. Between the doctoral universities (UW-Madison and UW-Milwaukee), 10.85 percent of all titles cataloged were duplicated. When only current imprints were con-

sidered, the figure increased to 17.41 percent. Among the nine non-doctoral universities, 17.29 percent of all titles cataloged were duplicated by at least two libraries in the group. Current imprint overlap was 34.85 percent. (See tables 5A, 5B.)

As expected, the overlap among the smaller, non-doctoral group was higher than the overlap between the larger university libraries. This difference may be the result of the similarity in basic freshman and sophomore courses offered at the non-doctoral universities as well as the diversity of the academic programs at the doctoral institutions. The results, however, may be simply a function of current purchase volume.

Comparisons were also done for all eleven libraries in four basic academic subject areas. Analysis was done on all titles cataloged during the period, eliminating only those records without LC call numbers. Discipline codes were assigned as given in table 6. The general literature material showed the most duplication, with 24.13 percent of the titles held in two or more libraries, followed by science with 23.07 percent, social science with 19.89 percent and history with 17.08 percent duplication. These four disciplines had similar lower levels of overlap than anticipated for basic subject areas.

Thus, overlap was surprisingly low in all five comparisons for the UW System libraries. In an effort to further understand the nature of these results, a limited analysis was done to determine the bibliographic characteristics of the high versus low overlapped titles. A sample of 249 unique titles (0.3 percent of the unique titles) and a sample of 84 of

TABLE 4
COMPARISON BETWEEN DOCTORAL AND NONDOCTORAL UNIVERSITIES

| | Titles | Percent |
|--|---------|---------|
| Titles held by doctoral Universities and by non-doctoral Universities (overlap) | 31,170 | 11.63 |
| Titles held by either doctoral Universities or by non-doctoral Universities (unique to either group) | 236,809 | 88.37 |

TABLE 5A
COMPARISON BETWEEN DOCTORAL UNIVERSITIES

| Titles Held | All Titles Cataloged | | Current Imprints | |
|-------------------------------------|----------------------|---------|------------------|---------|
| | Titles | Percent | Titles | Percent |
| By both UW-Madison and UW-Milwaukee | 16,788 | 10.85 | 15,933 | 17.41 |
| By only one doctoral university | 137,922 | 89.15 | 75,569 | 83.59 |
| Total | 154,710 | 100.00 | 91,502 | 100.00 |

TABLE 5B
COMPARISON AMONG NINE NONDOCTORAL UNIVERSITIES

| Titles Held | All Titles Cataloged | | Cumulative Percent | Current Imprints | | Cumulative Percent |
|----------------------|----------------------|---------|--------------------|------------------|---------|--------------------|
| | Titles | Percent | | Titles | Percent | |
| By one univ. | 119,463 | 82.71 | | 39,071 | 65.15 | |
| By two univ. | 15,335 | 10.62 | 93.33 | 11,588 | 19.32 | 84.47 |
| By three univ. | 5,413 | 3.75 | 97.08 | 5,127 | 8.55 | 93.02 |
| By four univ. | 2,413 | 1.67 | 98.75 | 2,381 | 3.97 | 96.99 |
| By five univ. | 1,118 | 0.77 | 99.52 | 1,110 | 1.85 | 98.84 |
| By six or more univ. | 697 | 0.48 | 100.00 | 694 | 1.16 | 100.00 |
| Total | 144,439 | | | 59,971 | | |

TABLE 6
COMPARISON AMONG ALL UNIVERSITIES IN FOUR DISCIPLINE AREAS

| Discipline Area | Titles | Percent | Cumulative Percent |
|--|--------|---------|--------------------|
| <i>History (D, E and F) Titles Held</i> | | | |
| In one univ. | 22,986 | 82.92 | |
| In two univ. | 2,567 | 9.26 | 92.18 |
| In three univ. | 890 | 3.21 | 95.39 |
| In four univ. | 559 | 2.02 | 97.41 |
| In five univ. | 353 | 1.27 | 98.68 |
| In six or more univ. | 365 | 1.32 | 100.00 |
| Total | 27,720 | | |
| <i>Social Science (H) Titles Held</i> | | | |
| In one univ. | 39,088 | 80.11 | |
| In two univ. | 5,437 | 11.14 | 91.25 |
| In three univ. | 1,871 | 3.83 | 95.08 |
| In four univ. | 1,030 | 2.11 | 97.19 |
| In five univ. | 661 | 1.35 | 98.54 |
| In six or more univ. | 706 | 1.45 | 99.99 |
| Total | 48,793 | | |
| <i>Science (Q) Titles Held</i> | | | |
| In one univ. | 14,210 | 76.93 | |
| In two univ. | 2,513 | 13.61 | 90.54 |
| In three univ. | 931 | 5.04 | 95.58 |
| In four univ. | 439 | 2.38 | 97.96 |
| In five univ. | 188 | 1.02 | 98.98 |
| In six or more univ. | 190 | 1.03 | 100.01 |
| Total | 18,471 | | |
| <i>General Literature (PN) Titles Held</i> | | | |
| In one univ. | 3,725 | 75.87 | |
| In two univ. | 614 | 12.51 | 88.38 |
| In three univ. | 245 | 4.99 | 93.37 |
| In four univ. | 160 | 3.26 | 96.63 |
| In five univ. | 73 | 1.49 | 98.12 |
| In six or more univ. | 93 | 1.89 | 100.01 |
| Total | 4,910 | | |

the highly overlapped titles (3.0 percent of the current imprints held by six or more libraries) was drawn for the comparison across all institutions. Full OCLC bibliographic records, not locally edited versions, were examined for each title.

Each of these records was analyzed by seven factors: (1) format of the material, (2) language of publication or performance, (3) subject as determined by LC call number, (4) type of material content, (5) publisher, (6) series, and (7) source of original cataloging.

For language, publisher, and source of cataloging there were major differences between the high and low overlap groups. The high overlap titles were all written in English, 40 percent of the high overlap titles were published by university presses, and all but one of the high overlap titles was originally cataloged by the Library of Congress.

The uniquely held items included 22 percent written in foreign languages. University press publications accounted for only 7 percent of the unique titles. The source of cataloging for the unique items was much more varied than for the high overlap group. Twenty-four percent, or 61 titles, was originally cataloged by an OCLC member library. Twenty-seven of these titles were originally cataloged by the UW System library holding the item. These 27 titles were primarily local materials, e.g., theses, state and local documents, and locally published or produced audiovisual materials and monographs.

There were no large differences in the subject area of the materials in the high and low overlapped titles. Both groups had a large number of titles in the areas of social science and general literature. Of the high overlap titles, 20 percent were in the social sciences and 13 percent in literature. This order was reversed for the unique titles with 16 percent in literature and 14 percent in the social sciences. Philosophy/psychology/religion was the third largest subject area with 11 percent of the high overlap titles. All other subjects had 8 percent or less of the titles for both samples.

Table 7 details series and type of contents. No differences were readily apparent. Government documents and biographies were the most common types of contents.

It is difficult to assess the effect of material

TABLE 7
BREAKDOWN BY SERIES AND TYPE OF CONTENTS
FOR HIGH OVERLAP AND UNIQUE TITLES

| | Percent of High Overlap Titles | Percent of Unique Titles |
|-----------------------------|--------------------------------------|--------------------------------|
| Series statement present | 22.62 | 35.34 |
| Type of contents | | |
| Government publications | 0 | 13.25 |
| Textbooks | 1.19 | 2.41 |
| Addresses, essays, lectures | 9.52 | 4.42 |
| Conference publications | 4.76 | 3.21 |
| Biography | 11.90 | 4.42 |
| Fiction | 0 | 5.62 |
| Dictionaries | 1.19 | 0 |
| Juvenile | 0 | 1.61 |
| Bibliographies | 3.57 | 2.01 |
| Indexes | 1.19 | 0 |

format on overlap. The high overlap titles were all printed items. Three percent of the unique titles were nonprint materials. Since academic libraries do not acquire audiovisual materials in great numbers, they are more likely to be unique titles. The UW-Stout, which acquires a large amount of nonprint material in applied technologies, had the second highest percent of unique materials.

SUMMARY

This analysis of title overlap placed the levels of duplication among all eleven universities at a lower level than previously assumed. The actual rate of duplication falls between 18 and 32 percent for the entire UW System.

These overlap rates were determined by listing all titles studied and counting the actual number of titles with two or more locations. These findings validate the findings of the SUNY study, but differ substantially from many of the overlap studies cited earlier. A close reading of those studies show that, in some cases, the overlap figures given are actually an average of the individual overlaps in several libraries and not a comprehensive count of overlapped titles.

There were no clear trends in any of the four basic academic subject areas. However, the larger libraries and those smaller libraries with special subject emphasis seem to be collecting material that is highly unique. A cooperative acquisitions program built on existing subject emphasis should result in larger collections of unique materials.

The highly overlapped titles do not appear to be a core of needed reference materials. The materials most likely to be frequently duplicated are English language materials published by university presses. These materials are standard items that seem to be routinely cataloged by the Library of Congress. The purchase of these materials by six or more of the UW libraries may be an indication of both the pertinence of the material published by university presses and the reliance on these publishers by book selectors. University press titles are prime candidates for inclusion in a systematic cooperative acquisition program.

Although the overlap found in this study was smaller than anticipated, the numbers of titles duplicated was still substantial. The 10.77 percent of all titles cataloged that were held in two separate locations represented 57,726 separate purchases of 28,863 titles.

The 1.06 percent held by five UW libraries represented 14,165 purchases of 2,833 titles.

Further analysis of the titles that were duplicated would be helpful in developing cooperative acquisition policies. A more detailed study of the subject areas represented by high and low overlap titles, extending beyond the basic disciplines, might reveal current trends in purchasing that could be used to serve as a basis for focusing collection-development responsibilities among the UW libraries.

Additional study of existing collections, as well as material currently added to the collections, is needed to identify the core of material that should be present in each library. Identifying some level of desirable or required duplication will clarify those collection areas in which duplication can be substantially reduced.

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