

The Use of Books within the Library

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Most commentators have accepted the assertion that the in-library use of books mirrors their circulation. The present authors, after challenging the logic of this assumption, describe a study of both the circulation and in-house use of 13,029 volumes (randomly chosen from a collection of 1.1 million volumes), both serials and monographs in all subject areas, over a period of 7 years. It was found that more than 30% of the monographs and 25% of the serial volumes had one kind of use but not the other, and that weeding based on lack of circulation alone would eliminate from a 1-million-volume library at least 112,000 volumes that had actually been used quite recently. Further findings are presented, all of which challenge the notion that internal use can be inferred from circulation figures. Added are a suggestion for another study and a comprehensive bibliography of the literature on the in-library use of books.



Research employing book use surveys for collection development purposes such as discarding books, canceling subscriptions, and deselecting for remote storage began to be conducted in earnest in the 1960s. The most cited of the early researchers was Richard W. Trueswell, who was, however, criticized for at least one methodological weakness: the equation of usage with circulation.¹ It was pointed out that use may mean more than circulation: a book can be used without leaving the library. (It may also mean less: a book can leave the library without being used.)² Several critics suggested that the noncirculating uses should not be ignored, that they might be important, and that studies ought to be conducted to enlighten the profession on the in-library use of books.

The first to conduct such a study were Herman H. Fussler and Julian L. Simon.³ On the basis of a brief questionnaire in-

serted into selected books and the inspection of the completed questionnaires after a 6-month base period, Fussler and Simon concluded: "Books that develop little recorded-use develop little browsing-use, and books that develop much recorded-use develop much browsing-use."⁴ This conclusion is puzzling to the reader, who has on the previous pages not only read that "there does seem to be some tendency for the low-use books to get 'more than their share'—on a proportional basis—of the browsing-use . . . High use books get 'less than their share' of browsing-use," but has also noticed that the figures in the tables provided show that as the number of recorded uses increases, the number of browsing uses tends to decrease."⁵

Despite these new inconsistencies, the Fussler-Simon thesis was endorsed by the most cited of all sources on the topic: the Pitt report, a study of collection

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usage in the University of Pittsburgh's libraries in 1977. The Pitt researchers devised a practical experiment to test their belief that in-library use would correlate highly with circulation. The experiment—a sampling of books left on the libraries' tables during 30 randomly chosen days—convinced the researchers that their assumption was valid. Seventy-five percent of the books left on tables either had previously circulated or circulated within the period of the experiment, and another 3% circulated in the 12 months following, leading the authors to write: "We speculate that the number of items used in-house which have circulated or will circulate externally will increase with time, approaching but not reaching 100%," and to conclude that "in terms of whether or not a book or monograph is ever used, it is sufficient to examine the external patron circulation data."⁶

CRITICISM OF THE PITT REPORT

Most of the literature on the subject accepts this conclusion. If there are differences in circulation and in-library use patterns, it is agreed that they are not major enough to be worth taking into account. There are, however, some dissidents, of whom the most thorough are Casimir Borkowski and Murdo I. MacLeod in a 1979 article, and Robert M. Hayes in one published in 1981. The former, after conducting a small but effective study of their own, concluded that "throughout, [the Pitt study] equates circulation with use. Because of the invalidity of the in-house sample, this repeated assumption/ assertion cannot be defended and is, in fact, simplistic and inaccurate."⁷ Hayes, applying a mixture of Poisson distributions to the use of Pitt's library materials, wrote: "Allocating to remote storage all volumes from a given year of acquisition that had not circulated for seven years or more . . . would affect adversely about 25.0% of the in-house usage of volumes for that year . . . Allocating . . . 'Zero Circulation' volumes, that have Low and High In-House Usage, to remote storage would have most deleterious effects upon in-house usage."⁸

We also reject the Pitt conclusion on logical grounds. We will return later to Borkowski and MacLeod's assertion that any test of in-library use based on books left on tables is totally inadequate. Quite apart from that, we find two fallacies in the "speculation" on which the Pitt authors base their conclusion.

- The speculation is purely *hypothetical*. The jump from 78% to "approaching 100%" is an unproven extrapolation, quite out of place in a study otherwise based on sound statistical methodology. Furthermore, even if the assumption were true, is it saying anything? We would suppose that if the extrapolation of *any* rising percentage were extended to infinity, it would theoretically attain 100%, but the time we are concerned with is very finite.
- More importantly, it is *inconsistent with its own premises*. Since the Pitt conclusion (followed by most commentators) claims that lack of circulation alone is sufficient evidence on which to base deselection decisions, of what relevance is a conclusion based on the *opposite* of a circulation lack? The entire in-library experiment of the Pitt researchers involved books that *had* been used *internally*, not books that *had not* been used *externally*.

To underscore this inconsistency, let us summarize. The Pitt report (a) found that 40% of its sample of books had not circulated in the 6 years following their acquisition; (b) asserted that "circulation" may stand for total use, since it correlates almost completely with in-library use; and (c) concluded that the University of Pittsburgh Library (and probably most other academic libraries) may be overstocked, or that, at the least, a significant portion of their acquisitions could be "shared" with other institutions. The last two assertions together aroused the ire of many on the Pitt campus, who envisioned the withdrawal of thousands of books judged guilty on the sole circumstantial evidence of an empty date-due slip. The fears may indeed have been valid, since the practical effect of the Pitt report is clearly to justify weeding on such a basis. We can assume,

the report says, that a book that has not circulated is a candidate for withdrawal, since circulation has been identified with total usage, and a book with no record of circulation is almost certainly a book without use of *any* kind. Yet the experiment which "proved" this to the authors' satisfaction did not focus on this category of books with no record of circulation. The prisoner has been found guilty without trial.

What we need to know, as has been agreed by all, is whether books that have not circulated have also not been used within the library. Clearly, any experiment that expects to throw light on this question must start with books that have *not circulated* over a considerable period of time and find out whether or not they have had in-library use over the same or a similar time period.

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The problem is that this last requirement is impossible for most libraries. Almost all have circulation data for each individual book, easily gathered from its date-due slip, but few have corresponding in-library use data, since few have instituted a system of recording such use. This fact has had two consequences. First, it limited the Pitt study to the experiment described above, a limitation which, as we have seen, rendered it irrelevant to our practical needs. Second, it naturally led librarians to hope that the circulation record of a book would prove to be sufficient evidence for deselection decisions. The hope was no doubt the source of the Pitt researchers' original hypothesis, as well as of the succeeding commentators' agreement with their conclusion.

METHODOLOGY AND FINDINGS

At the Riverside campus of the University of California we found ourselves in the fortunate position of being able to

replace wishful thinking about in-library use with facts, for we are an exception to the generalization mentioned in the last paragraph. For 7 years the library kept a record of in-library use as well as circulation, by means of a red-inked date stamped on the date slip of every book that had been left lying on a table, ledge, shelf, etc., or beside a photocopy machine.

Thirteen thousand and twenty-nine volumes—1 in every 100, monographic or serial, randomly selected from all LC class-number categories—were examined for use, both external (number of times checked out) and internal (number of times red-dated), within the 7-year period. Computer-generated tables were extracted from the data, correlating the number of external with the number of internal uses.⁹ The most important findings are the following:

1. In the period covered by the study, 11.2% of the monographs and 13% of the serial volumes did not circulate but had some recorded in-library use; and 19.5% of the monographs and 12.8% of the serial volumes had no recorded in-library use but circulated. Consequently, a total of 30.7% of the monographs and 25.8% of the serial volumes had one kind of use but not the other (see table 1).

These figures are substantial. If in one 7-year period 25 to 30% of our sample received one kind of use but not the other, how can it be maintained that there are no significant differences between external and internal use, or that circulation can be identified with total usage?

Using our method of recording in-house usage, our study shows that, from a library of one million volumes, the number that had been used in a 7-year period but would be evicted by any weeding project based on lack of circulation alone would be 112,000. Furthermore, as we will see, the true figure must be much higher than that, since our method captured only a fraction of the number of times in-library use actually took place.

2. Relative to each other, monographs received much more external circulation, serials more in-house use (see table 2).

TABLE 1
VOLUMES WITH USE OF ONLY ONE KIND

	No.	%
<i>Monographs</i>		
a. Total volumes in sample	9,379	100.0
b. Volumes never checked out but used in-house	1,053	11.2
c. Volumes never used in-house but checked out	1,831	19.5
d. Volumes with use of only one kind (= b + c)	2,884	30.7
<i>Serials</i>		
a. Total volumes in sample	3,650	100.0
b. Volumes never checked out but used in-house	476	13.0
c. Volumes never used in-house but checked out	466	12.8
d. Volumes with use of only one kind (= b + c)	942	25.8

TABLE 2
COMPARISON OF MONOGRAPHS AND SERIALS

	No.	Ratio of b:a
<i>Monographs</i>		
a. Volumes never checked out but used in-house	1,053	
b. Volumes never used in-house but checked out	1,831	
		1.74:1
<i>Serials</i>		
a. Volumes never checked out but used in-house	476	
b. Volumes never used in-house but checked out	466	
		0.98:1

3. In some cases, the number of recorded in-library uses was quite high, even when there was little or no external use. Volumes with no circulation had as many as 10 recorded uses within the library; those with only one circulation, up to 13 (see table 3).

4. There are striking differences by subject. Books on movies were used much more in-house; those on law, horticulture, zoology, and anatomy were checked out much more frequently (see table 3).

SUGGESTIONS FOR FURTHER RESEARCH

We have mentioned that Borkowski and MacLeod recognized the inadequacy of determining in-library use simply by counting books left on tables. Joan Stockard, Mary Ann Griffin, and Clementine Coblyn, the only others to

devote space to this concern, presented a most useful table summarizing the results of earlier studies' findings in regard to the ratios of in-library to circulation uses, and included the methodology used in each study. When the findings of Stockard et al.'s research are added, the ratio ranges from 0.4:1 to 6.4:1.¹⁰

A closer look at this table tells us more than the authors may have noticed. All the studies finding a ratio of less than 1:1 (i.e., more external than internal use) used the "pick-up" methodology, counting volumes left on tables. The surveys using questionnaires tended to produce much higher ratios (i.e., more internal use); and the highest ratio of all (4.7:1 for monographs only, at Newcastle-upon-Tyne Polytechnic), came from a different methodology altogether: putting a slip within each sample item in such a way

TABLE 3
AVERAGE AMOUNT AND RANGE OF USE

(CO=Times Checked Out; IL = Recorded Times Used In The Library)
 Total Sample: 13,029 Volumes

Section A: Monographs
 Total Monograph Volumes: 9,379
 Volumes with No Recorded Internal or External Use: 4,047

Volumes with Recorded Internal Use:	Volumes	CO	IL	Average IL	Range of IL
CO=0	1,053	0	1,589	1.50	1-10
CO=1	670	670	1,189	1.77	1-13 ^a
CO=2	446	892	884	1.98	1-9
CO=3	310	930	724	2.34	1-19
CO=4	231	924	629	2.72	1-15
CO=5+	791	*	*	*	*

^a Highest figures from PN1993-1995 (Movies). Two items in PN1993-1995 had 13 and 12 in-house uses respectively; these were the highest figures recorded.

* Figures would be meaningless since referring to volumes in different categories.

Volumes with External Use:	Volumes	CO	IL	Average CO	Range of CO
IL=0	1,831	4,779	0	2.61	1-60 ^b
IL=1	1,033	3,180	1,033	3.08	1-40
IL=2	574	2,413	1,148	4.20	1-51 ^c
IL=3	327	1,655	981	5.06	1-61 ^d
IL=4+	514	*	*	*	*

^b Highest figures from K (Law). Seven items in K had 32-46 checkouts; only 3 other scattered items had more than 32.

^c Highest figures from QL-QM (Zoology/Anatomy). Two items in QL-QM had 51 and 33 checkouts respectively; the next-highest figure was 26.

^d Highest figures from SB (Horticulture). Two items in SB had 61 and 56 checkouts respectively; the next highest figure was 23.

* Figures would be meaningless since referring to volumes in different categories.

Section B: Serials
 Total Serial Volumes: 3,650
 Volumes with No Recorded Internal or External Use: 2,101

Volumes with Recorded Internal Use:	Volumes	CO	IL	Average IL	Range of IL
CO=0	476	0	756	1.59	1-15
CO=1	185	185	425	2.30	1-11
CO=2	131	262	380	2.90	1-25
CO=3	86	258	298	3.47	1-20
CO=4	52	208	237	4.56	1-23
CO=5+	153	*	*	*	*

* Figures would be meaningless since referring to volumes in different categories.

Volumes with External Use:	Volumes	CO	IL	Average CO	Range of CO
IL=0	466	1,011	0	2.17	1-37 ^e
IL=1	217	547	217	2.52	1-20
IL=2	130	403	260	3.10	1-24
IL=3	80	375	240	4.69	1-24
IL=4+	180	*	*	*	*

^eHighest figures from SB (Horticulture). Seven of the 8 items in SB had 9-37 checkouts; only 6 other scattered items had as many as 9, with the highest 12.

*Figures would be meaningless since referring to volumes in different categories.

Section C: Volumes with No Recorded Use of Either Kind:

Monographs	4,047	% of total sample	43.1%
Serials	2,101	% of total sample	57.6%
Total	6,148	% of total sample	47.2%

that any use of the volume would be obvious.¹¹

Comparing the three methodologies, we suggest that although the pick-up method has one advantage—recording *each* in-library use of each book, rather than simply the fact that the volume was used but an unknown number of times—the slip method is the only one we deem to be effective, since it has been demonstrated twice that for every book left on a table one can assume a large number of in-library uses. In the first study, Harris found that 1,184 volumes had been found with slips missing or disturbed, but of these only 62 (5.2%) had been red-stamped, i.e., left on a table. The conclusion: "The number of books receiving any consultation at all is 20 times as high as the number being used at desks and not being reshelfed."¹² In the second study Borkowski and MacLeod asked 57 faculty members how frequently they obey the "Do not reshelve" signs in the Hillman Library at the University of Pittsburgh. The 50 valid responses were: always: 2; often: 2, sometimes: 15; seldom: 27; never: 4. The authors conclude that the total number of books used in-house might exceed those left on tables by a factor of 5 or 6.¹³

Our conclusion is that the Newcastle-upon-Tyne ratio of internal to external use (4.7:1) is a very conservative figure, since the study from which it resulted excluded the count of periodicals, which

would certainly have raised it considerably. Indeed, in the only study which has separated the monographs from the periodicals in its counts, thus enabling the calculation of ratios for each format, the difference was formidable. For books alone the ratio (in-library use to 1 circulation) was 2.5:1; for periodicals alone, 21.9:1.¹⁴ Perhaps our red-dated volumes represent the tip of an iceberg.

The Newcastle-upon-Tyne ratio of internal to external use (4.7:1) is a very conservative figure.

The practical effect of these considerations on our findings is that our proportion of volumes which did not circulate but were used within the library (11.2% of the monographs and 13.0% of the serials) would be substantially increased, and the proportion of volumes that had no recorded in-house use but circulated (19.5% and 12.8% respectively) would be correspondingly diminished.

Since the most practical application of book use research has always hinged on the question of whether circulation figures suffice to indicate the total use of a given volume, the key component of our findings is that of the books with no circulation but some in-library use. They are after all the potential victims of any weeding procedure based on circulation

alone. Our data (11.2% for monographs and 13.0% for serials) are, as argued above, too low. Higher percentages would result from a study which took into account (perhaps by using the procedures of the Newcastle-upon-Tyne experi-

ment) all the books which had no in-house date-stamping, but which were in fact used within the library in the period under survey. Such a study would tell us how big the iceberg of in-library use really is.

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REFERENCES AND NOTES

1. Richard W. Trueswell, *Analysis of Library User Circulation Requirements: Final Report* (Amherst, Mass.: Department of Industrial Engineering, University of Massachusetts, 1968).
2. A number of writers have agonized over the question of when the handling of a book constitutes use and when it does not. While they all seem to assume that a book checked out is certainly a book used, many argue that there is a hierarchy of categories of in-library use, of which some are worthy of the designation "use" and others not. Fussler and Simon (see note 4 for citation) went so far as to devise a questionnaire asking about five kinds of browsing use, and to divide the results into "not valuable," "loose-core" and "tight-core" uses. They deemed a browsing not valuable when it entailed "merely glanc[ing] at the title page," loose-core when the users "skim[med] through it while standing up," and tight-core when they "carr[ie]d it to a desk and read it there," "not[e]d the title for future reference," or "examine[d] a specific passage." We submit that such divisions ignore the most basic facts of research. Who has not had the experience of taking down a book, looking at an index entry, turning to the page there referenced, finding exactly the information needed, and returning the book to the shelf—all while standing in the one spot, for perhaps as little as 30 seconds? And who can suggest that this experience, or "skimming through" a book while standing, was necessarily less fruitful than those others when we have carted 3 or 4 volumes to a table and pored over them for 30 minutes—or checked them out of the library, as we are likely to have done if we did not have those 30 minutes to spare at the time—only to find nothing of value to our current objective in any of them? In short, all judgments on the relative importance of various kinds of book usage, including circulation versus in-library use, are misguided.
3. W. E. McGrath, "Correlating the Subjects of Books Taken Out of and Books Used within an Open-Stack Library," *College & Research Libraries* 32:280-85 (July 1971) is often cited, but since in his study "a book-and-subject correlation was chosen as the variables to be correlated," its conclusion referred only to the "subjects [emphasis ours] being used within as well as out of the library," thus throwing no light on the collection management problems of discovering which individual books might be selected for discarding, sending to storage, etc.
4. Herman H. Fussler and J. L. Simon, "Browsing and Non-Recorded Use," in *Patterns in the Use of Books in Large Research Libraries* (Chicago: Univ. of Chicago Pr., 1961), p. 204.
5. *Ibid.*, p. 197-98.
6. Stephen Bullick, W. N. Sabor, and R. R. Flynn, "External vs. In-House Circulation," in *Use of Library Materials: The University of Pittsburgh Study*, ed. Allen Kent and others (New York: Dekker, 1979), p.31, 29.
7. C. Borkowski and M. J. MacLeod, "Report on the Kent Study of Library Use: A University of Pittsburgh Reply," *Library Acquisitions: Practice and Theory* 3:136 (1979). This article was the official (and highly critical) response by the University of Pittsburgh's Senate Library Committee to the Pitt report. It may be significant that the 13-page rejoinder which appeared the following year made no reference to this passage on in-library use.
8. R. M. Hayes, "Application of a Mixture of Poisson Distribution to Data on the Use of Library Materials," *American Society for Information Science Proceedings* 18:295-97 (1981).
9. Our methodology, for advice on which we are indebted to Charles K. Huszar, principal statistician, University of California, Riverside, was as follows:

From a collection of 1,250,400 volumes we excluded media, unbound newspapers, microforms, items housed in Reference and Special Collections, and all others that by policy do not circulate and are not red-dated when used in the library—a total

exclusion of 102,600 volumes, for a net count of 1,147,800 that circulate. The source of our sample was the shelflist, which ensured that all eligible works were included—in contrast to previous studies which, by examining only volumes found on the shelves or on tables, have ignored a most important category: those currently in use.

Our sampling method was that called "proportional allocation, with an assured minimum." One percent of the shelflist entries were randomly selected from each subject category (a part of an LC class). But since the proportional allocation required a minimum of 15 volumes with use of some kind, and since it was determined that 48 volumes were needed to assure this minimum, in the smaller categories we had to duplicate the 1% sample several times in order to produce 48 volumes to examine. When the sampling technique found a serial, a monographic set, or a work represented by several copies, all volumes were examined and the use or nonuse recorded separately.

A data sheet was filled out for each volume of the sample, recording the date it was added to the collection; the number of times between May 1979 and June 1986 that it was (a) checked out, and (b) used in the library and red-dated; the last date of use within that period; and whether it was a monograph or serial.

Items not found on the shelves were recalled if found to be circulating, or searched if apparently missing. Almost all of the former and a few of the latter were retrieved and included in the sample.

10. Joan Stockard, M. A. Griffin, and C. Coblyn, "Document Exposure Counts in Three Academic Libraries: Circulation and In-Library Use," in *Quantitative Measurement and Dynamic Library Service*, ed. Ching-Chih Chen (Phoenix, Ariz.: Oryx, 1978), p.136-48.
11. C. Harris, "A Comparison of Issues and In-Library Use of Books," *ASLIB Proceedings* 29:118-26 (Mar. 1977). We were unable to use this superior methodology because library policy had changed by the time our study was undertaken, and the in-library date stamp was no longer being used. We could have observed the displacement of slips for a year or so, but to extrapolate from that to a figure representing 7 years seemed less than responsible without a simultaneous count of books left on tables as a control.
12. *Ibid.*, p.125.
13. Borkowski and MacLeod, "Report on Kent Study," p. 136. Our own experience suggests a ratio perhaps between those of Harris and Borkowski-MacLeod. When in a recent cancellation project we sent out lists of journals showing little or no evidence of recorded use (including during the 7 years in which all volumes left on tables were red-dated), severe protests arose from many faculty members because we were threatening to cancel subscriptions to journals they "used regularly." When we showed them the evidence of empty date slips, we were told by all the protesters without exception that they almost always reshelved the volumes after use, despite the signs on every section of stacks requesting them not to do so; after all, they knew exactly whence each volume was taken and could not be guilty of misshelving.
14. G. C. Bush, H. P. Galliher, and P. M. Morse, "Attendance and Use of the Science Library at M.I.T.," *American Documentation* 7:87-109 (Apr. 1956).