MATT ROBERTS

Guards, Turnstiles, Electronic Devices, and the Illusion of Security

Based on evidence indicated by a four-year study of book thefts, the author offers hypotheses to show the conditions under which books will be stolen and theories to explain why they are stolen. He proposes the theory that scholastic pressure, resulting in high potential use of a collection by persons granted access but denied borrowing privileges, will result in a high rate of loss. The paper concludes with explanations as to why current methods of exit control are ineffective, and what librarians might do to alleviate the problem.

THE PURPOSE of this paper is to examine the problem of book thefts—the volume, rate, and cost of thefts in academic libraries, as indicated by a study of one library over a period of some four years. This, however, is but one purpose, for besides presenting the grim and dismal facts, the author hopes to establish a relationship between thefts and some of the factors which may influence losses, such as rate of growth of the collection, intensity of use, location of the library, and borrowing policies. The theories and hypotheses presented will be the foundation upon which attempts will be made to fathom the motivation of book stealing and to construct a general theory of thievery. Theories, hypotheses, and even opinions, then, there will be; but when all is said and done, the fundamental significance of the problem does not rest for belief or doubt on opinion but rather on fact, or, failing that, at least on the distinct probability that academc libraries not only lose books but lose them in considerable numbers.

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It may surprise, or it may dismay, the reader that this should be the *raison d'etre* of an entire essay. "Everybody knows that books are stolen!" it may be said, perhaps in derision. But in fact does everyone understand the true nature of the problem? Perhaps not. For in what volume, or at what rate are books stolen? Are the losses increasing, decreasing, or constant over a period of time?[1] What connection, if any, is there between losses and the number of duplicate copies available? What is the cost of book thefts? And, finally, if everybody does understand the problem, why has so little been done about it? The questions that may be asked are legion; the answers, unfortunately, seem to be in short supply. The literature is not lacking in comments on security in general and book thefts in particular, but it seems to be notably lacking in what could be called a "control" study. Insofar as such a study of book thefts and li-

[1] At least one writer has expressed the opinion that thefts represent something less of a problem today (written in 1956) than in years past, primarily because of mass production of books and relaxation of lending regulations. See Rolland E. Stevens, "Loss of Books and Library Ownership Marks," in *CRL*, XVII (November 1956), 494.

brary security is at all possible, this is an attempt to fill that gap.

The need for real and factual evidence is obvious, at least to this writer. What is less obvious is the apparent paucity of statistical evidence.[2] There are, one might propose, three basic reasons for this. In the first place, there is a natural hesitancy to attempt to discover the true extent of losses, not only because of the possible traumatic effect, but because when the truth becomes known something will have to be done about it. Second, some librarians feel that nothing can be done about it, that losses are an inescapable condition of open stacks and free access.[3] And third, the prevailing opinion seems to be that inventories are too expensive, that the cost of such an undertaking is far greater than the monetary loss in books.

This harks back to reason one. But is it true? It is difficult at best to equate book losses, especially of out of print books, with anything, even time and reader inconvenience. Doubtless a yearly inventory of an entire collection is out of the question; but research in such depth is hardly necessary to determine with a great degree of accuracy what the over-all losses are, the factors influencing these losses, and the direction in which one must proceed in order to control them. One can discover just what is to be expected throughout the collection, and so determine rate, volume, and cost by means of a fairly small sample.

After many hours conducting the present study, the author found to his amaze-

ment that he was not dealing in hundreds of dollars but in *tens of thousands.* Disregarding for the moment the not insignificant costs involved in locating, buying, and cataloging replacements, let alone the irretrievable inconvenience to borrowers, the library's losses in monetary equivalent exceeded $150,000 over a three-year period. An inventory is expensive in terms of time or money or both—perhaps it should be a "labor of love," to use a favorite expression—but in wandering about the stacks in the early hours of the morning, in the nascent glimmering of still another day one has time in which to consider how the library might have enriched its collection had it not been required to spend so much in replacing missing books. It is at this time that the real tragedy of book losses becomes manifest.

Obviously the library itself is not the principal sufferer in these matters. It is the public that has the most to lose in tolerating book losses; and the attitude of the borrowing public toward library security problems is strange and perplexing. Indeed, it affords a major clue in unraveling the mysteries of borrower morality. A department store manager, for example, who reported to his board of directors that ten per cent of the annual inventory had been lost to shoplifters might well expect those gentlemen—much in the manner related by Dostoevsky's Marmeladov—not to chase him out of their presence with a stick, but to sweep him out with a broom. Consequently, department store managers, as well as others in comparable occupations, have clamored long and loud about pilfering and what to do about it and have gained, to a certain extent, the support of a righteously indignant public. It may be that the public is more concerned with price increases than with the morality of the thing; but whatever the reason, shoplifting is beginning to receive the attention many

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[2] Statistical evidence is not entirely lacking. The Brooklyn public library has reported appalling losses. See: "Brooklyn Takes Action on 'Staggering' Book Losses," in *Library Journal*, LXXXVII (July 1962), 2509.

[3] Open stacks to all, but free access to what? That is the question. What is the great virtue of free access if the desired book cannot be found? Access and availability must go hand in hand, else the value of open stacks is greatly diminished. And besides, who benefits if the library must spend part of its book funds for replacements? Such queries bring up the pertinent question of just when the library finally reaches the point where book losses become intolerable.

think it deserves. But in libraries, the situation seems to be different. Perhaps because we are so eager to rid ourselves of the last vestiges of the custodial image, we have done little to overcome the problem or to educate the public in the matter of thefts.

Education is desperately needed. The prevailing attitude seems at times to be that it is a person's "right" to steal a book, much as it is his "right" to walk on the grass in front of city hall, if he so chooses and as long as he is not caught. Why, a borrower might ask himself, cannot I take whatever I want from the library? Who owns these books, anyway? It is a curious but by no means inexplicable attitude. It stems in large part apparently from a kind of arrogant individuality and from immaturity. That adults, too, steal books does not negate the argument, for age alone has never been a guarantee of maturity. The individual in this country, or perhaps in any country, for that matter, seems to have far greater respect for individual property than for corporate or public property. A man's property is his own; therefore to an honest man it is sacrosanct; but public property, to that same honest man, whatever its form, belongs to all; *ipso facto*, stealing a library book is not really stealing at all.

Subjects Selected for Study

Ten LC classes were selected for the present study. They were:

Social sciences
Psychology (BF)
Sociology (HM-HX)
Political science (J)

Language and literature
English literature (PR)
American literature (PS)

Humanities
English history (DA)
French history (DC)
American history (E)

Other
Medicine (R)
Military and naval science (U-V)

From a statistical aspect, a purely random sample of classes would have been preferable and might have resulted in slightly less deviation in the projections which were made to include the entire collection. There were several reasons for not taking a random sample. One was the desire to compare classes experiencing heavy, moderate, and light use. Although the entire collection might have been divided into three parts according to degree of use, and the selection made from there on a random basis, certain obstacles stood in the way of doing this. The inclusion of class R, for example, which in the main library consists in the majority of books pertaining to psychiatry, made it possible to join (and compare) R with BF, to which it is closely allied. To have been able to include BF and R in the sample by means of random selection would obviously have been all but impossible. Second, another purpose of the study was to compare subject areas, such as between humanities and literature. Here, too, a random selection would not have accomplished the desired purpose. Finally, certain classes had to be arbitrarily eliminated because most of the books in those classes were in other libraries on the campus.

In conclusion, although the principal purpose of the project was to determine over-all losses by means of a sample, to have eliminated classes not represented in the main library and to have divided the remainder by use and then by subject would have fragmented the collection to such an extent that a true random selection would have been virtually impossible, and, in addition, would probably have defeated two major purposes of the study. The sample used, on the other hand, is large enough and covers such a broad spectrum of classes both

in use intensity and other important characteristics, to warrant belief that the figures gathered can be projected to encompass the entire collection in the main library.

Books in the social sciences receive much greater use than those in the humanities, and about the same as those in literature. Psychology and sociology represent high circulating classes, whereas political science falls considerably below average, at least in comparison with the other social sciences. All books in the western languages and literatures (including classical literature!) enjoy heavy use; therefore PR was selected because it represents an average, and PS because it was known that American literature was entering a stage of very rapid growth. Finally, military and naval science was selected because it was virtually a dormant collection. But interest in military science—as in guerrilla warfare—mushroomed shortly after the study began; and to a certain extent this was fortunate, because U-V circulation increased from less than .5 per cent to more than 4 per cent in one year, while losses, which were infinitesimal in the pilot inventory, increased as circulation increased.

HYPOTHESES AND THE CONDITIONS UNDER WHICH BOOKS WILL DISAPPEAR

The hypotheses adopted for the study represent intralibrary conditions, involving both borrowers and the book collection, which encourage or deter book thefts. There are, in addition, other conditions, which alternately might be called interlibrary factors, over which the library may or may not have control. As it turned out, these conditions have even greater influence over losses than intralibrary factors. Because they are theoretical (not in the dictionary definition of a theory as "an analysis of a set of facts," but defined as "a more or less plausible general principle offered to explain phenomena"), and difficult to verify, they can be proved or disproved only after investigation by many libraries.

Hypotheses (intralibrary factors):

1. A collection of large size, relative to another collection within the same library building, will suffer a lower rate or percentage of loss; the larger the collection, the lower the rate. The actual number of books lost may be greater, but the rate of loss will be lower. The reason for this is that borrowers have a greater range of selection and will be less inclined to appropriate a particular book for their exclusive use. The obvious weakness in this hypothesis is that a large collection in one subject area may not be comparable to a smaller collection in another subject area, particularly if the larger collection has not been kept up-to-date. If, however, the intensity of use of the two collections is comparable, the hypothesis should be valid.

2. In any given collection, a higher ratio of multiple copies to volumes will result in a lower rate of loss. This is because borrowers will have greater opportunity of securing titles in great demand, and therefore will be less inclined to take a copy for their exclusive use. This hypothesis presumes that the library will have multiple copies of titles in demand at the time and not merely many copies of books used at some time in the past. It also presumes an awareness on the part of the borrower that multiple copies are available.

3. The greater the intensity of use made of any collection, the higher the rate of loss will be, because a greater number of borrowers will be competing for a fixed number of volumes.

4. It follows, then, that given a constant rate of use, a collection experiencing a greater rate of growth will suffer a declining rate of loss. The difficulty here is that it is impossible to control the

rate of use and difficult to predict the rate of growth. In addition, the state of the collection is of considerable importance. A relatively undeveloped collection undergoing rapid expansion with basic titles will differ markedly from one which is already fairly well developed and being filled out with peripheral titles. This makes rate of growth a rather nebulous concept; however, in conjunction with the first hypothesis above, a rapid rate of growth should promote a declining rate of loss.

5. The greater the number of books on reserve (*i.e.,* closed reserve), the lower will be the rate of loss. The reason for this, presumably, is decreased access.

Hypotheses one, two, four, and five represent inverse ratios, that is, the higher or greater the first (controlling) factor, the lower will be the second (rate of loss). Hypothesis three, on the other hand, represents a direct ratio. The various hypotheses must be presumed to be interdependent—a large collection being used intensively will experience a greater loss rate than one of equal size undergoing less use, but its loss rate should be lower than that of a smaller collection being used with equal intensity, of a collection of equal size with a lower ratio of multiple copies. And so on.

The weakness in proposing hypotheses to predict book losses is lack of control. This is especially true in the short run. The number of multiple copies can perhaps be controlled over the long run, as can rate of growth to a limited extent. Size, quite naturally, is largely a product of age, unless as a matter of policy size is restricted. Intensity of use is a factor the library should not even attempt to control, except by increasing the rate of growth. But even though control over the hypothetical factors is not always possible, it does not seem unreasonable to expect the factors named to have some influence over losses.

There are other intralibrary factors which will affect the rate of book loss. These factors involve the library and its patrons, but do not, except in one case, involve the book collection directly.

6. Relevancy of collection. Since books are stolen almost exclusively because people want to use them, a library that maintains a collection that is not or cannot be used will experience a low loss rate in that collection. A library with an Oriental collection, for example, but existing in an environment that includes no one who reads Oriental languages, may expect its losses in Orientalia to be practically nil. Why the library would have such a collection is another matter.

7. Lending policy, including the degree of difficulty involved in obtaining a library card and the subsequent difficulty encountered in trying to borrow a book. The less red tape involved in obtaining and using a library card, the less a potential borrower will be tempted to "borrow" a book illegally. This thesis—free access without borrowing privileges—will be explored in greater detail further on.

8. Type of exit control. This factor will also be considered in some detail later. It suffices to say at this time that exit controls, regardless of their type, are successful only to the extent that they keep honest men honest. No exit control can frustrate the designs of a determined thief, unless he is totally inept.

Theories (interlibrary factors):

Interlibrary factors come into play between one library and another, or between the same library in two time periods, and between the library and the community it serves.

9. Open or closed stacks. It would seem beyond question that a library with closed stacks would suffer fewer losses than one with open stacks. And yet it cannot be proved. It is virtually impossible to compare an open stack library with one having closed stacks, even if they are comparable institutions in the

same area. Furthermore, a single library with open stacks at one time and closed at another cannot compare the difference very readily because so many conditions will have changed in the interim.

10. Type of borrowing public. A university library serving primarily graduate students, or a public library serving mainly post-school adults, should experience lower losses, because there will be less concentration on the basic core collection, which exists in every library, and more on peripheral works relating to the particular interests of the individual borrower. There will be less competition for specific titles; therefore less likelihood of their being removed surreptitiously.

11. Urban or rural location. A library located in a rural or small town area should suffer lower losses than a comparable institution in an urban area, because losses in an urban public or university library will vary directly with the quality of other libraries—specifically college and school—in the area. The ratio of potential patrons to total library resources may be the same in both areas, but in a rural area the patrons may have but one (convenient) choice, whereas in an urban area, the library with the finest collection will find itself serving a disproportionately high number of borrowers. If the urban school and college libraries cannot meet the needs of their students, and apparently many cannot, their students will eventually gravitate to the well equipped public or university library; and if it is the policy of those libraries not to lend to high school or college students, some may find the temptation, a product of desperation and immaturity, to remove books irresistible.

THE STUDY

A word about percentages. Several sets of percentages will be offered, pertaining to use, number of multiple copies, books on reserve, rate of growth, and, finally, number of volumes missing. Since the figures for losses are of the greatest importance and will be the only figures projected to include the entire collection—and in the process converted into a monetary equivalent—they are the only ones which will be carried to two (or four, as in a decimal) places, in order to assure the greatest degree of accuracy. This will be done even though it is a known statistical principle that the results of any computation cannot be more accurate than the least accurate figure involved. But in the use here, although loss figures will be compared with other figures, they will not be involved in computations with them; therefore we can be excused for a little variation from the rule. This being the case, in all calculations other than volumes missing, a figure such as 7.48 per cent, for example, will be rounded off to the nearest significant figure, *e.g.,* 7.5 per cent.

Method of anticipating books that will be found. A certain number of books thought to be missing in any one year will be found the following and subsequent years, consequently some method must be devised to account for them, otherwise the loss figures for the last year of the inventory will be disporportionately higher than those of the first. If we know how many of the books missing in 1963 (the first year of the inventory) are found in 1964, 1965, 1966, and 1967, respectively, we should be able to determine how many will be found in 1968, 1969, and so on, as well as how many of those missing in 1964, 1965, and 1966 will be found in ensuing years. We can in this manner reduce our loss figures accordingly.

The experience available indicates that subsequent to the number of missing volumes found the first year following the inventory, roughly two-thirds as many will be found the third year as were

TABLE 1

Year	Volumes	Duplicate Copies	Total Volumes	Per Cent Rate of Growth	Volumes Missing	Per Cent of Volumes Missing	Volumes in Circulation and on Reserve			
							In Circulation	Per Cent	On Reserve	Per Cent
Class BF (Psychology)										
1963	4,668	874	5,542	....	....	....	....	....	....	....
1964	4,918	949	5,867	5.9	102	1.74	307	5.2	565	9.6
1965	5,067	1,052	6,119	4.3	120	1.96	357	5.8	570	9.3
1966	5,498	1,225	6,723	9.9	142	2.11	443	6.6	617	9.2
Average	5,161*	1,075	6,236	6.7	121 (121.33)	1.95	370	5.9	584	9.4

Ratio of duplicate copies to volumes $\frac{1,075}{5,161}$ = 20.8 per cent

Year	Volumes	Duplicate Copies	Total Volumes	Per Cent Rate of Growth	Volumes Missing	Per Cent of Volumes Missing	In Circulation	Per Cent	On Reserve	Per Cent
Class DA (History—Great Britain)										
1963	6,987	318	7,305	....	....	....	....	....	....	....
1964	7,156	337	7,493	2.6	25	.33	104	1.4	196	2.6
1965	7,402	379	7,781	3.8	31	.40	115	1.5	200	2.6
1966	7,695	409	8,104	4.2	33	.41	122	1.5	213	2.6
Average	7,418	375	7,793	3.5	30 (29.67)	.38	114	1.5	203	2.6

Ratio of duplicate copies to volumes $\frac{375}{7,418}$ = 5.1 per cent

Year	Volumes	Duplicate Copies	Total Volumes	Per Cent Rate of Growth	Volumes Missing	Per Cent of Volumes Missing	In Circulation	Per Cent	On Reserve	Per Cent
Class DC (History—France)										
1963	4,816	189	5,005	....	....	....	....	....	....	....
1964	4,925	200	5,125	2.4	21	.41	81	1.6	108	2.1
1965	5,063	223	5,286	3.1	22	.42	88	1.7	110	2.1
1966	5,226	249	5,475	3.6	19	.35	88	1.6	117	2.1
Average	5,071	224	5,295	3.0	21 (20.67)	.39	86	1.6	112	2.1

Ratio of duplicate copies to volumes $\frac{224}{5,071}$ = 4.4 per cent

Year	Volumes	Duplicate Copies	Total Volumes	Per Cent Rate of Growth	Volumes Missing	Per Cent of Volumes Missing	In Circulation	Per Cent	On Reserve	Per Cent
Class E (America [general] and United States [general])										
1963	8,037	908	8,945	....	....	....	....	....	....	....
1964	8,152	946	9,098	1.7	58	.64	220	2.4	469	5.2
1965	8,436	978	9,414	3.5	65	.69	248	2.6	479	5.1
1966	9,135	1,039	10,174	8.1	64	.63	330	3.2	548	5.4
Average	8,574	988	9,562	4.4	62 (62.33)	.65	266	2.8	499	5.2

Ratio of duplicate copies to volumes $\frac{988}{8,574}$ = 11.5 per cent

* Averages derived from 1964-1966 only.

TABLE 1 (cont.)

Year	Volumes	Duplicate Copies	Total Volumes	Per Cent Rate of Growth	Volumes Missing	Per Cent of Volumes Missing	VOLUMES IN CIRCULATION AND ON RESERVE			
							In Circulation	Per Cent	On Reserve	Per Cent

Class HM-HX (Sociology)

Year	Volumes	Duplicate Copies	Total Volumes	Per Cent Rate of Growth	Volumes Missing	Per Cent of Volumes Missing	In Circulation	Per Cent	On Reserve	Per Cent
1963	6,325	1,221	7,546	. . . .	. . . .	. . . .	. . . .	. . . .	. . . .	. . . .
1964	6,485	1,398	7,883	4.5	140	1.78	401	5.1	750	9.5
1965	6,735	1,523	8,258	4.8	156	1.89	474	5.7	796	9.6
1966	6,994	1,709	8,703	5.4	183	2.10	519	6.0	834	9.6
Average	6,738	1,543	8,281	4.9	160 (159.67)	1.93	465	5.6	793	9.6

Ratio of duplicate copies to volumes $\frac{1,543}{6,738}$ = 22.9 per cent

Class J (Political Science)

Year	Volumes	Duplicate Copies	Total Volumes	Per Cent Rate of Growth	Volumes Missing	Per Cent of Volumes Missing	In Circulation	Per Cent	On Reserve	Per Cent
1963	9,167	812	9,979	. . . .	. . . .	. . . .	. . . .	. . . .	. . . .	. . . .
1964	9,389	880	10,269	2.9	84	.82	312	3.0	553	5.4
1965	9,684	907	10,591	3.1	91	.86	352	3.3	551	5.2
1966	10,031	950	10,981	3.7	94	.86	371	3.4	574	5.2
Average	9,701	912	10,613	3.2	90 (89.67)	.84	345	3.3	559	5.3

Ratio of duplicate copies to volumes $\frac{912}{9,701}$ = 9.4 per cent

Class PR (English Literature)

Year	Volumes	Duplicate Copies	Total Volumes	Per Cent Rate of Growth	Volumes Missing	Per Cent of Volumes Missing	In Circulation	Per Cent	On Reserve	Per Cent
1963	17,410	1,986	19,396	. . . .	. . . .	. . . .	. . . .	. . . .	. . . .	. . . .
1964	18,266	2,153	20,419	5.3	219	1.07	1,035	5.1	1,055	5.2
1965	19,286	2,253	21,539	5.5	241	1.12	1,179	5.5	1,047	4.9
1966	20,446	2,360	22,806	5.9	261	1.14	1,276	5.6	1,076	4.7
Average	19.333	2,255	21,588	5.6	240 (240.33)	1.11	1,163	5.4 (5.39)	1,059	4.9

Ratio of duplicate copies to volumes $\frac{2,255}{19,333}$ = 11.7 per cent

Class PS (American Literature)

Year										
1963	7,546	813	8,359	....	....	....	....	....	....	....
1964	8,475	969	9,444	13.0	116	1.23	698	7.4	491	5.2
1965	10,346	1,127	11,473	21.5	140	1.22	768	6.7	490	4.3
1966	11,638	1,220	12,858	12.1	140	1.09	815	6.3	508	4.0
Average	10,153	1,105	11,258	15.5	132	1.17	760	6.8	496	4.4

Ratio of duplicate copies to volumes $\dfrac{1,105}{10,153} = 10.9$ per cent

Class R (Medicine)

Year										
1963	2,449	391	2,840	....	....	....	....	....	....	....
1964	2,570	407	2,977	4.8	64	2.15	143	4.8	185	6.2
1965	2,763	431	3,194	7.3	68	2.13	186	5.8	199	6.2
1966	2,916	479	3,395	6.3	74	2.18	190	5.6	216	6.4
Average	2,750	439	3,189	6.1	69 (68.67)	2.15	173	5.4 (5.42)	200	6.3

Ratio of duplicate copies to volumes $\dfrac{439}{2,750} = 16.0$ per cent

Class U-V (Military and Naval Science)

Year										
1963	831	28	859	....	....	....	....	....	....	....
1964	892	31	923	7.5	14	1.52	40	4.3	10	1.1
1965	974	52	1,026	11.2	24	2.34	53	5.2	23	2.2
1966	1,055	65	1,120	9.2	20	1.79	61	5.4	21	1.9
Average	974	49	1,023	9.3	19 (19.33)	1.89	51	5.0	18	1.8

Ratio of duplicate copies to volumes $\dfrac{49}{974} = 5.0$ per cent

Composite

Year										
1963	68,236	7,540	75,776	....	....	....	....	....	....	....
1964	71,228	8,270	79,498	4.9	843	1.06	3,341	4.2	4,382	5.5
1965	75,756	8,925	84,681	6.5	958	1.13	3,820	4.5	4,465	5.3
1966	80,634	9,705	90,339	6.7	1,030	1.14	4,215	4.7	4,724	5.2
Average	75,873	8,965	84,839	6.0	944 (943.67)	1.11	3,792	4.5	4,524	5.3

Ratio of duplicate copies to volumes $\dfrac{8,965}{75,873} = 11.8$ per cent

found the second, and in the fourth year about two-thirds as many will be found as in the third year. This projection may be carried out until we reach a point where none or only one book will be found. For the purpose of this study the projected loss reduction was calculated to one. Thus the individual and composite figures for losses do not represent the number of volumes presently missing, but a smaller number, that should be missing at a calculated time in the future. Admittedly, this is a somewhat rough method of arriving at a true figure, but it has the advantage of indicating losses at a minimum and is certainly more accurate than simply recording the figures as they now stand.

Method of calculating volumes out and on reserve. The figures given for volumes out and on reserve do not represent total circulation, or the total number of volumes on reserve in any given year. They were derived from an average of the greatest and least number within the year, as obtained from two one-week periods representing the high and low points within the year. The second week in May was selected for the high point, and the first week in September for the low. This method, while not indicating total use, is quite acceptable, as the figures for all classes were derived in the same manner.

The inventory. All classified monographs and serials were included in the inventories, and, while separate figures were recorded for each, only the combined figures for monographs and serials are included herein. The total number of volumes and duplicate copies in each class was obtained from a shelf list count taken immediately preceding each inventory.

In the correlation charts, the validity of the five hypotheses is examined against the losses. The loss figures are arranged from high (class R) to low

(class DA). The factor intensity of use is also arranged from high (class PS) to low (class DA), because this hypothesis stated that a *greater* intensity of use would result in a *greater* rate of loss. With the other hypotheses, however, the classes are ranged low to high, in keeping with our prediction that the *higher* the percentage of multiple copies, the *greater* the rate of growth, the *larger* the collection, and the *greater* the number of books on reserve, the *lower* would be the rates of loss.

In the factor of multiple copies, to give but one example, class DC (4.4 per cent) ranked last, whereas class HM-HX (22.9 per cent) ranked first; consequently, on the basis of this one hypothesis, we should expect to find class DC first in rate of loss and HM-HX last. The fact that class DC was ninth in losses means that it was +8 positions from its predicted position, while HM-HX, being third in losses, was −7 positions from its predicted location. We must therefore say that there seems to be little relationship between losses and the rate of multiple copies (as an isolated hypothesis). Had the ranking of percentage of multiple copies been DA, DC, E, J, PR, PS, U-V, HM-HX, BF and R (low to high ranking), and the rate of loss the same as the study demonstrated, we would have had perfect correlation (0), and would have been able to assert that, in any collection, losses are directly related to the number of multiple copies available—*i.e.*, the greater the latter the lower the former. Sad to say, we cannot make this assertion.

The maximum correlation possible is 0, as we can see from the listing on the left (Table 2), while the minimum is ± 25 (right, Table 2).

The correlation between losses and the five measurable hypotheses is given in Table 3.

Lest the reader be misled by the fig-

TABLE 2

MAXIMUM CORRELATION			MINIMUM CORRELATION		
1st Factor *e.g.*, Losses	2d Factor *e.g.*, Use	Variation	1st Factor *e.g.*, Losses	2d Factor *e.g.*, Use	Variation
BF . . .	BF	0	BF . . .	U-V	+ 9
DA . . .	DA	0	DA . . .	R	+ 7
DC . . .	DC	0	DC . . .	PS	+ 5
E . . .	E	0	E . . .	PR	+ 3
HM-HX . .	HM-HX	0	HM-HX . .	J	+ 1
J . . .	J	0	J . . .	HM-HX	− 1
PR . . .	PR	0	PR . . .	E	− 3
PS . . .	PS	0	PS . . .	DC	− 5
R . . .	R	0	R . . .	DA	− 7
U-V . . .	U-V	0	U-V . . .	BF	− 9
Total variation		0			±25

ures for book and dollar losses, it must be pointed out that not all lost books are actually replaced; hence the expression "monetary equivalent." Obviously, since the figure 17,342 is derived from a sample,[4] only those books known to be lost are considered for replacement, and, in general, only titles of which the library has but one copy are replaced, unless demand indicates the need to replace duplicate copies.

Evaluation of hypotheses. We have seen that the maximum correlation possible between rate of loss and any hypothesis is 0, and the minimum ±25. A correlation of ±25 would indicate no relationship between a so-called controlling factor and losses, while one of 0 would indicate perfect or absolute correlation. As it turned out, of all the hypotheses, only one proved to be closely related to losses. That intensity of use is directly related to losses is unquestionable, and hardly surprising. It is surprising, though, that the other hypotheses had so little apparent influence. At the beginning of the study, it seemed a foregone conclusion that a high percentage of multiple copies would result in a lower rate of loss, but apparently it does not. HM-HX, BF, and R have a

high ratio of duplicates, and therefore should have experienced a low loss rate, but they actually were the highest in losses! A low rate of growth, such as experienced by classes DC, J, and DA, should have resulted in a high rate of loss. It did not. The same observation may be made of volumes on reserve, with the possible exception of classes U-V.[5] The only other controlling factor which seemed to have any influence at all was size of collection, and even here the correlation was far from outstanding. In conclusion, then, we must say that of the five hypotheses, only intensity of use had any real direct effect, and that the others either had little or no effect, or, and this is more likely, were simply overshadowed by the factor of use. So much for hypotheses.

Theories. We must now examine the policies and characteristics of the library itself with regard to several of the theories put forth at the beginning of the study.

The reader will recall that we theorized: (a) that a liberal lending policy will deter thievery, whereas a policy that excludes potential borrowers will

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[4] The sample consisted of approximately ⅙ (16 per cent) of the collection in the main library.

[5] Although the hypotheses must be assumed to be interdependent, and therefore to some degree self-canceling, it does seem odd that four hypotheses should be so completely dominated by one.

encourage it;[6] (b) that an open stack library will suffer heavier losses than one with closed stacks; (c) that a library serving a specialized public will lose fewer books than one serving a primarily undergraduate college, or school students; and (d) that a library located in an urban area will experience greater losses than a comparable institution in a rural location.

Few would deny that any attempt to fathom the motivation of thievery by means of theoretical devices is risky. But we have seen that even the most valid intralibrary factor, while serving well to show why losses are great, does not explain the behavior of the thief. The fact that heavy use and high losses are closely related does not explain *why* books are stolen. Nor could it. There must be another factor, or factors, which provide the impetus. We must, therefore, by necessity, seek some plausible theory relating to use and losses. It is of the greatest importance that we do so, for *unless we can establish a theory, we cannot hope to achieve a lasting solution.*

The library we have examined has the simplest of registration procedures. All full-time students, staff, and faculty are

[6] By this I mean not only absolute exclusion of "nonresident" potential borrowers, but also the various obstacles which may impede the use of the library by a legitimate borrower and cause him to "borrow," so to speak, before he is a borrower.

issued ID cards, which also serve as library cards. Part-time students, and others, of whom there are many, need only fill out an application, whereupon they are issued a library card immediately. We can say, then, that there are few impediments placed in the way of the qualified borrower obtaining and using a library card. In addition, the library has a very generous lending policy, offering unlimited renewals, unless wanted by other borrowers, by mail, telephone, or in person. Books are loaned for two and four weeks to undergraduate and graduate students respectively, and on an indefinite basis to faculty, and any book in circulation will be reserved and held for any borrower. No charges (other than tuition) are made for library cards or services. There is no limit to the number of books that may be borrowed; and a complete listing of all books in circulation is available for use by the public. Finally, faculty and graduate students of other institutions in the area are permitted to borrow.

There are restrictions, however; and within them we may find the answer we are seeking. Undergraduate students of the other twenty-odd colleges in the area, as well as high school students, are not permitted to borrow; but all college students are permitted to use materials in the library, and it is well known that

TABLE 3

Books Lost Per Cent Ranked High to Low			Intensity of Use Ranked High to Low			Ranked Low to High Per Cent Multiple Copies		
Class	Rank	Lost	Class	Rank	Variation	Class	Rank	Variation
R	1	2.15	PS	1	+4	DC	10	+ 8
BF	2	1.95	BF	2	0	U-V	9	+ 2
HM-HX	3	1.93	HM-HX	3	0	DA	8	+ 7
U-V	4	1.89	R	4	−3	J	7	+ 3
PS	5	1.17	PR	5	+1	PS	6	0
PR	6	1.11	U-V	6	−2	E	5	+ 2
J	7	.84	J	7	0	PR	4	− 1
E	8	.65	E	8	0	R	3	− 7
DC	9	.39	DC	9	0	BF	2	− 7
DA	10	.38	DA	10	0	HM-HX	1	− 7
Total variation					±5			±22

TABLE 4

Rate of Growth Ranked Low to High			Size of Collection Ranked Low to High			Volumes on Reserve Ranked Low to High		
Class	Rank	Variation	Class	Rank	Variation	Class	Rank	Variation
DC	10	+ 8	U-V	10	+ 3	U-V	10	+ 3
J	9	+ 5	R	9	− 1	DC	9	+ 7
DA	8	+ 7	DC	8	+ 6	DA	8	+ 7
E	7	+ 4	BF	7	− 2	PS	7	+ 1
HM-HX	6	− 2	DA	6	+ 5	PR	6	+ 1
PR	5	0	HM-HX	5	− 3	E	5	+ 2
R	4	− 6	E	4	+ 1	J	4	0
BF	3	− 6	I	3	− 1	R	3	− 7
U-V	2	− 5	PS	2	− 4	BF	2	− 7
PS	1	− 5	PR	1	− 4	HM-HX	1	− 7
Variation		±24			±15			±21

high school students use the library despite efforts to prevent it. Thus we have access without the privilege of borrowing.

But access alone does not explain losses.

If the number of books in circulation at any time is indicative of intensity of use, then it should also be indicative of potential use by non-borrowers. Conditions will not be the same, but they will be similar to the extent that broad subject areas used intensively by one group may well be used by another group, given the opportunity, which though not exactly the same in nature, is at least comparable.

Literature and the social sciences, which are the classes most heavily used and greatly depleted, are more likely subjects of general interest than are English and French history, or military and naval science. Admittedly, there are weaknesses in this argument, but it cannot be denied that of the ten subjects considered, the five in the top half of use were with but one exception the same group which suffered the heaviest losses. And it is these subjects that are of "universal" interest and subject to the greatest demand by library-using segments of the population within the *potential* environment of the library. This would indicate very strongly that rigid interlibrary relationships, taken in conjunction with known facts, provide a solid foundation upon which to build a theory of book losses.

The library and its environment. The library has open stacks, except for special collections and about five thousand books on closed reserve. It is located in a metropolitan area of approximately two million persons, and, along with the public library, ranks as the finest general library in the area. Not a great amount of pertinent information is available concerning the numerous school and college libraries in the area, but what there is indicates very strongly that many are inadequate (and some grossly inadequate) in comparison to the major libraries in the area. In fact, two of the largest colleges in the area (with a combined enrollment of more than 10,000 students) are relatively new, and have what might at best be described as embryonic library facilities.

The milieu in which the library operates would seem to fit our theory very well: a large urban complex, open stacks, free access, and a very large group of potential borrowers. It is impossible to overlook the basic fact that the library is convenient to two groups: a small group that is permitted to borrow, and a much larger group that is not.

It would be less than wise to be entirely unyielding in attributing losses to those who are not permitted to bor-

TABLE 5

Year	Total Volumes in Collection*	Loss Derived from Inventory Includes Entire Main Library Collection				Loss as a Percentage of Total Book Budget	
		Per Cent of Volumes Missing	Total Volumes Missing	Cost per Volume†	Losses in Monetary Equivalent	Total Allocated for Books and Continuations	Per Cent
1964 . .	495,250	1.06	5,249	$9.00	$ 47,241	$322,041	14.7
1965 . .	516,950	1.13	5,841	9.00	52,569	361,547	14.5
1966 . .	548,418	1.14	6,252	9.00	56,268	478,700	11.8
Total			17,342		$156,078		

* Median figure for twelve month period, main library only.
† Estimated average price, books, and continuations. This figure, while probably low, is adequate for the purpose intended.

row. A theory must be proved before it can be stated as an axiom, and a theory such as ours is most difficult to prove. But we do have a beginning. It would seem that there must be some connection between losses and inability to borrow. Taking into account the inadequate library facilities of many institutions in the vicinity, both secondary and higher, and considering the fact that the faculties of those institutions cannot and will not scale down their own standards because of inadequate library resources in their own institutions, and, finally, recognizing the tremendous pressure put upon students to achieve high scholastic ranking, it is not surprising that a library which permits and even encourages free access, and possesses one of the finest book collections in the area, would suffer heavy losses. We can, therefore, offer as a tentative theory that *the pressure of scholastic achievement in association with freedom of access to those persons who are not permitted to borrow will result in a high rate of loss.*

Methods of preventing thefts. Given that libraries lose books in sufficient numbers to warrant remedial action, we must consider the current methods employed to prevent thefts, their shortcomings, and the possible alternatives.

It would be best to begin by admitting that there is no known method of preventing a determined thief from making off with a book. This is so because the effectiveness of all systems, regardless of their type, is contingent on the cooperation of all borrowers, and since there are borrowers who obviously do not cooperate, all systems must fail to the exact extent to which that cooperation is withheld. It is ironic that exit control systems, all of which are expensive (some more so than others), are effective only to the extent that they remind cooperative borrowers to check out books, whereas they can be rendered ineffective by a determined thief.[7]

The two major methods employed today are guards and turnstiles, and a method employing magnetic influences —electronic detection.

Guards and turnstiles. Somewhere in this land there may be a library that has but one exit. Most have two or more, although only one may be legal; and since we are dealing with the minority who steal books, either we guard all possible exits or the battle is lost, for honest men always walk out the front door, but thieves do so only when they are confident or desperate. Obviously, even in a modern building, not all exits can be guarded. Windows that open, unguarded doors, fire escapes, crash doors, delivery entrances and exits, and the like all provide ready roads of egress for the clever thief. There is no way

[7] For comments on this see William L. Emerson, "To Guard or Not to Guard," in *Library Journal,* LXXXIV (January 15, 1959), 145-46.

of guarding all of them. As for the rare (and probably nonexistent) library that actually has but one exit, the book thief is confronted by a more formidable but by no means insoluble problem. The methods he may employ are numerous— by concealing books under coats and belts, in innocuous looking packages and typewriter cases, in laundry bags and handbags, in dust jackets and news-papers, or brazenly walking past dis-tracted guards and preoccupied attend-ants, and on and on ad infinitum. It is pointless to dwell on the many methods; it is enough to remark that they are all too effective.

Electronic devices. The writer recalls having visited the display booth of one of the electronic detecting companies at a recent ALA conference. Included in the propaganda handed about was a short story, one that reminded him no little bit of the famous dime novels so prevalent in the post-Jesse James era. In this thriller, one John was to be seen skulking about the stacks of a library carrying what could be described either as a large briefcase or a small suitcase. John was looking for valuable books; and, disdaining the dealers' catalogs, he was looking for them in the dark and dingy stacks of a dark and dingy library. He wanted only valuable books because he intended to peddle them—to whom was not disclosed. Be that as it may, John crept from range to range, and with many a surreptitious look up and down the aisleways, selected his books. Finally, case bulging with loot, John headed for the front door. All was quiet in those halcyon halls. But lo! Barely had John stepped through the front door, when the long arm of the law claimed its hapless victim. John had been caught by the electronic detector, with the as-sistance of an alert librarian who, upon hearing the warning bong, had signaled the library guard who just happened to be at the front door waiting in breathless

anticipation. And so there was a happy ending. The library's books were spared an ignominious fate, the theory of elec-tronic detection by means of the sinus-oidal propagation of the magnetic influ-ences was vindicated, and John was carted off to jail, there on "the torture of the mind to lie in restless ecstasy." One more book crook consigned to limbo.

It was a good story. It warmed the heart and emphasized three salient fea-tures of electronic detection. First, the system presumes not only that valuable books alone are stolen, but that thieves are interested in books only as artifacts. Second, even though the system pur-portedly does away with exit attendants, inherent in its operation is the continu-ous presence of someone in authority at the front door to apprehend the would-be thief. And third, the system is predicated upon the belief that electron-ic devices are infallible. Therein lie the fallacies of electronic detection.

We have contended that books are stolen because people want to use them; that is, they want the intellectual con-tent of the book, not necessarily the whole book itself. If this is true, and there is no reason to believe otherwise, a system which in effect protects the cover or spine of a book, but not the contents, can be circumvented simply by removing the contents and leaving the protected part behind. In truth, such a system might even be said to make book stealing easier and safer! One can readily envision a library floor littered with book covers. It is true that some books are stolen for their intrinsic value and thus can be protected by the elec-tronic device; but they represent only a small percentage of the vast number of books pilfered from libraries every year.

The reader may wonder at this scorn-ful and invidious attitude toward elec-tronic detection. It stems in part from the brash manner in which the promot-

ers of the devices seem to rejoice in their conviction that conventional turnstiles are antediluvian and must be replaced at the first opportunity by the miracle of magnetism. And all this with little or no foresight or thought about the reasons people may have for stealing books. Here, once again, is a case of nonlibrarians telling librarians what is best for them. It stems also from the happy abandon with which they recommend converting to a new method, while letting the library itself worry about how much it will cost. How much, indeed, would it cost to "protect" a collection of five hundred thousand volumes? At that same conference I was told—in a whisper, as though the speaker feared that some guardian of the living wage might be hovering about—that it could be done for about one cent a volume, not including the cost of the discs and equipment.[8] An experiment along these lines indicated that at one cent per volume the person performing such labor would be receiving approximately $ .09 an hour! Furthermore, the discs are usually attached to the board paper and then covered by the fly leaf, which is then glued to the board paper.[9] Unfortunately, the misuse of the endpaper would defeat the purpose of the hinge, which is designed to prevent the covers from being torn away from the book.

It is unfortunate that electronic detection is not the answer to the theft problem. It is a reasonably good idea in theory; however, its cost makes it impractical, while its inherent weaknesses make it unworkable.

CONCLUSION

Is there no way in which losses may be reduced? Before we can answer this question we must ask another: what level of losses are we willing to tolerate? Is one per cent of the collection per year too high a price to pay for open stacks and so-called free access? Many would say it is. What, then, is an ac-

ceptable level? If zero per cent is the goal then the library may as well close. The individual library must recognize that it is going to lose some books, the number being directly related to the environmental and other conditions under which it operates; the essential idea is to reduce losses to the lowest possible level within those conditions.

There are several possible approaches, only a few of which can be considered in brief at this time. First, the library might simply accept losses as they are and request of its governing board an increase in book funds to compensate for them. This, however, is no solution and, in addition, it might be much easier to reduce losses than to convince a board of the merit of such a program.

As a second approach, it is entirely possible that losses could be reduced to an acceptable level by reducing access. This need not necessarily involve closing the stacks to all; the library could simply turn its exit control about and screen all who come in rather than those who go out. Bar the door to all who do not have library cards! But such a solution might well turn into a hydra of enormous proportions. Not only would a "no-access to outsiders" policy bring forth strong protests, and doubtless reciprocal treatment, but it would be inimical to the spirit of librarianship. A college or university library, to be sure, owes its first obligation to its own faculty and students; but all libraries, university as well as public, are obligated to a greater or lesser extent to serve the community. It is a sticky problem.

[8] To get around this embarrassing predicament, the promoters sometimes recommend that only certain books be protected. If by this they mean an entire reference collection, or any other complete group of books, that is one thing; but if they mean every fifth or tenth volume in the general stack collection, they are merely encouraging the disappearance of the other four or nine books.

[9] Books sent for binding or rebinding can have the discs attached directly to the board. This would be much better for the book, at least until someone tore off the cover.

Third, since we cannot hope to prevent people from stealing books if such is their intent, we must attempt to convince them that it is not in their own best interest to do so. This is not so naive as it may at first seem. Another writer once said, perhaps with tongue in cheek, that "education is usually prescribed for every ailment of democracy, and to some extent it can be used to develop a more healthful attitude toward publicly owned book collections."[10] This was written in 1935 and, unless we can prove it invalid, it is still worth serious consideration. However mushy it may sound, education must be one of our basic approaches. Those of us who are committed to the educational process, and presumably all of us are, and who believe in its great virtues, should at least attempt to reach out to those who stand so painfully in need of education.

We need not preach that stealing books is morally wrong—the function of librarianship is not to preach morality, and, in any event, the attempt would fail, for morality is not something that adults or near adults learn easily. We need not preach at all. The would-be book thief must be convinced by irrefutable logic that stealing books inevitably becomes a reciprocal curse; that the theft of a book injures all; that stealing books represents the ultimate in folly.

We must persist in our attempt to educate the book thief. It is not enough to put up an occasional poster, or print a few notices in newspapers; it must be a personal approach, and it must be

hammered at over and over again. For we must assume that library users are rational beings, and rational beings do not set out deliberately to hurt themselves, which is what they do when they steal books. If they are rational they will see the truth; if they are not, then there is little point in worrying about the problem at all.

Finally, it is possible that the ultimate solution lies in a combination of education and cooperation. Instead of reducing access, we might expand it. A comprehensive interlibrary metropolitan cooperative lending plan could prove to be less costly in the long run than thefts. No doubt such a program would place heavy burdens on the well-endowed libraries and might cost them more than they are willing to pay. But that is something that cannot be answered at this time.

Ultimately the most unfortunate consequence of book thefts is not the monetary loss, but the irreplaceable loss in human effort. To the casual reader a lost book may be an inconvenience; but to the serious reader it can be a minor tragedy. And it is little comfort to the scholar to be told that a missing title will be reordered and may be available some time in the future.

It is to be hoped that there will be further exploration of the problem, with the idea of attempting to discover the relationship, if any there is, between determining factors and the types of books stolen, as well as of devising an effective program of education and cooperation to counteract losses. Book stealing is an intriguing problem; its cost warrants more than passing attention. ■ ■

[10] Ralph Munn, "The Problems of Theft and Mutilation," in *Library Journal*, LX (August 1935), p. 590.