# 10. The halo effect: psychological deterrence of electronic security systems

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*EDITOR'S NOTE: As an undergraduate in the early 60s, I can remember shelves being installed at the entrance to the university's main library on which users were required to leave their bags. This was an attempt to control facilitators at a time when book theft was emerging as a significant problem for universities. Another method frequently employed at the time consisted of searches on exiting and, since then, a variety of other methods have been found useful including speeding-up check-out (Boss, 1980) and redesign of the exit to facilitate inspection of books and bags (Greenwood and McKean, 1985). By the end of the 60s, however, most large libraries were installing electronic theft detection systems. These rely upon exit screens that sound an alarm if a book is removed from the library without its concealed tag having been desensitized at check-out. By 1979, it was estimated that 6,500 libraries worldwide had installed such systems (Shaughnessy, 1984). Librarians are apparently convinced of their usefulness even though comparatively few*

*evaluations have been published (cf. Bahr, 1981; Knight, 1980). While some of these (e.g. Bommer and Ford, 1984) have employed sophisticated methods of estimating theft that might be transferable to other situations, the present case study, originally published in* Information Technology and Libraries *(Scherdin, 1986), was selected for inclusion because it provided evidence of "diffusion of benefits", or what the author calls the "halo" effect of installing an electronic detection system in one university library. Not only did theft of books decline by more than 80 percent, but so also did thefts of video cassettes and other materials that could not be electronically tagged. Moreover, this diffusion of benefits was anticipated at the outset on the grounds that users would assume that all materials had been tagged. In conclusion, it is evident that attempts to control library theft have proceeded with little or no knowledge of the crime prevention literature. They have been nonetheless successful, however, because the procedures followed are the logical ones employed in any situational project.*

LIBRARIES LACK sufficient information on the problems of theft. Not only is greater awareness of the amount of loss needed but also effective policies and procedures for dealing with collection security (Hanff, 1984).

Libraries large and small are turning toward more sophisticated security programs. In 1984 the total number of electronic security systems in the U.S. was more than thirty-five hundred. However, in a special issue *of Library Trends* on protecting the library, Richard Boss asks, "Are the collections protected by such systems truly secure from theft, or do the librarians have a false sense of security?" (Boss, 1984).

Even a cautious estimate of library collection loss nationwide indicates that replacement would cost more than 10 percent of a library's annual budget. The cost may be even higher when the loss involves not only books but audiovisual materials. Videocassettes, microcomputer diskettes, and audiocassettes are popular targets for thieves. For example, in 1979 Tucson Public Library (Arizona) reported a loss of 54 percent of the nonprint materials at the Woods branch and 52 percent (3,590 items) at the Wilmot branch (Library Journal, 1979)

Replacement and reprocessing of materials represent a drain of budget and staff time, and items are increasingly found to be out of print. In addition, inconvenience to users and potential loss of good will when materials cannot be found are even more difficult to measure.

It has been estimated that if a library annually loses 1 percent of a collection containing forty thousand books, an electronic security system can pay for itself

in one year. This cost-benefit figure includes putting detector strips in 20 percent of the collection (Bahr, 1984). However, sensitizing large collections is a fairly expensive procedure. Is it wise to save money by placing detection strips only in selected materials? A study of Sheridan and Martin at Levittown, New York, concluded that the greater the sensitized portion of the collection, the lower the loss rate (Sheridan and Martin, 1972:16). In contrast it has been stated that "the presence of the detection equipment alone would be sufficient to decrease the theft rate significantly" (Bommer and Ford, 1974). In an article on bookstore security, John Boscoe of Checkpoint Systems emphasizes that those who are determined to pilfer will always find a way around every system. However, Boscoe adds that the major advantage of electronic security systems is that the technology intimidates most people, including legions of casual shoplifters. "There's no question that 80% of the effectiveness of these systems is in deterring those who might otherwise be tempted. They'll see the setup and figure, 'Why bother?'" (Tuller, 1984).

A study done at the University of Wisconsin-Whitewater attempted to determine if there was a significant difference in the rate of loss before and after installation of an electronic security system. An even more burning question for the author was the psychological deterrent effect of the security system.

Located approximately halfway between Madison and Milwaukee, UW-Whitewater is part of the University of Wisconsin system. Its campus includes more than eleven thousand students and six hundred faculty and academic staff. This study was conducted in the Learning Materials Center (LMC), which has dual functions: a curriculum center for the College of Education and a media center for the entire university.

Because approximately one-third of the LMC collection is made up of audiovisual materials, a decision had to be made regarding the securing of these materials when an electronic security system was purchased. Since the contents of audiocassettes, videocassettes, and microcomputer diskettes are lost if they come into contact with the activator/deactivator unit of a security system, these materials must be treated differently from books. If detector strips were placed in them, they could not be deactiviated and would have to be "bypassed" or passed around the sensing screens by hand each time someone left the LMC. If the materials were carried into the main library, located in the same building, the "bypassing" would have to be repeated. College students are more apt to go in and out of the building with their materials than public library patrons who check out materials and do not come back until they have finished using them. Furthermore if some audiovisual materials were stripped and other weren't, student assistant would have to remember to only deactivate materials that wouldn't be damaged by the deactivator.

Since the staff believed that a great part of the success of security systems is due to psychological deterrence, it was decided to protect book materials with detector strips, but not to put strips in the audiovisual materials. It was hypothesized that theft of all materials would be reduced, anticipating that students would not realize that audiovisual materials were not "stripped" and would not notice that they were not deactiviated at checkout

Data for this study are taken from yearly inventories of the LMC collection, whose size grew at a very healthy rate from 1980 to 1985. As of February 1985, there were 14,289print titles and 9,140 audiovisual titles. The print materials that were inventoried included the children's literature collection, the professional methods books for prospective teachers, and the reference collection. Inventoried audiovisual materials were audiocassettes, videocassettes, filmstrips, charts, study prints, film loops, games, kits models, maps, globes, records, slides, and transparencies. Microcomputer diskettes were not included as they are shelved with reserve materials rather than on open shelves with all other materials.

The security system was installed in the summer of 1982, and loss figures from two years before and two years after the installation will be used (see Table 1). It should be noted that library hours and checkout periods remained virtually the same during these years. Inventories were taken in the summer of each year, and searches for missing items were made several times during the following year. Circulation data for these years will also be shown, since it is believed that book loss and book use are directly correlated (MichalkoandHeidtmann, 1978).

It was shown that although circulation data between 1981 and 1984 showed an increase of 8 percent for audiovisual materials and 24.9 percent for print materials, loss rates went down 80.6percentfor audiovisual and 83.2 percentfor print materials.

In 1981 the first thorough inventory in several years was taken, which accounts for the particularly high rate of loss for that year. In terms of total numbers, the children's books showed the highest rate of loss before the security system was installed: 232 books were unavailable in the 1981 inventory, 108 in 1982; but with the security system only 18 were missing in both 1983 and 1984.

Professional methods books had the greatest loss rate in proportion to collection size. This collection of "idea books" that are used to plan activities for the classroom was begun in 1979 and contained 201 titles in August 1980. The 1981 inventory revealed 36 losses, or 18 percent of the collection; 1982 losses were 46, but dropped to only 12 in 1983. In February 1985, the collection had grown to 1,630 titles; the 1984inventory showed losses of 27, or .06percent. This was the highest number of losses in any of the print or audiovisual categories

TABLE 1
EFFECT OF SECURITY SYSTEM ON LOSSES AND COMPARISON OF THEFT AND CIRCULATION

| | Before | | After | |
|---|---|---|---|---|
| | 1980-81 | 1981-82 | 1982-83 | 1983-84 |
| Print | 268 | 154 | 31 | 45 |
| Audiovisual | 124 | 94 | 33 | 24 |
| Total | 392 | 248 | 64 | 69 |

*Comparison of theft and circulation*

| | Print | | | Audiovisual | | |
|---|---|---|---|---|---|---|
| Year | Theft | Circ. | % | Theft | Circ. | % |
| 1980-81 | 268 | 10,043 | 2.67 | 124 | 4,884 | 2.54 |
| 1981-82 | 154 | 10,766 | 1.43 | 94 | 6,173 | 1.52 |

during 1984. The professional methods books have a very high circulation rate: in 1983-84 while only 7 percent of the collection comprised these books, they accounted for 14 percent of the circulation. Neither the collection size nor the circulation rate accounts for the high loss rate — 39 percent of the total losses in 1984. One student pointed out that not only are these books valuable and full of practical ideas but also contain materials that cannot easily be found elsewhere. These, then, might be an example of materials that people are "determined to pilfer."

Each year the largest losses in the audiovisual collection were in audiocassettes. These are high-risk items that can easily be put in someone's pocket; furthermore, the LMCcollects some popular music on cassettes. The losses were 44 in 1981 and 55 in 1982, dropping to 6 in 1983 and 7 in 1984. The deterrent effect of the security system was demonstrated when it was discovered that 5 musical-theater recordings were missing, but their empty cases were still on the shelf. The assumption was probably that there was a detector strip in the case.

Previously, there were no videocassette losses. However, since half-inch VHS tapes have been added to the collection, a few videocassettes have begun to disappear. (This, of course, is the format used in most homes.)

The final inventory in 1984 showed a total of 69 losses from a collection of 23,429 — less than one third of 1 percent (.29 percent). A dramatic decline in the loss of both print and audiovisual materials resulted after installation of the security system, especially when growth and circulation figures are considered.

No systemis 100 percent effective, but the staff at the UW-WhitewaterLMC believes that the theft rate has been brought down to more manageable levels in both the print and audiovisual areas. This can be attributed to the psychological deterrence of the security system.