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On the Use of Positive Reinforcement to Minimize the Problem of Overdue Library Materials

W. Bede Mitchell

Few issues in librarianship have been as long-lived and frustrating to address as the problem of overdue library materials. Even the most cursory review of the professional literature finds dozens of articles about the problem of overdues.⁽¹⁾ Most of the literature appears to have been written under the assumption that only negative reinforcement techniques (e.g., fines, blocking further borrowing, legal action, etc.) can be effective in minimizing the problem of overdue library materials. However, many librarians have expressed dissatisfaction with the use of fines and other sanctions. Unfortunately, the alternative methods for minimizing overdues have produced mixed results. For example, many of the no-fines policy experiments did not appear to be any more effective than fines in controlling the problem of overdues to the satisfaction of librarians. In addition, a common objection to a no-fines policy is that such a policy is effective, if at all, only in ensuring the eventual return of materials and not in encouraging compliance with loan periods which are intended to maximize the sharing of library materials. An excellent summary of librarians' experiences with the overdues problem came from Alford and other members of the American Library Association Ad Hoc Committee on Fines and Penalties:

The findings of the three sections (public, academic, and school) of the Ad Hoc Committee point to the fact that many librarians are not in favor of fines and/or penalties, but none came up with a more workable solution to the problem of how to insure the prompt return of library materials. Of the few suggested alternatives to fines, none that have been tried appeared to produce the desired effect, while some still remain in the realm of theory.

Fines and penalties were found to be only slightly detrimental to circulation in academic libraries, with the undesirable effects being social and psychological rather than financial. Public librarians found that high or unlimited fines can lead to a decreased circulation and increased theft and mutilation. In school libraries it was found that on the elementary level, fines are definitely detrimental to library usage. On the secondary school level the evidence is inconclusive, although it is felt that fines can be detrimental to lower socioeconomic groups The issue of fines and/or penalties still remains a matter of local consideration requiring a local solution. It was found that generalizations covering all types of libraries were impossible to produce. Each specific situation appears to need an individual solution.

(2)

The report of the Ad Hoc Committee evinced an understanding that more is at stake when determining overdue policies than retrieval of unreturned materials. Public librarians must be concerned with ethical questions relating to fining patrons who are unable to pay, and practical questions about the dangers of alienating many of the citizens responsible for library funding. School librarians are not only concerned with the problems inherent in fining children but must also consider the effects of fines upon their efforts to nurture good study skills and library-use habits. Academic librarians should also be concerned with the psychological effects of fines and the likelihood that students unhappy with fines policies will be less inclined to cooperate with other library policies. Librarians have learned what psychologists have long recognized: negative reinforcement may be necessary and effective but may also bring many undesirable side effects. This paper suggests that positive reinforcement might be a tool for effectively enforcing loan policies without engendering the resentment frequently created by fines and other sanctions. In order to create the proper framework in which the proposed positive reinforcement method can be evaluated, it is first necessary to review some basic principles of operant conditioning theory.

FUNDAMENTAL PRINCIPLES OF OPERANT CONDITIONING

Operant conditioning theory is designed to identify the ways in which events affect behavior. (3) If the effects of the events are predictable, it may be possible to manipulate the events to encourage desired behavior or discourage undesired behavior. Put another way, behavior can be influenced when certain consequences are contingent upon specific performance.

A key principle of operant conditioning is called the reinforcement principle. When the frequency of a specific behavior increases because it is immediately followed by certain contingent events, the events are said to reinforce the behavior. Events may reinforce positively or negatively. Positive reinforcers are rewards which are provided after a type of behavior is performed, while negative reinforcers are aversive, undesirable events intended to discourage misbehavior. Punishment is a kind of negative reinforcement which attempts to decrease the probability of a type of behavior recurring by removing a positive event following the behavior or by introducing an aversive event following the behavior. Obviously, overdue fines are aversive events introduced following the undesired behavior of failing to return library materials on time. The extent to which positive and negative reinforcement can effectively influence behavior depends upon the following factors: the delay between behavior and the delivery of reinforcement, the kind and desirability of the reinforcer, and the ratio of delivery of reinforcement to acts of the targeted behavior. As an illustration of these factors and their influence on behavior, consider a very simple fines policy which charges 25 cents per day per overdue item, with no grace period.

If a fine is assessed immediately upon return of the overdue items, or if a bill for the fine is sent within just a few days of the return of the items, the delay of the negative reinforcement is relatively short. Immediate or nearly immediate reinforcement is much more effective in influencing behavior than is reinforcement that is delayed. The type or quality of the reinforcer - the

probably are few school librarians who believe very stiff daily fines for overdues are suitable punishments for children.

In our model fines policy, the ratio of reinforcement to acts of behavior, usually called the schedule of reinforcement, is one-to-one. That is, for each item that comes overdue, a fine will be assessed. Such a continuous reinforcement schedule is distinguished from an intermittent schedule in which reinforcement is provided only after some instances of the behavior. During the development of desired behavior in subjects, continuous reinforcement might be preferred to intermittent reinforcement schedules because behavior that is developed as a result of continuous reinforcement is usually performed more consistently than is behavior which is developed from intermittent reinforcement. However, once reinforcement is completely stopped, subjects are more likely to relapse into former undesirable behaviors if the alternative desirable behavior was developed under continuous reinforcement rather than intermittent reinforcement. It may be that some of the increases in overdues reported by libraries after they eliminated overdue fines can be attributed to this tendency toward recidivism after continuous reinforcement ceases.

In summary, our model fines policy is intended to provide prompt and continuous negative reinforcement in the form of monetary fines. The fines are presumably intended to be large and appropriate enough to effectively deter most patrons from repeatedly keeping library materials past the due dates, while at the same time not being so exorbitant as to have the opposite of the intended effect and perhaps result in a substantial public relations problem. The difficulty inherent in setting and enforcing such a policy is obvious and familiar to circulation managers: How does one determine the appropriate size of fines for the intended patrons? It is confusing to patrons, and therefore not productive, to experiment with different fines rates in an effort to find the optimal rate for discouraging overdues. Further, many, if not most, libraries serve fairly heterogeneous populations. Consider the ways in which the population being served by your library may be divided according to characteristics such as age, levels of education and income, and degree of dependence upon the library for information needs. Even if a library could identify an "average patron" profile around which to design an effective fines policy, the many patrons who do not fit such a profile may find the fines policy either excessively harsh or not punitive enough to warrant compliance. Some libraries attempt to set different fines schedules for different patron categories, but lack of sufficient information about individuals as well as the larger population being served can make this solution difficult to enforce and infeasible for many institutions.

Now that we have reviewed the most basic principles of operant conditioning and the reservations which many librarians have expressed about the use of negative reinforcement to discourage overdue loans, let us consider how the use of positive reinforcement techniques might effectively encourage patrons to return borrowed materials on time without creating ill will toward library policies.

USING POSITIVE REINFORCEMENT TO MINIMIZE OVERDUES

In order to examine how positive reinforcement might be used by a library circulation department to combat the overdues problem, consider the following example.

Patron X borrows a library book and subsequently returns the book before or on the book's due date. A sign on the return bin reminds patrons to ask for a receipt for returning or renewing books on time, unless the patron already has such a receipt. For reasons which will become clear, only one receipt at a time is needed for this proposed system. Patron X, not having a previous receipt, asks the circulation assistant on duty for a receipt. After confirming that patron X's book is not overdue and that there is no record of patron X returning or renewing any other items late, the circulation assistant issues patron X a receipt. The receipt indicates it may be redeemed by the patron for a reward (the possible nature of which will be discussed in more detail below) after the expiration date printed or

date in question, the assistant may redeem the receipt for a reward and make a record of the fact that patron X has redeemed a receipt for the expiration date in question. Meanwhile, the library has already begun issuing receipts with new expiration dates. The receipts with the new expiration date will have been issued beginning the day when the library's standard loan period would make books due after the former expiration date. Patrons who do not already have a receipt for the current time period may claim one when they next return or renew an item on time, and the system proceeds all over again.

What is the system in the example designed to accomplish? The system provides a positive incentive for timely return or renewal of library loans. (For simplicity's sake, the possibility that "return" can also mean "renew" will be implied hereafter, rather than explicitly stated.) Patrons are promised that adherence to circulation due dates will earn rewards for the patrons. The issuance of the receipt, the sign at the return bin, and friendly reminders from circulation assistants are all contacts which keep patrons informed about the library's way of trying to deal with overdues in a positive, nonpunitive manner. These contacts also act as immediate positive reinforcement by encouraging and thanking patrons for their cooperation every time an item is returned.

The delay in delivering the actual rewards for which the receipts are redeemed is necessary in order to discourage patrons from taking advantage of the system. If the library were to actually use a continuous reward system, rewarding every instance an item was returned on time, patrons would be encouraged to borrow many items, whether they really wanted to read them or not, simply to gain the rewards. The result might be a reduction in overdues, but only because of a substantial rise in circulation as many patrons borrow items they do not need in order to gain rewards for returning the items before the due dates. It is easy to imagine the lack of enthusiasm of the library's shelving crew for a system which dramatically increases the number of items to be reshelved but has no real effect on the overdues problem which the system was supposed to address. Therefore the system does not reward every instance of timely return of library material but instead divides the year into time periods and rewards anyone who borrows and returns on time just one item without accumulating any overdues during the same time period. Clearly this system does not completely solve the problem of people borrowing items solely to get a receipt for a subsequent reward, but certainly not everyone is going to take the trouble to come to the library during each time period to randomly borrow an item, and the proposed system minimizes the number of items that will be borrowed unnecessarily because only one item needs to be returned on time in order for a patron to be eligible for the program. The use of positive reinforcement to encourage timely return of library materials will also inevitably reward borrowing, since one cannot return something if it has not been borrowed. However, the delay before the actual delivery of the reward, the fact that only one borrowed item is required for eligibility for a reward, and the recording of the names of those who have already redeemed receipts for a particular expiration date are all system components designed to discourage excessive exploitation of the system. Perhaps a little bit of exploitation is more than tolerable if the system significantly reduces overdues. One other advantage of only issuing one receipt per patron per time period is that it saves the circulation staff having to issue a receipt every time an item is returned. If the patron in question already has a receipt for the current time period, another receipt is worthless.

Another important feature of the system is that patrons are not allowed to be rewarded for returning one item on time if they have other overdue accounts during the same time period. While some librarians might like to try this system and reward patrons provided they have paid any overdue accounts accumulated during a given time period, it can be argued that forgiving other overdue accounts, paid or not, simply because other items are returned on time sends the wrong message to patrons. The system is intended to reduce overdues altogether, not to allow patrons to accumulate overdues in exchange for returning some items on time. By delaying the delivery of a reward, the system both discourages to some extent the temptation to exploit the system with unnecessary borrowing and requires patrons to return all other loans on time or else forfeit the reward they would otherwise have earned. Looked at in this light, it might be said that the proposed system does not actually delay delivery of the reward because the reward is for the patron's behavior over the entire time period, not just for returning one item on time.

delivery of the reinforcement to the acts of desired behavior (returning library materials on time) obviously varies with the number of items borrowed during the time period, but it is not desirable to reward every instance of timely return for the reasons given. The delivery of the reinforcement based upon time periods is usually considered an intermittent schedule of reinforcement. The use of the time periods is necessary to discourage patron exploitation of the system, encourage compliance with due dates over a period of time rather than in just a single case, and also is desirable insofar as intermittent schedules of reinforcement are thought to be more effective than continuous reinforcement schedules in ensuring that the desired behavior continues after reinforcement ceases. (Many of the library's patrons will eventually use other libraries in the future and may continue to return all borrowed materials on time out of force of habit. Use of a positive reinforcement system in school libraries might influence future habits of the children as they grow up and use other libraries.) However, intermittent schedules of reinforcement lose their effectiveness if the rewards are offered too infrequently. Depending on the length of the standard loan period, a library might not want to schedule time periods to be longer than two or three months.

As for the kind and desirability of the reinforcer, what rewards might be offered that will provide sufficient incentive to make the program work? As has been noted, selecting desirable rewards will require careful consideration of the general characteristics of the different segments of a library's users. Examples of the kinds of rewards that have proven successful as reinforcers for certain types of people may be found by consulting the psychological literature about experiments with a *token economy*, because that is in fact what the positive reinforcement program described here is called. A token economy is based on the issuance of tokens (in the proposed library system the tokens are the receipts), items with no inherent value that can later be exchanged for the actual reinforcer, the reward. One token economy experiment was carried out at a branch library at Rutgers University in which token reinforcement was successfully used to encourage patrons to reshelve any journals which they had used. The rewards offered in exchange for the earned tokens included a number of services and products at various university businesses, such as movie tickets, hamburgers, cigarettes, bowling games, use of pool tables, items from a sweet shoppe, chances in a 25 dollar raffle, and one of the most popular of all the rewards, free photoduplication of desired library journal articles. The range of rewards offered in the Rutgers experiment can be transferred to many other library settings. To take the most general and simple examples: an elementary school library might offer food and drink from the lunch program or discount coupons for purchases at local toy stores; the latter rewards might also be offered by a public library to its younger borrowers. An academic library might mimic the Rutgers experiment by offering discounts on library photocopying, interlibrary loan fees, online database searches, fees for activities in the student union, or on purchases at local businesses and restaurants which cater to college students. Public libraries are also likely to find that discounts at local businesses will be attractive to their adult clientele, as would chances in a raffle and discounts on photocopies. Perhaps the best way for any library to select the range of rewards to be offered is to solicit suggestions from the patrons themselves. In fact, responsiveness to a library's token economy program would probably be enhanced by allowing the participants to preselect whichever of the available reinforcers they hope to earn. It was pointed out previously that it is difficult for circulation managers to determine the size of fines which would be fair and effective for most of their patrons, but patrons might enthusiastically help identify a range of rewards from which people in any of the library's patron "categories" would be able to find something they would like to earn.

The above are just a few examples of the kinds of rewards which might be offered depending on the tastes of the targeted patrons. Many possibilities have serious implications for the library budget and must be considered in that light. Other possible rewards may cost the library little or nothing. For example, many local businesses might view participation in such a library program as a good opportunity to increase business, and they would probably be happy to be identified as sponsors of such a library program.

Several other details would need to be addressed before such a token economy program could be implemented by a library circulation department. For example, receipts would have to be purchased for use if the department is not already using a receipt that could also serve the new intended purpose. Estimating the number of receipts to purchase per year might be tricky at first unless the library has some kind of circulation data which could be applied to the estimate.

time period of the receipt in question. Such records almost certainly are already kept at libraries which assess fines for overdues. For these libraries, the only additional record keeping would seem to be the logbook (or other method of register) in which staff members write the names of those patrons who redeem receipts. At the end of each time period, the logbook is turned to a new page which is headed with the expiration date of the new time period. Of course, many libraries using manual charging systems are already hard-pressed to keep accurate and up-to-date circulation records, and having the extra duty of checking the validity of a patron's request for a receipt or a reward may only add to the library's woes; perhaps this system is not for them. However, as more and more libraries implement automated circulation systems the record keeping necessary to support the proposed token economy may be much easier to maintain and use.

While complications with the various details required to administer the proposed system should not be minimized, they cannot be adequately addressed further in the abstract. Each library will have its own unique circumstances that affect whatever policies and procedures are implemented for dealing with the overdues problem. The purpose of advancing the proposed token economy here is to suggest that we have not exhausted the alternatives (or supplements) to fines and other overdues sanctions. With a little application, other librarians could certainly develop better positive reinforcement systems for combating overdues than the one related here. But if specific practical concerns about the mechanics of a positive reinforcement system cannot be fully addressed here, certainly consideration of possible philosophical objections is necessary before this paper is concluded.

PHILOSOPHICAL OBJECTIONS TO OPERANT CONDITIONING

A number of people, both librarians and library patrons, might voice objections to the very notion of rewarding patrons for returning library materials on time. First, there are general concerns about the use and misuse of operant conditioning techniques. These concerns have become widespread in the wake of the works by B. F. Skinner and others which describe how social behavior can be manipulated through modern psychological methods. A thorough review of this important and complex subject appears in Chapter Ten of Alan E. Kazdin's *The Token Economy* (New York: Plenum Press, 1977), a work to which this paper is heavily indebted. For the purposes of the present discussion, it is safe to assume that most librarians would not consider reducing the frequency of overdue books to be a sinister goal, and of course librarians are already using operant conditioning techniques (fines and other sanctions) to accomplish the goal. What we are seeking are means to accomplish the ends, means that are more effective (and more ethical?) than fines.

The second type of objection to using rewards is perhaps more likely to be raised by librarians: Should people be rewarded for carrying out what is essentially an obligation? Unfortunately, society has found it can be very helpful to reward people for performing many tasks that would normally be regarded, if not as obligations, at least as inherently good. Many of us are far more likely to take aluminum cans and newspapers to recycling centers if we receive rebates for doing so. Many parents find that their children are more likely to do their school homework if extra television viewing privileges are associated with finished homework. Of course, some will argue that recycling is not really an obligation and that rewarding children for doing homework sends the wrong signal: Don't do anything you don't want to do unless you get something out of it. In other words, a good argument can be made that program efficacy is not itself a justification. But at the risk of oversimplification, or perhaps of appearing to duck the argument, we might suggest that librarians who expect (unrealistically?) people to do the right thing, and only do it for the right reason, will not be persuaded that rewards are appropriate incentives for returning library materials on time. The idea simply cannot be reconciled with their values and their views of human nature. On the other hand, librarians with a more practical bent will be mainly concerned with the effectiveness of positive reinforcement techniques as tools for reducing overdues and enhancing the library's image. If rewards for adhering to the library's due dates do reduce overdues, library materials will be more accessible to the public and the circulation staff will spend less time processing overdue notices, fines notices, and bills for lost items. The result should be improved library service.

CONCLUSION

Many librarians have expressed dissatisfaction with the use of sanctions to deter overdues, arguing that negative reinforcement does not deter overdues enough to justify either the poor public relations that result or the questionable ethics of fining or restricting the library borrowing of patrons unable to comply with the sanctions. While some librarians have acted upon their reservations and have experimented with alternative methods for minimizing overdues, there is little solid evidence to support the claim that no-fines systems are better at minimizing overdues than are systems which charge fines. Further, no-fines systems are unsatisfactory to many librarians because the systems provide little incentive for compliance with loan periods which try to ensure sharing instead of hoarding. However, a positive reinforcement system might encourage patrons to return or renew materials on time without any of the negative aspects of a fines system. Yet a positive reinforcement system is not incompatible with the assessment of fines, and many libraries might find that the most effective way to minimize overdues is to combine the best features of the positive and negative systems. In any event, if a system of rewards proved to significantly reduce the number of items that became overdue without seriously disrupting other circulation duties and the library's budget, the library would have successfully improved service and its image in the eyes of its public. The only way to know whether positive reinforcement techniques would be helpful in dealing with the overdues problem at school, public, or academic libraries is to put the techniques to the test.

Unfortunately, commitments to other duties and projects make it difficult, if not impossible, for librarians to find the requisite time to adequately plan and implement new, untried systems. No new system can receive a fair trial if the responsible administrators are unable to devote sufficient time and energy to the project. For example, the author's institution will not be able to plan and implement a positive reinforcement method for minimizing overdues until it has successfully completed the complex transition from a batch automated circulation system to an online system. The only way to overcome the barrier of previous commitments is to remember that many of those commitments are probably the result of the setting of priorities. If we are dissatisfied enough with sanctions for overdues and wish to replace or supplement them with a program of positive incentives, we must insert the proposed program into our set of priorities. Eventually the positive reinforcement program will move to the top of the list of priorities, and then perhaps those who care enough about minimizing overdues and better serving our public, and who have the time and energy to expend, can lead the way in combating overdues in a positive manner.

NOTES

1. A comprehensive review of the considerable literature on overdues policies is beyond the scope of this paper. Interested readers are referred to the bibliography and other articles in *Library & Archival Security* 6 (Summer/Fall 1984), an issue totally devoted to questions relating to library overdues. Recent practices and concerns of librarians for dealing with the problem of overdue materials are recounted in Sheila Intner's *Circulation Policy in Academic, Public, and School Libraries* (Westport, CT: Greenwood Press, 1987) and Henry J. Dubois' "From Leniency to Lockout," *College and Research Libraries News* 47 (December 1986):698-702.
2. Thomas Alford, Richard W. Cruce, Verda Hansberry, David F. Kohl, Jr., and Jean N. Richardson, "Fines and Penalties Report," *LAD Newsletter* 3 {September 1977}:32-33.
3. The brief overview of operant conditioning theory in this paper is derived from the more thorough explanation found in Alan E. Kazdin, *The Token Economy* (New York: Plenum Press, 1977).
4. Hugh Meyers, Peter E. Nathan, and Steven A. Kopel, "Effects of a Token Reinforcement System on Journal Reshelving," *Journal of Applied Behavior Analysis* 10 (Summer 1977):213-218.

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