*THE HOME POINT SYSTEM: TOKEN REINFORCEMENT
PROCEDURES FOR APPLICATION BY PARENTS OF
CHILDREN WITH BEHAVIOR PROBLEMS¹*

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Parent-child problems within the home are frequently reported to be instances in which children refuse to help with household chores, bicker among themselves, or engage in verbally inappropriate behavior toward their parents. The present study investigated the effects of a token reinforcement program administered by the parents in ameliorating these problems. Two sets of parents, with a total of five children between the ages of 5 and 10 yr, were taught to administer a token economy within their homes. The parents received instruction in specifying desired social and chore behaviors, communicated these behavioral goals to their children, recorded data on their occurrence, and managed a point system backed with reinforcers normally found in the home. The token reinforcement program was shown to have successfully modified 15 problem behaviors in Family 1 and six in Family 2. In addition, the parents rated all 21 behavior changes as significant improvements. These studies indicated that some cooperative parents need only a small amount of professional help to learn to manage their children's behavior problems with token reinforcement procedures.

Robins (1966), in a longitudinal analysis of children referred to a child guidance clinic, emphasized that there is an apparent relationship between early appearing anti-social behavior and later patterns of deviant behavior. Moreover, she emphasized the importance of developing intervention techniques to deal with these childhood behavior problems. Levitt (1957, 1963) and Eysenck (1960) indicated that the traditional child guidance procedures have not been demonstrated to be effective in ameliorating child behavior problems. Recently, there has been in-

creasing evidence that a behavioral approach can be effective with these types of problems.

A number of investigators have reported behavioral techniques for working with parents of children with behavior problems. These include formal training in behavioral principles (Hall, Cristler, Cranston, and Tucker, 1970; Hall, Axelrod, Tyler, Grief, Jones, and Robertson, 1972), reprogramming the social environment (Patterson, McNeal, Hawkins, and Phelps, 1967), behavioral contracting (Stuart, 1971), and training the parents in the home setting (Bernal, 1969; Hawkins, Peterson, Schweid, and Bijou, 1966; O'Leary, O'Leary, and Becker, 1967; Tharp and Wetzel, 1969; Wahler, Winkel, Peterson, and Morrison, 1965; Wahler, 1969; and Zeilberger, Sampen, and Sloane, 1968).

Studies of token reinforcement procedures with predelinquent boys (Phillips, 1968; Phillips, Phillips, Fixsen, and Wolf, 1971) demonstrated the efficacy of such procedures in a home-style rehabilitation setting (Achievement Place). In these studies, points were given by house parents contingent upon specified appropriate be-

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haviors and taken away for specified inappropriate behaviors. These points were, in turn, redeemable for various privileges such as going home, watching TV, and riding bicycles.

This paper describes a program, based on the Achievement Place model (Phillips, 1968 and Phillips, *et al.*, 1971), for the treatment of problem behaviors by parents within the child's home. The methods and findings specific to each of the two families studied are described individually.

FAMILY ONE

Subjects

The three subjects in this study were all members of the same family: A 9-yr-old boy (George), an 8-yr-old girl (Dollie) and a 5-yr-old boy (Keith). The parents were a middle-class family. The father was a college graduate employed in a blue collar job and the mother was a college student majoring in nursing.

The 9-yr-old boy was a good student academically, but had problem behaviors both at school and at home. He had begun skipping school, rarely followed directions at home, and had become particularly sassy toward his mother.

The 8-yr-old girl had mild cerebral palsy and was in an educable mentally retarded class in the public school system. She had had extensive speech therapy and occupational therapy by the Doman-Delacatto method (Melton, 1968). At home, she was described as hyperactive, occasionally engaging in tantrum-like behavior.

The 5-yr-old boy presented few behavior problems. The parents' major complaint was his whining.

All three children frequently engaged in bickering. Bedtime was an occasion for giggling, talking, and general "horseplay" by the two boys who shared a bedroom.

Setting

The family lived in a small, one-story home in a middle-class suburban neighborhood. The two boys shared one bedroom and the daughter had a bedroom of her own. All of the manipu-

lations described in this paper were carried out within the home.

Target Behaviors

Target behaviors were selected in maintenance (*i.e.*, household chores) and social areas considered to be important by the parents. The target behaviors were defined in writing and posted on each child's bedroom door. For example, for George, *make beds* was defined as: "make beds before school. Sheets and blanket tucked in. No big wrinkles. Pillow at head of bed. Animals neat." *Bedtime* was defined as: "the absence of talking, laughing, verbal, or physical interaction between the two boys, following 5 minutes in which to settle down." *Whining* was defined as "a verbal complaint conducted in a sing-song (wavering) manner in a pitch above that of the normal speaking voice." *Bickering* was defined as a "verbal argument between any two or all three of the children conducted in a degree of loudness above the normal speaking voice."

Each of the target behaviors was assigned a specific number of points. For some desirable behaviors, like *making the beds*, points were earned when the task was completed sufficiently to meet the definition, or lost when it did not meet the definition.

Some behaviors that were desirable but could not be expected to occur all the time, like *Sweep Rug*, would earn points only if they met the definition.

Some behaviors considered undesirable by the parents, like *Bickering*, could only lose points.

The parents also selected a number of privileges that the children might work to obtain.

Table 1 shows examples of behaviors that gained and/or lost points and the privileges available. Each child had a 5 by 7 in. note card on which his points were added and subtracted. The card was divided in half with points earned on the left side along with what the points were earned for and who gave them. The right side contained similar information for points lost. At the end of the day, the points were totalled

Table 1

A partial list of behaviors and the number of points they gained or lost and a partial list of the activities for which licenses were available and the price in points (first family).

LICENSES AVAILABLE		PRICE IN POINTS
BASIC PRIVILEGES		60
DRIVE-IN MOVIE		200
PICNIC		50
BEHAVIORS THAT EARNED AND LOST POINTS		POINTS EARNED OR LOST
GEORGE	1) MAKE BEDS	10
	2) HANG UP CLOTHES	10
KEITH	3) EMPTY TRASH	20
DOLLIE	4) MAKE BED	20
	5) FEED CAT	20
	6) BATHE	20
BEHAVIORS THAT EARNED POINTS		POINTS EARNED
1) SWEEP RUG		10
2) CLEAN BATHROOM		20
3) ANSWER TELEPHONE		15
BEHAVIORS THAT LOST POINTS		POINTS LOST
1) BICKERING		10 EACH OCCURANCE
2) TEASING		10
3) WHINING		10

and the basic privileges for the next day were purchased. The next day's card was then filled out. On the back of the card, the privileges purchased for the day were listed for ready reference. If extra points were earned, they could be spent on other activities or placed in the bank for large activities, such as a movie or a camping trip.

METHOD

Parent Training

The first office interview with the parents was spent discussing the children's behavior at home and in school. The parents were asked to describe and discuss what responsibilities (behaviors) they considered appropriate for each of the children, and to describe what privileges they

thought the children would work for. A list of privileges and responsibilities was tentatively drawn up and point values were assigned. Initially, all fines were set at 10 points per occurrence to simplify the procedure for the parents.

During the second office interview, the parents were shown a film and given a paper (Phillips, 1968) describing the Achievement Place program², the point cards were introduced and explained. Numerous hypothetical examples were discussed to acquaint the parents with the use of the card. The parents were instructed not to make any changes in the "economy" unless

²"Achievement Place", 30 min, 16 mm black and white, sound. Available, without charge, from: The University of Kansas, Bureau of Visual Instruction, Lawrence, Kansas 66044.

the therapist was present. The parents were instructed to try the system for one day, after which the therapist would make a home visit (in the evening) to check on their progress. The mother was contacted by phone the next day, before the children returned from school, to see if she had any last-minute questions and to encourage her to use the system when the children returned from school.

A home visit was made in the early evening the first day the point system was introduced. The parents were asked to describe how they used the point system and encouraged to continue using it. No effort was made to teach the parents any new vocabulary (*e.g.*, reinforcers, discriminative stimuli, *etc.*) or any general behavioral principles. The entire training program consisted of teaching the parents how to use the point system and encouraging them to rely on it. Total intervention time with this family was approximately 10 hr.

Maintenance Behaviors

Baseline. Data were recorded on target behaviors for each of the three children for three weeks, with no mention of the program to the children.

Point rewards and fines. The point system was then instituted for the maintenance behaviors and on whining. Table 1 indicates the number of points that could be earned or lost for each of the maintenance behaviors. For example, if Keith emptied the trash properly he earned 20 points, if he failed to empty the trash properly, he lost 20 points. No consequences were placed on the other behaviors, although they were recorded daily.

Social Behaviors

Baseline. Two social behaviors were selected for each child: for George, bickering and teasing; for Dollie, whining and bickering; and for Keith, whining and bickering. Baseline data were recorded on the behaviors simultaneously with the recording of baseline data on the maintenance behaviors.

Point fines. Point fines were then instituted using a multiple baseline design across behaviors (*cf.* Baer, Wolf, and Risley, 1968). That is, baseline data were taken for three social behaviors for each of the three children. Then, the point fines were put in for one of the behaviors for each child. When a consequence was scheduled for a behavior, and when the behavior occurred, one of the parents would approach the child and tell him that he had been fined and for which behavior he was fined. After approximately two weeks, the point fines were begun for a second behavior for each child and two weeks later the point fines were in effect for all three social behaviors.

RESULTS

Reliability

All primary observations were done by the parents. The data reported herein were gathered by the parents. Occasionally, one of the experimenters would go to the home in the evening, unannounced, for the purpose of checking the reliability of the behavioral definitions. The experimenter and one or both of the parents would walk through the house and independently record whether or not each of the chores met the criteria for completion.

The reliability checks assessed agreement about the response definitions only and not about the times when chores were actually performed. In many instances, the chores had already been performed when the experimenter arrived. On those occasions, the experimenter and the parents each individually checked to see if the performances met the criteria for completion. For the social responses, the reliability checks took place at the times that the behaviors could occur in order to see whether or not the experimenter and the parents would agree on the occurrence or non-occurrence of the social responses.

During the entire experiment, 768 behaviors were inspected, over the total of 68 days. Reliability observations of 136 behaviors were made

by the experimenter over a total of four different days—Overall reliability:

i.e.,

The Sum of Agreements divided by The Sum of Agreements plus The Sum of Disagreements averaged 91%.

Reliability of Occurrence

i.e.,

The Sum of Agreements of Occurrence divided by The Sum of Agreements of Occurrence plus The Sum of Disagreements averaged 84%.

Conditions

Maintenance behaviors. Figure 1 shows the baseline data for the maintenance behaviors for each of the three children. During the baseline period, neither Keith nor Dollie performed any of the maintenance behaviors, while George cleaned his room twice. When the point system was put into effect, all three children began performing their respective maintenance tasks on a daily basis.

Social Behaviors. Figures 2, 3, and 4 show the effects of introducing the point fines on the var-

Fig. 1. The effects of introducing a point system for maintenance behaviors of three children (9, 5, and 8 yr old) simultaneously.

Fig. 2. Multiple baseline analysis of the effects of introducing point fines on social behaviors of a 9-yr-old boy. The arrows indicate when the point system was instituted for maintenance behaviors.

Fig. 3. Multiple baseline analysis of the effects of introducing point fines on social behaviors of an 8-yr-old girl. The arrows indicate when the point system was instituted for maintenance behaviors.

ious social behaviors for each of the three children. For George (Figure 2), bickering was at approximately five episodes per day during baseline and dropped to approximately once a day after the 10-point fine was put into effect. The number of times that he was observed to be

violating the bedtime rule during baseline was approximately four per day before the fines and one per day after the fines. His teasing behavior occurred about four times per day during baseline and dropped to one or zero after the fining procedures were instituted.

KEITH

Fig. 4. Multiple baseline analysis of the effects of introducing point fines on social behaviors of a 5-yr-old boy. The arrows indicate when the point system was instituted for maintenance behaviors.

In Figures 1, 2, 3, and 4, the hatchmarks on the horizontal axis during the last week of April and the first two weeks of May indicate a period of time when the mother was out of the home.

For each of the children, the parents found that after the point system was instituted, there were additional behaviors that they wanted to modify. These behaviors, "bedtime" for George,

and Keith, and "jumping on furniture" for Dollie, were measured for approximately two weeks before instituting point fines for their occurrence. For this reason, no data appear for these behaviors during the first several weeks on the point system.

The arrows on the figure represent the time at which the point system went into effect for the maintenance behaviors. The children reported that they thought they would lose points for bickering, teasing, *etc.* When informed by the parents that this was not the case, the behaviors returned to the earlier high rate.

Figure 3 shows the effects of the point fines for three social behaviors for Dollie. Her whining behavior, which ranged from about four to nine times per day during baseline, decreased to one or zero with the introduction of the point fine. Bickering decreased from approximately three times per day to about one or zero per day. Jumping on the furniture, which the parents started recording about five weeks into the experiment, decreased from about four times a day to zero.

Figure 4 shows similar effects of the point fines for Keith. The decreases in his whining, bickering, and bedtime disruptions all corresponded with the introduction of the point fines.

FAMILY TWO

Subjects

This family was composed of the parents and two children. One of the parents had completed high school and the other had not. Both were working and had a combined income of about \$10,000 per year. One of the children was a 7-yr-old boy, Robin, and the other was a 10-yr-old girl, Teresa. Neither child had experienced unusual social or physical problems in the past. Both were in the appropriate grade for their age.

Setting

The family lived in a small, two-story home in a middle-class urban neighborhood. The

parents shared one bedroom while each of the two children had a bedroom of his own. All the manipulations described in this paper were carried out within the home.

Target Behaviors

Both parents reported difficulties in having the children do household chores. The father would usually ignore the problem, but would occasionally become angry with the children for "not doing their part". The mother wanted some help around the house and felt that both children should help, but she frequently made excuses for the children, such as remembering how much she had hated doing the dishes when she was a child.

A list of chores was drawn up by the parents for the children, three for each child. Teresa's chores consisted of making her bed, straightening her room, and washing the evening dishes. Robin's chores consisted of making his bed, straightening his room, and carrying out the kitchen trash in the evening. The criteria for completion of each chore were defined exactly to minimize misunderstanding. Making the bed, for example, was defined as follows: (1) the visible portion of the sheet must be wrinkle-free, (2) the bedspread must be on the bed, wrinkle-free, and (3) the bedspread must fall to within two inches of the floor, without touching the floor, on the two visible sides of the bed.

Initially, each child was told to do each chore with the mother and the therapist present. If either child had difficulty completing the assigned task, he was shown the correct way of carrying out his chore until he could complete it to criteria unaided.

A form was devised on an 8 by 11 in. sheet upon which one of the parents could check each child's daily chore performance. All chores were inspected at 9 pm, seven days a week, unless the family happened to be away from their home. When the family was away from home inspections were not performed. This daily chore form was designed to be filled out in a simple yes/no fashion. There was one daily form for

each child with two daily check lists on each form, one on the left and the other on the right-hand side, such that the parent could fill out both sides of the form, tear it in half, leave one copy for the child, and keep the other copy.

METHOD

Parent Training

The parents met with the experimenter for three interviews outside their home. These interviews consisted of discussion of the kinds of problems presented by their children, as well as an exploration of the kinds of remedies attempted in the past. They were given a verbal description of the token economy that had been used in Achievement Place (Phillips, 1968). Further discussion of the ways this token economy might be adapted for their own use were then explored. They were told the importance of clearly specifying the kinds of behaviors that they desired in their children. The list of household chores for the two children was then drawn up collaboratively. During the initial phases of the actual token economy carried out within their home, several additional discussions were held in the evening. Additional instruction was provided the parents in the procedures of data collection, reliability procedures, and record-keeping. Some role-playing was employed to teach the parents appropriate responses to their children's emotional reactions to having their behavior closely monitored. This consisted mainly of teaching the parents to be non-responsive to various attention-getting stratagems of the children. Total intervention time with this family was approximately 10 hr.

Conditions

A multiple-baseline experimental design was chosen because it would not entail experimental reversal of conditions. The contingent point system was temporarily removed for a brief time toward the end of the experiment, however, providing an additional demonstration of the point system.

Of primary concern was the question of informational feedback. If the children's chore behaviors were monitored and information provided to them on a regular basis, would their chore behavior increase? Since many parents and some schools seem to rely on simple secondary reinforcers for behavioral maintenance, this was tested with these children by providing them with gold stars as signs of approval whenever they carried out a chore. Two forms of monetary reinforcers were then compared. The first was a simple payment for each chore; the second, an incentive system that reinforced consecutive performances. Following this, a simple point system was compared with the preceding procedures. Conditions were instituted for each child in a multiple baseline design so that each child began a condition at a different time.

Baseline

The children were told by their mother on the first day of this condition to do their chores every day. A list of specific chores had been posted on each of the children's bedroom doors the day before. This occurred after it had been determined that each of the children could actually do each chore satisfactorily and was capable of reading the chore list. A daily inspection of all six chores was begun and records kept. This condition lasted nine days for Robin and 13 days for Teresa.

Feedback

During this period, the child's half of the daily chore report card was left on his pillow after the mother had made her inspection and filled out the form such that it indicated how many of each child's chores had been completed. This condition lasted eight days for both children.

Stars

On the first day of this condition, the children were told that a gold star would be glued to their daily chore report card beside the name of each chore successfully completed. A gold star was

placed at the top of each child's "daily chore report card" on the first day to ensure that both children came in contact with this potential reinforcer. This condition lasted eight days for Robin and 11 days for Teresa.

Money

On the first day of this condition, both children were told by the mother that they would receive 10¢ for each chore completed satisfactorily. This money was left in cash on their daily report cards, which were placed on their beds. This condition lasted 12 days for Robin and eight days for Teresa.

Bonus

On the first day of this condition, both children were told by their mother that they would receive a bonus for doing consecutive chores. It was explained that from now on Robin would receive 2¢ per daily chore and 58¢ bonus if he did all his chores for seven consecutive days. Thus, doing all his chores for a week would net him \$1.00. Teresa was told that she would receive 5¢ per chore and a bonus of \$1.00 for doing all her chores for seven consecutive days, thus receiving a total of \$2.05 for a week's chores. The money for the bonus condition was decided on the basis of the child's previous allowance. This condition lasted 16 days for Robin and 21 days for Teresa. (Note: this figure of days per condition excludes days when one or both children were out of the home). Also, up to this time all the conditions were cumulative and never dropped once they were put into effect, *i.e.*, the feedback reports, the stars, and the money. These were all dropped at the beginning of the next condition.

Point System

On the first day of this condition, each child was told that he would receive 500 points per chore completed. They were given point cards to carry, so as to accumulate and spend points. Prices for various activities were as follows:

License to use bicycle daily	500 points per hour
Play out of home	200 points per hour
Watch TV	200 points per hour

In addition, they were told they could be fined 100 points for not doing what they were told to do at home. During this condition, both children were provided ways to earn money that were unrelated to their chores or the point system.

No Points

On the first day of this condition, both children were told that they had been doing so well with their chores that the point system would be discontinued. Free access to all privileges was provided. They were told, however, to continue doing their daily chores. This condition lasted eight days for Robin and Teresa. Chores were still inspected daily.

Point System

Both children were told that the point system was being reinstated. It was set up exactly as during the previous point system condition. This condition lasted 10 days for both children.

RESULTS

Reliability

During the entire experiment, 624 chores were inspected over a total of 105 days. Reliability observations of 102 chores were made by the experimenter over a total of 18 different days. Reliability was checked at least once in each of the first six conditions. Overall reliability averaged 92%, and reliability of occurrence averaged 81%.

Conditions

During the baseline condition (Figure 5) Robin did not complete any of his chores, while Teresa did about 2% of the possible total. With the introduction of the feedback, Robin still did not do any chores, while Teresa completed 4% of hers. Under the Star condition, Robin completed 12% of his chores and Teresa completed

Fig. 5. Multiple baseline analysis across two siblings (7-yr-old boy and 10-yr-old girl) of the effects of various conditions on baseline maintenance behaviors (second family).

6% of her chores. Under each of these three conditions then, the chore performance was minimal, with a total of seven chores completed out of a possible 171. With the 10¢ contingency, Robin completed 47% of his chores and Teresa completed 54% of hers. Chore completion increased again with the Bonus condition in which Robin completed 87% of his chores, while Teresa completed 68% of hers. With the change to the point system, completed chores decreased to a total of 59% for Robin and 45% for Teresa. During the reversal, chores dropped dramatically to 8% for Robin and 4% for Teresa. When points were reinstated over the next 10 days, Robin completed 47% of his chores and Teresa 60% of hers.

GENERAL DISCUSSION

The data from these two families have demonstrated that cooperative and motivated parents can manage a point system within their home using naturally occurring reinforcers. Both of these families were able to modify bothersome behaviors of their children with no formal training in behavioral principles and little contact with a professional therapist. These results are similar to those reported by Phillips (Phillips, 1968 and Phillips, *et al.*, 1971) and significantly extend the area of usefulness of the token economy from the foster home to the natural home.

It bears mentioning that none of these children were exhibiting severely inappropriate be-

haviors. The effectiveness of the point system with such behaviors in a private home has not yet been investigated. In the face of the available alternatives, the extension of the token economy to management of these types of behaviors does seem to be a plausible solution.

In this study, as in Hawkins, *et al.*, (1966), the families were both cooperative and they fully implemented the techniques suggested by the therapists. It is extremely doubtful that such a token economy would be effective without the cooperation of the parents. Indeed, this suggests that the next area of research needs to be directed toward finding techniques that would either "produce" the sort of cooperation necessary in uncooperative parents or allow an easy selection of parents who will cooperate from the total number of parents referred. With the parents' cooperation, managing the children's behavior presents no major problems.

We have found that all parents have been skeptical of the token economy before using it. This skepticism usually disappears once parents have successfully manipulated one troublesome behavior. For this reason, we usually begin with only one or two behaviors, and expand the system only after the parents have managed the two behaviors.

Generally, parents discontinue using the token economy when contact with the therapist is terminated. In each case, the parents have reported satisfaction with the behavior of their children after the token system was removed,

even though the behaviors may not be maintained at the same level as they were with the economy in effect.

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