*ACHIEVEMENT PLACE:
DEVELOPMENT OF THE ELECTED MANAGER SYSTEM¹*

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A series of experiments was carried out to compare several administrative systems at Achievement Place, a family style behavior modification program for pre-delinquent boys. One aspect of the motivation system at Achievement Place was the token economy in which the youths could earn or lose points that could be exchanged for privileges. Several arrangements for assigning routine tasks and for providing token consequences for task performance were compared for their effectiveness in accomplishing the tasks and for their preference by the boys. The independent variables studied included: (1) individually assigned tasks *versus* group assigned tasks; (2) consequences for individual performance *versus* consequences for group performance; (3) a peer managership that could be earned by the highest bidder *versus* a peer managership that could be determined democratically by the peers. The results suggested that among those systems studied the system that best met the criteria of effectiveness and preference involved a democratically elected peer manager who had the authority both to give and to take away points for his peers' performances.

In many behavior modification and traditional residential treatment programs there are a number of routine maintenance and self-care tasks that the clients are expected to carry out each day. The supervision of these routine tasks appears to involve three administrative functions: (1) the tasks are assigned, (2) the performances are evaluated, and (3) the consequences are given. These administrative functions can be arranged in a variety of ways. The most common system of administering routine tasks in programs based on a token economy seems to involve a staff member (1) assigning each task to an individual, (2) evaluating each individual's performance, and (3) presenting

to each individual the consequences, such as praise and tokens for task completion, and perhaps punishment, such as loss of tokens or re-assignment of the task, for failure to complete the task. This administrative system involving staff members directly supervising individual clients seems to be the most commonly described system in the token economy literature (Ayllon and Azrin, 1965, 1968; Burchard, 1967; Atthowe and Krasner, 1968; Boren and Colman, 1970; Winkler, 1970).

There are a number of other possible administrative arrangements. For example, according to Bronfenbrenner (1970), in the Soviet Union the emphasis in most administrative arrangements is on the group rather than on the individual. Bronfenbrenner (1970) reported that in Soviet schools each youth belongs to a small group and it is the group unit that is assigned tasks and rewarded or disciplined. Apparently, on occasion, an individual may be singled out for discipline, but in these instances his group would also receive negative consequences. According to Bronfenbrenner, these group consequences led to each youth's understanding that, since his status depends a great deal on the

¹These experiments were supported by grant MH16609 and grant MH20030 from the National Institute of Mental Health (Center for Studies of Crime and Delinquency) and by grant HD03144 from the National Institute of Child Health and Human Development. The grants were made to the Bureau of Child Research and the Department of Human Development, University of Kansas. We would like to thank Jon Bailey and Gary Timbers for their assistance in carrying out these experiments. Reprints may be obtained from E. L. Phillips, Bureau of Child Research, University of Kansas, Lawrence, Kansas 66044.

standing of his group, each youth watches over his peers, encourages good performance in his peers, and helps his peers when needed. In addition, rather than a staff member carrying out the administrative functions, a peer, described as a "responsible monitor", often is assigned this duty. Makarenko (1953), a highly regarded Russian expert on programs for youths, also reported the use of a group-focused administrative system in his treatment of delinquent youths.

Organizational researchers have suggested other possible administrative arrangements (Vroom, 1967). These researchers have compared a number of administrative arrangements for effectiveness and preference by adult workers. For example, Seashore and Bowers (1963) reported that the introduction into an industrial plant of administrative changes (such as increased emphasis on the work group as a functioning unit, and increased participation by employees in decision-making processes in their area of responsibility) produced increases in employee satisfaction and possibly increases in production.

A classic comparison of administrative systems and the behavior of youths in small groups was carried out by Levin, Lippitt, and White (1939). Their data suggested that a "democratic" style leader was more effective in producing task-oriented behavior and was more preferred than were "authoritarian" or "laissez-faire" leaders. The "democratic style" leadership was characterized by "group decision" and "discussion" with "the divisions of responsibility . . . left up to the group".

The purpose of the present research was to evaluate several systems for administering routine tasks in a residential treatment program for pre-delinquent youths in Achievement Place, a family style, behavior modification group home. Two formal criteria were used for evaluating the administrative systems. The first criterion was the *effectiveness* of the systems in producing the goal behavior of task completion; the second was the boys' *preference* for the system.

The particular systems chosen for evaluation from among the wide array of possibilities were selected to some extent on the basis of two informal criteria. These two criteria were that the systems be (1) practical, in that the systems appeared to be reasonably easy for the staff (teaching-parents) to supervise, and (2) beneficial, in that they appeared to have some potentially positive aspects for the youths, as for example, some systems seem as though they might facilitate interaction among the youths.

The administrative systems that were studied varied along the dimensions of: (1) individually assigned *versus* group assigned tasks, (2) consequences for individual performance *versus* consequences for group performance, and (3) a peer managership that could be earned by the highest bidder *versus* a managership that could be determined democratically by the peers.

GENERAL METHODOLOGY

The rehabilitation program at Achievement Place consisted of training and evaluation that occurred during the various phases of a token reinforcement system. These phases progressively took the youth from a system of concrete and immediate token rewards to a system of more abstract, remote, and natural consequences for his behavior (see Allen, Phillips, Phillips, Fixsen, and Wolf, *in press*; Fixsen, Phillips, and Wolf, 1973; Phillips, Phillips, Fixsen, and Wolf, 1971; Phillips, Phillips, Fixsen, and Wolf, *in press*). During the present experiments, each of the boys was on the weekly point system. On this system, the youths earned points each day, daily points were accumulated, and on Friday of each week the youths could use their points to buy privileges for the following week. There was also a daily difference requirement of 1000 points. This meant that a youth had to earn 1000 points more than he lost each day in order to retain the use of his privileges for the next day. The privileges and their weekly prices were: *Basics* (use of tools, games, recreation area, going outdoors, *etc.*), 3000 points;

Snacks, 1000 points; *TV*, 1000 points; *Hometime* (permission to leave Achievement Place to go home, downtown, sports events, etc.), 3000 points; *Allowance* (per \$1.00), 2000 points; *Bonds* (savings for gifts, special clothing, etc.), 1000 points; *Special Privileges*, point price negotiable. By earning a point difference of 8000 points each week a youth could "live comfortably" by purchasing the *Basics*, *Snacks*, *TV*, and *Hometime* privileges.

When the youths were on the point system, they could both earn and lose points. However, since the point system at Achievement Place was flexible, (i.e., there was a nearly unlimited number of ways to earn points and point losses could be made up) the point losses did not necessarily lead to loss of privileges, since the youths had many opportunities to make-up the lost points.

Subjects

Fourteen boys served as subjects during the 3-yr period of the research. The boys were 10 to 16 yr old and had been declared dependent-neglected or delinquent by the juvenile court and assigned to Achievement Place by the welfare department that was given custody of the boys. Most of these youths had had several contacts with the juvenile court and almost all had been suspended from school or were under consideration for suspension when they came to Achievement Place.

Recording Technique

A maintenance task (bathroom cleaning) was chosen as a measure of the relative effectiveness of the various conditions for several reasons. First, it could be measured easily and reliably. Second, it was a task that was available every day; thus, data could be collected constantly and frequently. Third, failure to clean the bathrooms was not so critical that we could not afford to let it happen (as was not the case with many of the behaviors of the boys). Fourth, it was useful to measure behavior that left a permanent record in the environment.

The bathroom cleaning tasks met each of these criteria.

An experienced observer, using the following 12 definitions, collected the data each day from two bathrooms in the home. In one bathroom, all 12 cleaning tasks were checked each day. The second bathroom did not have a waste basket, counter top, hallway, or shower, so items 2, 5, 7, and 9 did not apply and were not checked. Thus, in the first bathroom, 12 items were checked each day and in the second bathroom, only eight items were checked each day, a total of 20 items for both bathrooms. All of these observations were collected while the youths were at school. The following definitions were used to score 12 bathroom cleaning tasks:

1. *Sink*—Must be able to pass the white glove test. (The white glove test consisted of rubbing a white tissue over all exposed areas of the object being checked. The tissue must not have accumulated more than $\frac{1}{8}$ by $\frac{1}{8}$ in. area of material or water.) No objects on sink other than soap and soap dish (an object was defined as anything greater than $\frac{1}{4}$ by $\frac{1}{4}$ by $\frac{1}{4}$ in.).

2. *Waste Basket*. Must be able to pass white glove test and no objects in basket. Must be placed in corner less than 3 in. from tub and 3 in. from wall (one bathroom only).

3. *Toilet Paper*. Paper should be in dispenser with none hanging below the lower edge of the roll.

4. *Medicine Cabinets*. Toothpaste, toothbrushes, and nail files must be at a 90° angle (give or take 15°) with the back of the cabinet. All other objects must be touching the back of the cabinet and both the outside and inside of the cabinet must pass the white glove test. Door closed.

5. *Counter Tops*. White glove test and free of all objects (one bathroom only).

6. *Towels*. One towel and one wash cloth per hanger with at least two hangers per bathroom. No edge of a towel should extend beyond another edge of the same towel by more than 2 in.

7. *Hallway*. Free of all objects (one bathroom only).

8. *Floor.* No objects on the floor and not enough dirt or dust to cover an area of $\frac{1}{4}$ by $\frac{1}{4}$ in. If rugs are required they must be centered under the sink (less than 6 in. deviation from one side to the other) and within 1 ft of the wall (the wall edge of the rug should not be closer than 10 in. and not further than 14 in. away from the wall).

9. *Shower.* White glove test. No objects in shower except soap, which must be in soap dish (one bathroom only).

10. *Stool.* White glove test. Lid down, no objects on or in stool.

11. *Windows.* Shades at half and window closed. Sills must pass white glove test and be free of all objects.

12. *Lights and Doors.* Lights out and door open.

Occasionally (about once a week), a second observer also collected the same data on the same 20 cleaning tasks independently of the primary observer. The records of the two observers were compared item-by-item and the number of agreements was divided by the number of agreements plus disagreements (*i.e.*, 20) to provide a measure of inter-observer agreement. Agreement averaged 92% and ranged from 82% to 100% during the study.

The Managership

The boys in Achievement Place could purchase the "managership", which allowed them to assign tasks and deliver consequences. The duties of the manager included supervising the cleaning of the bathrooms, supervising the boys having snacks, straightening up the living room, locking doors and closing windows at night, supervising showers and brushing of teeth, getting everyone up on time in the morning, making sure the dirty clothes were in the clothes hamper, and monitoring the social behavior of his peers. In each of these areas, the manager had the authority to give or take away up to 500 points for his peers' behavior.

Before the comparative research described here began, the peer manager was usually

chosen "auction style" each Friday. To hold the "auction", the teaching-parents and the youths met and the teaching-parents asked the boys who wanted to be manager. If more than one boy raised his hand, the teaching-parents asked each boy how much he would pay to be manager. Each boy was allowed to bid as many times as he wished and the managership was purchased by the highest bidder.

One important component of all of the manager systems was that the managers' decisions about point fines and rewards, and the managers' choices of youths to clean the bathrooms, were always backed up by the teaching-parents at the time the manager made the decision. Thus, if a youth felt that he had been treated unfairly by a manager, he was told by the teaching-parents to go ahead and clean the bathroom or take off the points, and then bring up the problem at the family conference that was held each evening (see Fixsen, *et al.*, 1973, for a complete description of the family conference). At the family conference, the youths and the teaching-parents could make a decision about the fairness of the manager's decision. This procedure was very important for two reasons. First, this procedure required the youths calmly to accept occasional unfair treatment by their peers and, instead of arguing or getting mad impulsively at the time they were treated unfairly, the youths were encouraged to bring up the matter later at the family conference. By following this procedure, the youth's complaint about the manager would be taken up very seriously at the family conference, since it was clear that the youth was not trying to avoid the job or get out of anything by complaining at that time.

In informal observations, this procedure appeared greatly to reduce the number of arguments and disputes between the youths and the manager, and served to make the managership a position of authority.

Second, this procedure was important because it provided a great deal of feedback to the manager each day. Whenever a youth or the teach-

ing-parents brought up a complaint about the manager at the family conference, the discussion centered around the manager's inappropriate behavior in the situation and the behaviors that would have been more appropriate. The daily review of the manager at the family conference thus served as the chief means of teaching the youths how to be fair and just leaders.

EXPERIMENT I: COMPARISON OF THE EFFECTIVENESS OF A PURCHASED MANAGER CONDITION WITH A GROUP CONSEQUENCE CONDITION WHERE THE ASSIGNMENTS WERE GIVEN EITHER TO THE GROUP OR TO INDIVIDUALS

Earlier research (Phillips, 1968) demonstrated that the purchased managership was more effective than a condition where the cleaning tasks and point consequences were given on a group basis. The purpose of Experiment I was to replicate the earlier experiment and to investigate the effectiveness of two group consequence conditions: one where tasks were assigned to the group and one where tasks were assigned to individuals, compared to a purchased manager condition where the manager assigned tasks to individuals and delivered individual consequences.

Subjects

Four boys (Ss 1, 2, 3, and 4) served in this experiment.

Conditions

Purchased manager (± 500). The boy who had purchased the managership assigned the bathroom cleaning tasks to individual peers each day. He paid or fined the workers up to 500 points each, according to the quality of their performance as judged by the manager. The manager earned 25 points for each completed task if 15 or more of the 20 tasks (75%) were completed and lost 25 points for each task

not completed if fewer than 15 tasks were completed.

Group assignment-group consequence (± 500). The teaching-parents gave instructions that everyone was responsible for the bathrooms and each boy should clean his share of the bathrooms. No specific tasks were assigned. The entire group (regardless of whether certain individuals had helped with the cleaning or not) would receive the rewards or fines. Each boy was fined 25 points per incomplete item when fewer than 15 of the 20 items (75%) were completed. When 15 or more of the tasks were completed, each boy was paid 25 points per completed item. The criterion of 15 out of 20 items was chosen because it represented a level of bathroom cleanliness that seemed acceptable.

Individual assignment-group consequence (± 500). Each youth was assigned an equal portion of the bathroom cleaning tasks (five items per boy) and was instructed that only he would be responsible for these areas. However, each boy still earned or lost points according to the performance of the entire group (the same success criterion was used as in the preceding condition).

RESULTS AND DISCUSSION

As shown in Figure 1, the *purchased manager* condition produced a less variable and higher level of bathroom cleaning (median = 18 items completed, range = 14 to 20) than either the *individual assignment-group consequence* condition (median = 14 items correct, range = 4 to 19) or the *group assignment-group consequence* condition (median = nine items correct, range = 1 to 18). Under the *purchased manager* condition, the youths' performance was at or above criterion levels on 24 of 26 days (92%). The criterion was met on 12 of 31 days (39%) under the *individual assignment-group consequence* condition and on five of 25 days (20%) under the *group assignment-group consequence* condition.

Fig. 1. Comparison of the effectiveness of a purchased manager system that included a peer-manager who assigned tasks and consequences to individual youths, with a group assignment-group consequence system and an individual assignment-group consequence system where the teaching-parents assigned cleaning tasks to the group or to individuals and all consequences were shared equally by the group.

These data seem to suggest that as the assignment of tasks and consequences become more individualized, the effectiveness of the procedure increased. Neither group-consequence condition was very effective when compared to the manager condition, but individual task assignments did increase the effectiveness of the group consequence procedure when compared to group task assignments.

EXPERIMENT II: COMPARISON OF THE EFFECTIVENESS OF A PEER MANAGER WHO ASSIGNED TASKS AND CONSEQUENCES WITH THE TEACHING-PARENTS WHO ASSIGNED TASKS AND CONSEQUENCES

The results of Experiment I indicated that, with group consequences held constant, the individual assignment condition produced a higher number of completed tasks than the group assignment condition. The *purchased*

manager condition, where both the assignments and consequences were individualized, was the most effective. The purpose of Experiment II was to compare the *purchased manager* condition with a condition that had both individual assignments and consequences for individual performance.

Subjects

Four boys (Ss 1, 2, 3, and 4) served.

Conditions

Purchased manager (± 500). The boy who had purchased the managership assigned the bathroom cleaning tasks to individual peers each day. He paid or fined the workers up to 500 points each, according to the quality of their performance as judged by the manager. The manager earned 25 points for each completed task if 15 or more of the 20 tasks (75%) were completed and lost 25 points for each task not completed if fewer than 15 tasks were completed.

Individual assignment-individual consequence (± 500). Each boy was assigned five tasks in the bathroom each day by the teaching-parent. He was also instructed that he would be paid points according to the quality of his work regardless of how well the other boys did their work. There was no peer manager. If a youth completed four or more of his five tasks (80%) he would make 100 points per completed item. If he completed fewer than four of his tasks he would lose 100 points for each incomplete item. Thus, the youths could make or lose up to 500 points each.

acceptable level of cleanliness. Also, the criterion level was met 90% of the sessions in each case. Thus, it may be that the manager's effectiveness lies in the fact that he assigns specific tasks to each individual and delivers consequences to each individual according to his performance.

EXPERIMENT III: ANALYSIS OF THE EFFECTS OF CONSEQUENCES ON THE MANAGER'S EFFECTIVENESS

From the results of Experiments I and II, it appeared that the two most effective conditions (the *purchased manager* condition and the teaching-parent administered *individual assignment-individual consequence* condition) shared two qualities: the assignment of specific tasks to each boy and the administration of con-

RESULTS AND DISCUSSION

Figure 2 shows that the *individual assignment-individual consequence* condition (median = 17.5, range = 13 to 20) was as effective as the *purchased manager condition* (median = 18, range = 13 to 20) in producing an

Fig. 2. Comparison of the effectiveness of a purchased manager system with an individual assignment-individual consequence system.

sequences for each boy's performance. The purpose of Experiment III was to analyze the effects of several consequence arrangements on the manager's effectiveness.

EXPERIMENT IIIA

In the preceding purchased manager conditions, the manager had the authority both to give and to take away points based on his judgment of the worker's performance. Experiment IIIa was designed to compare the effectiveness of a manager who could both give and take away points with a manager who could only give points.

Subjects

Five boys (Ss 1, 2, 3, 4, and 5) served as subjects for this experiment.

Conditions

Baseline. All of the boys were instructed to clean the bathrooms. No consequences were contingent upon their behavior other than the instruction that they clean the bathroom again if fewer than 20% of the tasks had been accomplished. At no time were points made contingent on the cleanliness of the bathroom.

Purchased manager (± 500). The boy who had purchased the managership assigned the bathroom cleaning tasks to individual peers each day. He paid or fined the workers up to 500 points each, according to the quality of their performance as judged by the manager. The manager earned 25 points for each completed task if 15 or more of the 20 tasks (75%) were completed and lost 25 points for each task not completed if fewer than 15 tasks were completed.

Purchased manager (+500). This condition was the same as the *purchased manager (± 500)* condition except that the manager could only give points. He did not have the authority to take away points.

Purchased manager (no points). This condition was the same as the *purchased manager*

(± 500) condition except that the manager could neither give nor take away points for bathroom cleaning behavior.

RESULTS AND DISCUSSION

Figure 3 shows that when the manager had the authority only to give points in the *purchased manager (+500)* condition, the manager system was as effective (median = 15 items completed, range = 11 to 18) as when the manager could both give and take away points in the *purchased manager (± 500)* condition (median = 15 items completed, range = 7 to 19). Both of these conditions were more effective than the *purchased manager (no points)* condition (median = eight items completed, range = 1 to 17) and the *baseline* condition (median = three items completed, range = 2 to 10). The number of items completed met the criterion of 15 correct in 62% of the *purchased manager (± 500)* sessions, 58% of the *purchased manager (± 500)* sessions, 10% of the *purchased manager (no points)* sessions, and in 0% of the *baseline* sessions.

Of the opportunities the managers had to deliver point consequences to their workers, the managers gave points 37% of the opportunities, took away points 28% of the opportunities, and neither gave nor took away points 35% of the opportunities in the *purchased manager (± 500)* condition. In the *purchased manager (+500)* condition, the managers gave points 47% of the opportunities and gave no points 53% of the opportunities.

Figure 4 shows the range and average number of points bid and paid by the boys each week to purchase the managership under the three manager conditions. As shown in Figure 4, the average number of points paid for the managership decreased as the authority of the manager decreased. When the manager could both give and take away points, the boys paid an average of over 2000 points to be manager each week but when the manager could neither give nor take away points the boys paid an average of only 120 points each week.

Fig. 3. Comparison of the effectiveness of three purchased manager systems where the manager could both give and take away points (± 500), could only give points ($+500$), or could neither give nor take away points (No Points).

These results indicate that the authority of the manager to give points was necessary to maintain the cleaning behavior. The authority to both give and take away points did not increase the effectiveness of the manager, but removing the manager's authority either to give

Fig. 4. The range and average number of points bid and paid by the boys each week to purchase the managership under each manager condition. (The vertical lines represent the range of points paid during each condition and the means for each condition are connected.)

or to take away points resulted in a large decrement in the cleanliness measure. The boys paid the greatest number of points to purchase the managership when the manager had the authority both to give and to take away points, which suggests that this condition was more reinforcing for the boys.

EXPERIMENT IIIb

In the previous experiments, the point consequences for the manager were constant. Experiment IIIb was designed to analyze the effects of point consequences for the manager on the effectiveness of the manager system.

Subjects

Four boys (Ss 1, 2, 4, and 5) served.

Conditions

Points for manager. The boy who had purchased the managership assigned the bathroom

cleaning tasks to individual peers each day. He paid or fined the workers up to 500 points each, according to the quality of their performance as judged by the manager. The manager earned 25 points for each completed task if 15 or more of the 20 tasks (75%) were completed and lost 25 points for each task not completed if fewer than 15 tasks were completed.

No points for manager. Same as *points for manager* condition except the manager did not receive or lose points for the cleanliness of the bathroom.

RESULTS AND DISCUSSION

Figure 5 shows that when the manager could make or lose points on the basis of the workers' performance in the *points for manager* condition, there were more items completed (median = 18 items completed, range = 14 to 20) than in the *no points for manager* condition where the manager could neither make nor lose

Fig. 5. Comparison of the effectiveness of the purchased manager system where the manager could earn or lose points for his group's performance (Points for Manager) or where the manager could neither earn nor lose points for his group's performance (No Points for Manager).

points (median = 15 items completed, range = 5 to 19).

The results of Experiments IIIa and IIIb suggest that the point consequences available for the manager to give to the workers is a greater determinant of the workers' performance than the point consequences for the manager himself.

EXPERIMENT IV: COMPARISON OF THE EFFECTIVENESS OF A MANAGER SYSTEM WHERE THE MANAGER COULD BOTH GIVE AND TAKE AWAY POINTS WITH AN INDIVIDUAL SYSTEM INVOLVING POSITIVE REINFORCEMENT ONLY

In Experiment III, the results indicated that the managership that involved authority only to give points was as effective as the manager position that involved both giving and taking away points. The results of Experiment II showed that the *individual assignment-individual consequence* (± 500) condition was as effective as the *purchased manager* (± 500) condition. The purpose of Experiment IV was to evaluate whether positive reinforcement alone would maintain the effectiveness of the *individual assignment-individual consequence* condition to the same degree that it did the *purchased manager* condition.

Subjects

Seven boys (Ss 10, 11, 12, 13, 14, 15, and 16) served.

Conditions

Baseline. All of the boys were instructed to clean the bathrooms. No consequences were contingent on their cleaning behavior except the instructions to clean the bathroom were given again if fewer than 20% of the tasks had been

accomplished. At no time were points contingent upon the cleanliness of the bathroom.

Purchased manager (± 500). The boy who had purchased the managership assigned the bathroom cleaning tasks to individual peers each day. He paid or fined the workers up to 500 points each, according to the quality of their performance as judged by the manager. The manager earned 25 points for each completed task if 15 or more of the 20 tasks (75%) were completed and lost 25 points for each task not completed if fewer than 15 tasks were completed.

Individual assignment-individual consequence ($+500$). Each boy was assigned two or three tasks in the bathroom that he was to clean each day. He was instructed that he would earn points according to the quality of his work regardless of how well the other youths performed. There was no peer manager. Each youth earned 500 points if he completed two or more of the three items assigned to him. The youths could not lose points for failure to meet the criterion.

RESULTS AND DISCUSSION

Figure 6 shows that the teaching-parent administered *individual assignment-individual consequence* ($+500$) condition was no more effective (median = five items completed, range = 1 to 10) than the *baseline* condition (median = five items completed, range = 2 to 6) and considerably less effective than the *purchased manager* (± 500) condition (median = 18 items correct, range = 15 to 19). These data indicate that positive reinforcement alone was not sufficient to maintain the effectiveness of the *individual assignment-individual consequence* condition as it was for the *purchased manager* condition in Experiment III. This difference may be due to the fact that the managers often seemed to use instructions, cajoling, and praise in addition to the point consequences while the teaching-parents only assigned the tasks, checked the completed tasks, and delivered the consequences in the individual system.

Fig. 6. Comparison of the effectiveness of a purchased manager system where the manager could both give and take away points, with an individual assignment-individual consequence system where the teaching-parents could give points, but could not take away points for the youths' bathroom cleaning behavior.

EXPERIMENT V: DETERMINATION OF PREFERENCE

The first four experiments were concerned with determining the effectiveness of the various administrative systems. However, effectiveness was only one of the criteria on which to judge these systems. The other criterion was the preference of the boys. The purpose of Experiment V was to assess the boys' preference for each administrative system. Effectiveness data were not collected during the preference procedure.

Subjects

Six boys (Ss 1, 2, 4, 5, 6, and 7) served.

Procedure

The boys participated in cleaning one bathroom under one of the six administrative systems each morning. The systems, as described in the preceding experiments, were *purchased manager* (± 500), *purchased manager* ($+500$), *individual assignment-individual consequence* ($+500$), *individual assignment-individual consequence* (± 500), and *group assignment-group*

consequence (± 500). Each morning the boys were required to clean one bathroom under one of these systems. The systems were haphazardly ordered across days. Each afternoon the boys voted by secret ballot for the system they preferred. The system that received a majority of the votes was immediately put into effect to govern the cleaning of the second bathroom that afternoon. This procedure allowed the boys' continued exposure to each system in the morning and also required that they participate in the system they chose each afternoon.

The morning exposure to each of the six systems continued for 10 days. Then the most preferred system was dropped from the experiment and the preference procedure was continued for the remaining five systems for eight days. The most preferred system was again dropped and the procedure was continued for another four days. This procedure was repeated until a preference hierarchy was established for all six systems.

RESULTS AND DISCUSSION

The results of this experiment are shown in Table 1. The individual system with only positive reinforcement was the most preferred; it was chosen 10 times out of 10 opportunities. The individual system with positive reinforcement and punishment was the next most preferred. The purchased manager system involving both positive reinforcement and punishment ranked fifth, next to the least preferred.

Taking into account the data on their effectiveness and preference, the six systems were compared on both criteria. The *group assignment-group consequence* (± 500) system was found to be ineffective and was not preferred by the youths. The *individual assignment-group consequence* (± 500) condition was more effective than the *group assignment-group consequence* condition but it was less effective or less preferred than the individual and manager systems.

Table 1

The number of times the youths chose each system and the number of opportunities they had to choose.

System	Number of Opportunities to Choose					Preference Rank
	1-10	11-18	19-22	23-26	26-30	
Number of Times Chosen						
Individual Assignment- Individual Consequence (+500)	10					1
Individual Assignment- Individual Consequence (±500)	0	8				2
Purchased Manager (+500)	0	0	4			3
Individual Assignment- Group Consequence (±500)	0	0	0	4		4
Purchased Manager (±500)	0	0	0	0	4	5
Group Assignment- Group Consequence (±500)	0	0	0	0	0	6

The purchased manager systems were very effective. Nevertheless, the purchased manager systems were clearly among the least preferred, ranking only third and fifth in the preference hierarchy.

The individual system with only positive reinforcement (where each boy was assigned specific tasks, earned points for his individual performance, and did not lose any points for not completing the job) was the most preferred of the six conditions. However, it was also among the least effective.

The *individual assignment-individual consequence* (± 500) condition was among the most effective systems but ranked second on the preference measure. Thus, none of the six administrative systems met our criteria of being both most preferred and effective.

EXPERIMENT VI: COMPARISON OF THE EFFECTIVENESS OF AN ELECTED MANAGERSHIP WITH A PURCHASED MANAGERSHIP

Our dilemma, then, was that none of the systems met both of our criteria for an ideal system. The *individual assignment-individual consequence* ($+500$) system was the most preferred but it failed on the effectiveness dimension. The manager systems, while meeting the effectiveness criterion, failed on an important dimension; they were not preferred by the boys. It struck us that one way of solving the problem would be to find a way of making the manager system more reinforcing to the boys. We sought to find some way of modifying the manager system that would produce a shift in the boys' preference behavior in favor of the manager system. Our bias for the manager system was because it seemed more practical, since it reduced the demands on the teaching-parents and it seemed more beneficial to the youths because it gave them experience in both supervisory and subordinate roles with their peers.

Among the things that we tried was having

the boys democratically elect the manager rather than to bid and to pay points for it. The following experiment describes an analysis of the effectiveness of an elected manager system.

Subjects

Five boys (Ss 1, 2, 5, 7, and 8) served.

Conditions

Baseline. All boys were instructed to clean the bathrooms. No consequences were contingent on their behavior other than the instruction that they clean the bathroom again if fewer than 20% of the tasks had been accomplished. At no time were points contingent upon cleaning or non-cleaning.

Elected manager (± 500). One boy was elected manager each week by a secret ballot cast by each boy. The elected manager was responsible for the daily cleaning of bathrooms as well as the rest of the duties of the purchased manager. He picked the individual or individuals to clean the bathrooms each day and then paid or fined the workers up to 500 points each according to the quality of their work as judged by him. The manager earned 25 points for each task completed if 15 or more of the tasks were completed and lost 25 points for each task not completed if fewer than 15 tasks (75%) were completed.

Purchased manager (± 500). Same as the elected manager condition except the managership was purchased each week by the highest bidder.

RESULTS AND DISCUSSION

As shown in Figure 7, the *elected manager* (± 500) condition (median = 13.5 items completed, range = 8 to 16) was as effective as the *purchased manager* (± 500) condition (median = 13 items completed, range = 8 to 17). Thus, another administrative system was available to the teaching-parents.

Figure 7 also indicates that the effectiveness of the manager system had decreased when compared to the *purchased manager* (± 500) conditions in the first four experiments. The

first six experiments took place over a period of approximately 3 yr. During this period of time, the cost of privileges had increased greatly in the Achievement Place token economy. During the first year of these experiments, the Basics, TV, Snacks, and Hometime privileges sold for 8000 points. Two years later, the same privileges sold for 15,000 points. During the same period of time, the average point transaction increased from about 100 points to about 500 points. During the first year, the four privileges above were obtained only 25% of the time. In the third year, the same privileges were obtained over 95% of the time. From these data it should be evident that more points were available in the final year of these experiments than during the first year.

The increased availability of points may have had a detrimental effect on the manager's effectiveness (as can be seen particularly in Experiment VI). Since it would have been difficult to rearrange the economy of the point system to test this hypothesis directly, an indirect test was provided by increasing the number of points the manager could give or take away from 500 to 1000 points. The results showed that under the *purchased manager* (± 500) condition a

median of 12.5 items were completed, while under the *purchased manager* (± 1000) and *elected manager* (± 1000) conditions the youths completed a median of 17 and 17.5 items, respectively. Thus, increasing the number of points the manager could give or take away restored the manager system to its previous level of effectiveness.

EXPERIMENT VII: COMPARISON OF THE BOYS' PREFERENCE FOR SEVERAL ADMINISTRATIVE SYSTEMS INCLUDING AN ELECTED MANAGERSHIP

The results of Experiment VI indicated that another effective system, the elected manager system, had been developed. The purpose of Experiment VII was to determine the boys' preference for several administrative systems, including the elected manager system.

Subjects

Six boys (Ss 1, 2, 5, 7, 8, and 9) served.

Procedure

The preference procedure described in Experiment V was replicated in this experiment,

Fig. 7. Comparison of the effectiveness of an elected manager system with a purchased manager system.

except the systems that were compared were *purchased manager* (± 500), *purchased manager* ($+500$), *elected manager* (± 500), *elected manager* ($+500$), *individual assignment-individual consequence* (± 500), and *individual assignment-individual consequence* ($+500$). Thus, the two group consequence conditions were dropped from consideration and the two elected manager systems were added. (The *elected manager* ($+500$) condition was included in the preference procedure even though no effectiveness data were available.)

RESULTS AND DISCUSSION

Table 2 gives the results of the preference procedure. The *elected manager* (± 500) condition was clearly the most preferred by the boys. The individual systems were ranked second and third, the *elected manager* ($+500$) system ranked fourth, and the two purchased manager systems ranked fifth and sixth (the boys' preference for the two purchased manager conditions reversed relative to each other from Experiment V to this experiment).

The problem was solved. A system for assigning tasks and consequences had evolved that

met both of our criteria for an ideal system. It was shown to be as effective as the purchased manager system and was clearly the most preferred.

EXPERIMENT VIII: COMPARISON OF AN ELECTED MANAGER SYSTEM WITH A RANDOM MANAGER SYSTEM

The results of Experiment VII showed that the youths preferred a manager system where they could elect the manager and where the manager had the authority both to give and to take away points. However, the four most preferred systems (the elected manager and the individual systems) in Experiment VII did not require the youths to pay points to participate in the system, while the purchased manager systems, which were less preferred by the youths, did require the youths to bid and pay points to acquire the managership. Thus, there were two differences between the elected and purchased manager systems: the elected manager system allowed the youths to elect their manager and the elected manager system cost the youths no

Table 2

The number of times the youths chose each system and the number of opportunities they had to choose.

System	Number of Opportunities to Choose					Preference Rank
	1-10	11-15	16-20	21-24	25-28	
Number of Times Chosen						
Elected Manager (± 500)	8					1
Individual Assignment- Individual Consequence (+500)	2	5				2
Individual Assignment- Individual Consequence (± 500)	0	0	3			3
Elected Manager (+500)	0	0	2	4		4
Purchased Manager (± 500)	0	0	0	0	4	5
Purchased Manager (+500)	0	0	0	0	0	6

points for the managership. The purpose of Experiment VIII was to determine the youths' preference for two manager systems, the elected manager and the random manager. If the youths showed no preference for the elected manager system under these conditions where neither managership cost points, then the attractiveness of the elected managership in the previous preference experiment may have been due to its lack of point cost, rather than due to its feature of allowing the boys to choose their own manager. The random managership was chosen as the comparison condition because under this condition, as under the purchased manager condition, the youths did not choose their manager.

Subjects

Eight boys (Ss 5, 10, 12, 13, 16, 17, 18, and 19) served.

Procedure

The *elected manager* (± 500) system was the same as that described in Experiment VI. The *random manager* (± 500) system was the same as the *elected manager* (± 500) system except that the manager was randomly selected rather than elected by his peers. The random selection procedure consisted of assigning each youth a number, then throwing a die to determine which youth would be manager the next day. Since there were eight boys and only six numbers on the die, the boys were first randomly assigned to group one or group two and then a number was randomly assigned to each youth. The first throw of the die determined the group the manager was to come from, and the second throw of the die determined which boy in that group would be manager.

The boys did not pay points to acquire either the elected manager or the random manager position. The only difference between the two manager systems was that the elected manager was selected by his peers and the random manager was selected by a throw of a die.

For 10 days before the preference procedure was initiated, the youths were exposed to the

two manager systems on an alternating basis. On one day the youths would elect a manager and on the next day a manager was randomly selected. After this initial exposure period ended, the preference procedure was begun. Each evening the youths were asked to vote for either the random manager system or the elected manager system. The manager system that received a majority of the votes was then used as the basis for determining the manager for the next day. The preference procedure remained in effect for 30 days.

RESULTS AND DISCUSSION

Figure 8 shows the results of the preference procedure. During the first 10 days of the preference procedure, the elected manager system was chosen four times (40%). During the second 10 days, the youths' preference for the elected manager system increased to 90%, and during the last 10 days the youths chose the elected manager system 10 times out of 10 opportunities (100%).

Fig. 8. Per cent choice for the elected manager system when the youths were asked to choose between an elected manager system and a random manager system.

These data suggest that the youths prefer a manager system where the manager is elected by his peers rather than selected by chance. The initial preference for the random manager system may have been due to the "gambling" quality of the decision, which the youths seemed to enjoy initially.

EXPERIMENT IX: VALIDATION OF THE PERFORMANCE CRITERION

Throughout these experiments a cleanliness criterion of 75% of the items was used as the basis for giving or taking away points. The 75% criterion seemed to us to represent an adequate level of cleanliness of the bathrooms, but to validate this criterion, it was decided to carry out a final experiment. The validation procedure consisted of asking raters to observe the bathrooms and give their judgement on a four-point scale of the adequacy of the appearance of the bathrooms. The raters were typical of the many people from the community who visit Achievement Place each year.

Procedure and Results

The raters were five trainees in a teaching-parent education workshop. The raters' ages ranged from 22 to 38 yr and they came from a variety of programs in Kansas. The raters were naive regarding the research on the manager system.

The raters were asked to give their opinions of the cleanliness of a bathroom. They were asked to rate the bathroom as completely clean if they could find nothing out of place or even slightly dirty, as adequately clean if they would be satisfied with the cleanliness of the bathroom, as less than adequately clean if they would not be satisfied with the cleanliness of the bathroom, and as not at all clean if they found several things out of place or an intolerable amount of dirt. Each rater was asked to rate the bathroom five times. On the first occasion there were 50% of the items cleaned in the bathroom, on the second occasion 75% of the items were cleaned, then 100% were cleaned, then 75% were cleaned, and on the fifth occasion 50% of the items were cleaned.

The results of this procedure showed that at the 50% level of cleanliness all the raters rated the bathroom as less than adequately clean each time. At the 75% level of cleanliness, four of the

five raters rated the bathroom as adequately clean and one rated it as less than adequately clean the first time, and the second time all five raters rated it as adequately clean. At the 100% level of cleanliness, all five raters rated the bathroom as adequately clean.

DISCUSSION

The results of the validation procedure indicate that the raters judged the bathroom to be adequately clean when 75% or 100% of the items were cleaned but judged the bathroom to be less than adequately clean when only 50% of the items were cleaned. These data seem to confirm the appropriateness of the 75% cleanliness criterion used during these experiments.

DISCUSSION

An elected manager system of administering tasks that was effective as well as preferred by the youths evolved during these experiments. A possible explanation of the relatively high attractiveness of the elected manager system is that it allowed the peers to have contingencies for one another. The manager had immediate contingencies for his workers and the workers had the remote contingency of not reelecting that particular manager. It seemed that when an elected manager would become too demanding, the peers would indicate to him that "if you don't start being more fair, we won't vote for you again". Thus, it appeared that the peers had more control over the manager's reinforcers in the elected manager system than in the purchased manager condition, which could account for the popularity of the elected managership position.

It was of particular interest that the boys chose an elected manager system where the manager had authority to fine as well as to give points. We informally asked the boys why they preferred a system that allowed the manager to punish. They made statements that suggested to us that the manager, armed with full authority to give and to take away points was able to

make sure that everyone worked his "fair" amount, while the manager who had to rely only on positive reinforcement had trouble with some of the boys who had already accumulated many points. Often, under a positive-reinforcement-only condition, these boys would not work, leaving more work for the other boys. On the other hand, when the manager had authority to fine, all the boys usually worked because no one could afford to lose points.

The results of Experiments I and II suggested that the effectiveness of the administrative procedure increased as the assignment of tasks and consequences became more individualized. The *purchased manager* (± 500) and *individual assignment-individual consequence* (± 500) conditions were equally effective and each contained individually assigned tasks and consequences. The *individual assignment-group consequence* (± 500) condition was less effective and the *group assignment-group consequence* (± 500) condition was least effective of these conditions. In other research, Herman and Tramontana (1971) found no difference between group and individual consequences for the disruptive behavior of two groups of preschool children, and Barrish, Saunders, and Wolf (1969), and Medland and Stachnick (1972) found group consequences to be effective in controlling disruptive classroom behavior within the context of a "good behavior game". Thus, it appears that group consequences are effective in some cases, but the present experiments indicated a clear improvement in behavior with individual consequences as compared to group consequences for behavior.

Experiments III and IV were carried out to examine the effects of various individual consequences for the workers and for the manager. Experiment IIIa showed that when the manager could make or lose points depending upon the performance of his peers, the manager's effectiveness was the same in the *purchased manager* ($+500$) condition as it was in the *purchased manager* (± 500) condition, but the effectiveness of the manager system was greatly reduced

in the *purchased manager* (*no points*) condition. In Experiment IIIb, however, the effectiveness of the manager system was only slightly reduced where the manager could neither make nor lose points but where he could still give or take away points for his peers' performance. Experiment IV showed that when there was no manager and the boys could only make points and not lose any in the *individual assignment-individual consequence* ($+500$) condition, the cleanliness measure was substantially reduced. These experiments indicate that when the workers could make or lose points, the manager and individual systems were equally effective, but when the workers could only make points and not lose any the manager was clearly more effective. (This increased effectiveness was probably due to the manager prompting and cajoling the youths during their performance of the task while the teaching-parents simply checked the completed task and assigned points.) The effectiveness of the manager system was substantially reduced when the manager could neither give nor take away points. These data seem to suggest that the effectiveness of each procedure depended both on the point consequences for worker performance and on the manager's supervision of the youths. The effectiveness of the manager system depended much less on the point consequences for the manager, since there was only a small reduction in effectiveness when the manager could no longer earn or lose points. These data, plus the fact that the boys often paid more points to purchase the manager position than they could earn by being manager, seem to indicate that other variables (*e.g.*, the opportunity to exercise some authority over one's peers) could have maintained much of the manager's behavior.

Experiments V and VII were conducted to determine the youths' preference for the various administrative arrangements. This was a very important component of this research. When working with clients in a treatment setting it is often easy to be so concerned with "doing a good job" that we overlook an extremely im-

portant variable: the clients' satisfaction with the treatment procedures. This is probably less of a problem in treatment settings that deal with clients who voluntarily submit to the procedures and who can leave anytime they are dissatisfied. In these voluntary programs, the clients thus maintain some (at least implicit) consequences for staff behavior that makes them unhappy. However, in treatment settings where the client is not a voluntary participant, the staff must develop other means of evaluating the clients' preferences because the clients can not simply drop out of the program or vigorously register their dissatisfaction with the treatment procedures. This problem is especially difficult when a treatment program simultaneously pursues two goals. On the one hand, the staff wants the treatment program to be effective in changing the behavior of the client so he can resume his role in society. On the other hand, the staff wants each client to be satisfied with the program. These two goals are often difficult to achieve, especially when a mildly aversive procedure must be used to change a client's behavior. However, by systematically comparing various procedures on both the effectiveness dimension and the preference or satisfaction dimension, it should be possible to discover treatment procedures that are both sufficiently effective in changing behavior and preferred by the client.

In this regard, the present findings have important implications for other programs. As noted earlier, the most commonly described administrative system in the token economy literature involved staff members directly supervising individual clients, an arrangement similar to the individualized systems described in these experiments. The present experiments showed that the peer manager system was as effective as the individual system and that the elected manager was most preferred by the boys in the program. It would appear to be advantageous to other token programs to employ an elected manager system that would maintain the effectiveness of the program, and perhaps increase

the level of satisfaction of the clients. As a bonus, a peer manager would also reduce the amount of direct supervision required of the staff, since some of the duties could be effectively carried out by the manager.

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Received 14 April 1971.

(Revision requested 20 October 1971.)

(Final acceptance 11 July 1973.)