TEACHING SELF-CONTROL TO SMALL GROUPS OF DUALLY DIAGNOSED ADULTS

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The present study examined the use of a progressive delay procedure to teach self-control to two groups of dually diagnosed adults. When given a choice between an immediate smaller reinforcer and a larger delayed reinforcer, both groups chose the smaller reinforcer during baseline. During treatment, progressive increases in work requirements for gaining access to a larger reinforcer resulted in both groups selecting larger delayed reinforcers. The results are discussed with respect to increasing cooperative work behavior and self-control.

DESCRIPTORS: choice, self-control, cooperation, delayed reinforcement, mental retardation, mental illness

A number of behavioral techniques have been used to teach self-control to humans (i.e., to choose delayed larger rewards over immediate smaller rewards). These include presenting both alternatives immediately and then gradually increasing the delay to the larger reinforcer (Schweitzer & Sulzer-Azaroff, 1988), providing the participant with a distracting activity to engage in during the delay (Mischel, Ebbesen, & Zeiss, 1972), or both (Dixon et al., 1998). Although these procedures hold promise for service providers, individual client interventions are often not possible because of inadequate numbers of staff. Typically, a single staff member must attend to a group of clients, manage their individual behavior problems, and attempt to deliver reinforcers when appropriate. Because many training activities occur within groups, it may be more advantageous to design behavioral interventions with that level of analysis in mind. The purpose of the present study was to teach self-control to two groups of individuals (3 members per group) using team contingencies. Specifically, a progressive delay/concurrent activity procedure similar to that of Dixon et al. was used for the whole group.

METHOD

Participants, Setting, and Measurement

Group 1 was comprised of 3 adult men. Greg was 29 years old, with mild mental retardation, schizoaffective disorder, bipolar disorder, and antisocial personality disorder. He took clozapine (400 mg/day) and valproic acid (1,500 mg/day). Peter was 26 years old, with mild mental retardation, intermittent explosive disorder, and borderline intellectual functioning. He took valproic acid (500 mg/day). Bobby was 26 years old, with mild mental retardation, psychotic disorder, and static enchalophathy. He took olanzapine (2.5 mg/day).

Group 2 was comprised of 3 adult women. Marsha was 27 years old, with moderate mental retardation and impulse control disorder. She took olanzapine (10 mg/day). Jan was 37 years old, with mild mental retardation and schizophreniform disorder. She took resperidone (2 mg/day), fluvoxamine (100 mg/day), and oxybutynin (15 mg/day). Cindy was 29 years old, with moderate mental retardation and schizoaffective disorder. She took valproic acid (1,000 mg/day), trihexyphenidyl (10 mg/day), and olanzapine (10 mg/day).

All experimental sessions were conducted in the participants' day-treatment facility. During each session, Group 1 participants were seated on the floor across from the experimenter in a large carpeted room. Group 2 participants were positioned on one side of a large table across from the experimenter in a meeting room apart from the other clients and therapists.

Discrete-trial choice and time of group task engagement served as dependent measures. Choice was defined as the group's unanimous selection of either the smaller or the larger reinforcer. Time of group task engagement was defined as each participant in the group manipulating the materials without disengagement for a period of over 5 s. Interobserver reliability was obtained for 25% of all sessions and was 100% for both dependent measures.

General Procedure

Research design. A multiple baseline across groups design was used to assess preference among smaller and larger reinforcers. Delays to larger reinforcers were increased across groups through a changing criterion design.

Token economy. Points were made available to participants in a concurrently operating token economy, and were redeemable for a number of different items of different point values ranging from soda pop (3 points) to cassette players (100 points). Participants were allowed to spend their points immediately after each session. The token economy system was selected because all participants had responded well to it in the past.

Natural baseline. The experimenter asked the groups to complete a cooperative task of sorting matched playing cards into piles by saying, "Your team's task here today is to sort these shuffled decks of playing cards into the appropriate piles. You will need to put all hearts with hearts, all clubs with clubs, etc. You will need to work together by asking your teammates to exchange or share cards. I will tell you when you can stop sorting." If the participants had no questions, the session began. A session was terminated when any 1 of the 3 participants was disengaged in the sorting task for 5 s.

Choice baseline. Each group's participants were asked to choose between a small immediate number of points (3) or a large delayed number of points (6). A delay of seven times the group's mean baseline sorting time was selected to be paired with the larger reinforcer to demonstrate a clinically significant increase in group work engagement. Mean baseline duration of engagement was 70 s and 110 s for Groups 1 and 2, respectively; thus, a sevenfold increase was 490 s and 772 s, respectively. Therefore, each group was asked, "Do you want 3 points now, or would you like 6 points after sorting the cards for Z minutes and seconds?" (with Z defined as the sevenfold increase in mean baseline value). If any of the group's participants chose the smaller reinforcer, all 3 were given only 3 points, and the session was terminated. If all group participants chose the larger reinforcer, the experimenter instructed them to begin sorting the cards. A session was terminated when the duration requirement was met or if any 1 of the group's participants was disengaged in the sorting task for more than 5 s.

Self-control training. The group was asked, "Do you want 3 points now, or would you
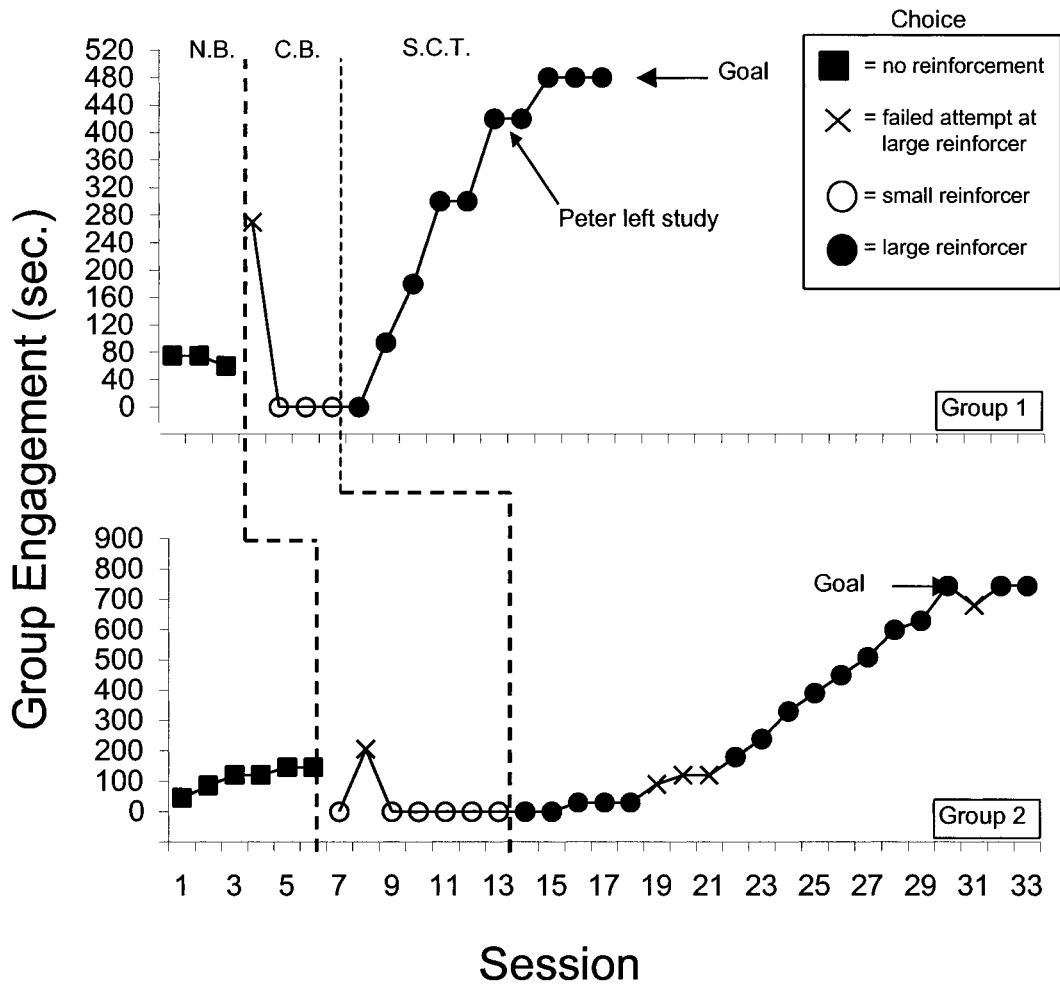
Figure 1. Number of seconds of engagement in the concurrent delay activity of cooperative card sorting during natural baseline (N.B.), choice baseline (C.B.), and self-control training (S.C.T.) for each group of participants. Filled circles represent performance at exactly the criterion level, and X data points represent the number of seconds of engagement below the criterion.

like 6 points after sorting the cards for Z minutes and seconds?" Z was initially 0 s for both groups during initial training sessions. Delay requirements (i.e., Z values) and corresponding group task engagement for each group were increased from 60 s to 90 s following one successful session. This condition remained in effect until the sevenfold increase in delay and engagement was obtained for each group (490 s and 772 s for Groups 1 and 2, respectively). Choice option, point delivery, and session termination criteria were identical to the choice baseline condition.

RESULTS AND DISCUSSION

Figure 1 shows performance during the natural baseline, choice baseline, and self-control training conditions for each group of participants. During baseline, number of seconds of cooperative card sorting was very low for both groups. During the choice baseline, both groups selected the larger re-

inforcer on one occasion, but failed to meet the duration requirement. Subsequent sessions in this phase resulted in choices for the smaller reinforcer. During the self-control training condition, the number of seconds of card sorting to gain access to the larger reinforcer increased sevenfold above natural baseline conditions for both groups. Following Session 12 of the self-control training condition for Group 1, Peter underwent a significant medication change and refused to continue participation; his group then continued without him.

These results support those of Dixon et al. (1998), in which a progressive delay procedure appeared to increase both self-control and a concurrent behavior emitted during the delay. The present study extended these findings to group contingencies. That is, participants were required to first select the larger delayed reinforcer and then engage in cooperative work behavior during the delay.

Arranging treatment programs for a group may be more practical for both staff and participants. First, the costs of group interventions are lower than individual programs. Second, providing the client with self-control may lead to increased opportunities for reinforcement (i.e., delayed larger rewards). Third, increasing cooperative work behavior in workshop settings results in greater productivity.

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