

POSITIVE BEHAVIORAL INTERVENTION IN CHILDREN
WHO WERE WARDS OF THE COURT ATTENDING
A MAINSTREAM SCHOOL¹

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Summary.—This report looked at the effects of treatment using contingency contracts and token economy procedures in three children, two 14 yr. and one 8 yr., who were wards of the court and attending a mainstream school. Students presented problems of adaptation to school, such as making constant noises with the mouth, hands, or pencil on the desk; frequently emitted raucous cries in the classroom; destruction of school resource materials; verbal aggression to classmates and teachers; verbal rejection of all academic work, refusing to do it, making negative comments prior to starting any school activity, in addition to lack of motivation for undertaking school activities. A 4-mo. individual treatment using contingency contracts and token economy behavioral procedures was implemented, with several follow-up sessions. The results indicated an adaptation of behavior to the school environment, confirmed by teachers, significantly reducing the incidence of insults, the destruction of school materials, and indolence during class sessions. These students are at high risk for social exclusion. Interventions have potential social importance in possible prevention of adult criminality, increasing academic achievement, and decreasing social exclusion.

Motivating students with behavioral problems who are wards of the court to participate in school activities is no easy task. Some studies have been published on various aspects of school-based learning (Putnam, Handler, & Luiselli, 2003), such as those on math (McGinnis, Friman, & Carlyon, 1999; Mayfield, & Chase, 2002), participation in *online* academic assignments (Pear & Crone-Todd, 1999), or intervention with children with ADHD (Northup & Gulley, 2001; Flood, Wilder, Flood, & Masuda, 2002), although there are more studies related to clinical problems for this population (Kahng, Boscoe, & Byrne, 2003). Few studies deal with children who are wards of the court.

There is some evidence that interventions based on behavioral modification can be successful (Ellis & Magee, 1994), but literature is limited as many studies are directed towards behaviors being maintained by socially mediated reinforcers, for example, tangible reinforcement, escape from instructions, or social attention. Approximately 5% of the studies were inconclu-

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sive, and a quarter did not consider the importance of social reinforcers (Iwata, Dorsey, Slifer, Bauman, & Richman, 1994; Hanley, Iwata, & McCord, 2003). Two of the intervention procedures which have received varied use in schools have been the token economy and contingency contracts (McGinnis, *et al.*, 1999; Van Den Wittenboer, Van Der Wolf, & Van Dixhoo, 2003). In the 1970s the token economy was extended widely across populations and behaviors in treatment, rehabilitation, educational, and community settings (Hobbs & Holt, 1976; Maloney, Harper, Braukmann, Fixsen, Phillips, & Wolf, 1976; Milan & McKee, 1976). Outcome research included large-scale program evaluations and comparative and combined treatment studies of the token economy (Kazdin, 1982). However, few studies employing token economy with wards of the court have been reported. Motivating such children can be difficult, and contingent token rewards are sometimes used to help (Clay, 2001; Musser, Bray, Kehle, & Jenson, 2001; Seegert, 2003; Wolfe, Dattilo, & Gast, 2003; Field, Nash, Handwerk, & Friman, 2004). Behavior therapists, marriage counsellors, social workers, teachers, and others in the helping professions, as well as parents and the children, have used contingency contracting to change successfully a wide range of behavior (Cooper, Heron, & Heward, 1987). In fact, some clinic (Silverman, Kurtines, Ginsburg, Weems, Rabian, & Serafini, 1999; Piane, 2000; Flood & Wilder, 2002), classroom (Allen, Howard, Sweeney, & McLaughlin, 1993; De Martini-Scully, Bray, & Kehle, 2000), and home contracting (Miller & Kelley, 1994) is the primary system used to manage the therapist-client relationship or the selection and completion of academic assignments or important interpersonal interactions. There are few studies employing contingency contracting with wards of the court (Welch & Holborn, 1988; Ruth, 1996).

In this study, the effects of intervention using a token economy procedure with one participant and contingency contracts with two other participants were examined. All three participants were wards of the court and attended a mainstream primary school. The participants presented problems of adaptation to school in addition to lack of motivation to undertake school activities. A multiple baseline design was used.

Frequency, intensity, and duration of several behaviors were assessed in this study: laying down on a desk in class, refusing to work, complaining repeatedly, destroying school resource material, verbal aggression, making noises constantly with the mouth or hands, frequently emitting raucous cries in the classroom, refusing to do the work, and making negative comments prior to starting school activities. The hypothesis was that, if a token economy or contingency contract were used, the assessed behavioral problems would be significantly reduced.

METHOD

Participants

Three students, who were wards of the court and attending primary school, participated in this study. The participants, their legal guardians, and teachers were informed and voluntarily agreed to participate.

S was a 14-yr.-old boy who, at the time of the intervention, was in the final grade of a public primary school. He came from a family with low socioeconomic status, had committed various thefts and robberies, and was in a residential care centre following a legal decision. He had never received a formal psychological diagnosis but frequently presented with the following behavioral problems: laying down on his desk in class, refusing to work, and complaining repeatedly that “something” hurt, on some occasions his head, on others his teeth, or his stomach, etc., with no organic cause. On other occasions, he lay on the table saying he “was tired”; he destroyed the school resource material, that is, he bit and broke pencils, erasers, pens, scribbled in the text books, the notebooks, and on the desk. He was several times per school hour verbally aggressive in the form of insults to his classmates and teachers.

F, 14 yr. of age, was in the last grade of a public primary school. He was in a residential care centre for repeated theft and robbery and was in a residential care centre following a legal decision. He had not received any type of specific psychological diagnosis but was sent for behavioral intervention because he presented with disruptive behaviors that seriously affected his learning performance, such as constantly making noises with his mouth or hands, or with pencils on the desk, and frequently emitting raucous cries in the classroom, simulating the meowing of a cat.

P, 8 yr. of age, was in a residential care centre as a result of being abandoned by his family, was placed in the centre following a legal decision, and attended a public primary school. He did not have a specific psychological diagnosis, but he presented with various disruptive behaviors manifested in a verbal rejection of all academic work he was presented, refusing to do the work, and making negative comments each time prior to starting any school activity, such as “not again . . .,” “I don’t want to do it . . .,” “always me . . .,” and so forth.

Measures

The behaviors that were the focus of this intervention were very similar in each of the three cases analyzed. For S, the following goals were established: (1) eliminate the behavior of lying on the desk in a sleeping position during school activities, reduce destructive behavior towards school materials, and eliminate the insults during his attendance at school. During seven 1-hr. sessions and following a multiple baseline model (Cozby, 2003), event

recording was used to record the frequencies of the Insulting and Destroying Material behaviors (Alberto & Troutman, 2005). A notation was made every time the student was engaged in the target behaviors within the sample-observation periods (10.00 to 11.00, and 11.30 to 12.30) in the classroom. In addition, interval recording was used to register the length of time he remained lying on the desk. All the sessions coincided with the special classes one of the authors regularly gave to the student five days per week.

In the case of F, the aims established were to eliminate or reduce the noises made with mouth, hands, and pencil, and eliminate or reduce the "meowing." Initially, event recording was used to record the response rates of both discrete behaviors during seven 1-hr. sessions following the same recording system as for participant S.

Finally, in the case of P the aim of the intervention was to reduce the verbal comments of opposition towards doing schoolwork. During seven 1-hr. sessions, the frequency of the negative comments prior to starting school activity was assessed, as well as engaged academic time and active student responding completed during the 1-hr. sessions (Greer, 2002).

Each participant was in a different classroom with different teachers. For all participants, two observers recorded each session. Interscorer agreement for the behavioural measures was assessed for all sessions by an assistant. Agreement scores by participant were calculated with a point-by-point agreement ratio, with averages of interobserver agreement of .83 for all dependent variables for all participants.

Two weeks after the last treatment session, teachers and children's supervisors were interviewed face-to-face to assess the ecological validity of the treatment, e.g., practical issues of contextual fit in the classrooms and within the student's living environment.

Procedure

Stimulus preference assessments.—Preference for stimulus reinforcers was assessed in accord with the procedures described by Northup, Gulley, Edwards, Fusilier, and Swanson (1999). The participants were presented pairs of stimuli and asked to choose the one that most interested them. Each participant was presented at least five different pairs of reinforcers. The stimuli used for their evaluation had been suggested by the teachers or were part of the boy's habitual routine. They were presented randomly and repeatedly so that there would be a clear choice, and those who had a percentage of choice larger than 80% were selected. So, for S, the choices were teacher's attention, good marks on his schoolwork, and a positive report to his tutor at the care centre. For F, the chosen stimuli were help with schoolwork, a positive report to his tutor at the care centre, and a session in the computer room for an hour a week. In the case of P, the chosen stimuli

were sweets, chocolates, a 5-min. break, a positive report to his tutor at the care centre, and football training with the school team.

Treatment

For S, a contingency contract was used following Hall and Hall's procedures (2000). A contingency contract gives the child a sense of justice and control, eliciting more compliance with the agreement. Such contracts especially make sense in children who are wards of the court, since the essential components of a contingency contract are unambiguous statements of (1) the target or problem behaviors, (2) the consequences and rewards for performing (or failing to perform) them, (3) the contingency between the behavior and consequences and (4) the time frame in which the contract will be enforced. By writing the agreements down with specific currencies and behaviors, the contract can be the final authority, which underscores the importance of stating the terms of the plan so there is no confusion. Signing the contract increases the commitment of the teacher and child to fulfill their roles as stated. The first contract lasted a full week, during which only the behaviors related to staying in his seat without lying on the desk were reinforced. The second contract was applied by introducing a response cost and increasing the demand level and lasted 3 wk. (see Fig. 1). A response cost is used to reduce unwanted behavior through removal of desired stimuli, such as the teacher's attention, negative report to the tutor at the care centre, or bad marks on schoolwork. In the third contract, the conditions were modified in accordance with the criteria established for this type of treatment (Hall & Hall, 2000). The total length of the intervention was 4 mo., in daily 1-hr. sessions during the school days, five days per week. Finally, eight follow-up sessions were conducted 2 mo. after the completion of the last contingency contract to see whether the benefits achieved during the treatment had been maintained.

For F, a contingency contract was implemented following the same criteria as with S. Four contracts were used, which were active for a total of 4 mo., five days per week, the content being modified in accordance with the standard criteria for this procedure (Hall & Hall, 2000; Alberto & Troutman, 2005). The first contract focused on involving F in the reduction of noise in class; in exchange, his teacher was committed to responding to his demands for help with individual academic work, recognizing his efforts in the form of better marks, a session in the computer room for 1 hr. a week, and informing his tutor at the care centre about his positive development. The second contract, the reduction in "meowing" in class, was also incorporated after 12 days of treatment in accordance with the multiple baseline design. This contract included two lists: List A with things that F had to do: reduce the noise with mouth, hands, and pencil, and reduce the "meowing."

Behavioral Contract

I (*Sonny*) and the teacher (*Carmen*), enter into the following behavioral contract in order to create order and harmony in class. This contract will be reviewed three weeks from the date of signing, at which time it is subject to either being continued or renegotiated.

By our agreeing to the terms and conditions of this behavioral contract, all parties understand and accept that they are bound by the contract and are not free to vary from the terms and conditions. I (*Sonny*) agree that I will not:

1. Lie down on my desk in class
2. Refuse to work
3. Complain repeatedly that "something" hurts, head, teeth, stomach, and so forth, with no organic cause
4. Destroy school resource material, such as biting and breaking pencils, erasers, pens, scribbling in the textbooks, the notebooks, and on the desk
5. Insult my classmates and teachers

I (*Sonny*) agree that should I violate the contract, I will be choosing to suffer the following consequences:

1. No individual teacher attention for one day
2. A bad mark on my schoolwork
3. A negative report to my tutor at the care centre

I (*Carmen*) agree that if Sonny behaves appropriately, in addition to escaping any of the negative consequences outlined above, he will have earned the right to the following privileges:

1. 10 minutes of individual teacher attention
2. A good mark on his schoolwork every day
3. A positive report to his tutor at the care centre

Both parties acknowledge that this contract is entered into voluntarily and that the terms and conditions will be respected. If the behaviors are accomplished, the teacher agrees that Sonny will receive privileges. Sonny agrees that if he fails to behave appropriately privileges will not be allowed.

The teacher Carmen

Sonny

Date

FIG. 1. Second contingency contract for S

No more than three noises and two meows would be allowed through 1 hr. of class each day. List B included rewards: teacher responding to his demands for help with individual academic work, recognizing his efforts in the form of better marks, and informing his tutor at the care centre about his positive development every day. Contracts three and four were introduced on Days 24 and 36 of treatment, respectively. The length of the treatment extended over 14 school weeks in daily 1-hr. sessions during the school day, five days per week. After 2 mo. without intervention, 12 follow-up sessions were conducted to check the maintenance of benefits.

For P, a program of token economy was implemented, following Aylon's model (1998). Three aspects define a token economy. First, behaviors to be reinforced are identified: frequency of the negative comments prior to starting a school activity, as well as engaged academic time and active student responding completed during the 1-hr. sessions. Second, a medium of

exchange (token) is selected. Third, back-up reinforcers are provided that can be purchased with the token (Cooper, *et al.*, 1987). Rectangles (4×3 cm) of colored card stock were used, with reinforcers such as help, breaks, sweets, participation in football training, and positive reports to his tutor at the care centre. The point consequences ranged between 2 points for a 5-min. break to 12 points for participation in sports training. The reinforced behaviors were undertake the daily reading set in the special class and complete a quiz on the subject of the reading (1 point). If, in addition to this, he undertook a complementary academic activity, he obtained 2 points; 3 points were obtained by undertaking two complementary activities. The days to exchange the tokens for the back-up reinforcers were Wednesday and Friday of each week. Both the frequency of the complaint behaviors and the number of tasks completed during the sessions were recorded. The treatment lasted 11 weeks, in daily 1-hr. sessions during the school day, five days a week. Two months after the completion of the procedure, eight follow-up sessions were conducted.

RESULTS AND DISCUSSION

Fig. 2 shows the numbers of the disruptive behaviors during the behavioral analysis sessions for S. The numbers of the three disruptive behaviors were maintained throughout baseline sessions. The mean numbers of behaviors that were the focus of treatment during the sessions were recorded. Follow-up was conducted after a wait of two months and during eight observation sessions. The results indicate an improvement in S's adaptive behavior to school, confirmed by his teacher, significantly reducing the incidence of insults, the destruction of school material, and indolence during class sessions. Similar results can be seen in Fig. 3, which shows the progress recorded for F in the two disruptive behaviors which were treated. The treatment for the two disruptive behaviors, irritating noises and meowing, was maintained during the sessions with positive results, achieving stability after seven follow-up sessions 2 mo. after withdrawing the intervention. In this case, face validity of the intervention was confirmed by reports from F's teacher about his adaptation to school.

A token economy procedure was used with P and the data regarding his development during baseline, intervention, and follow-up are presented in Fig. 4. There was a reduction in the number of complaints during the sessions and an increase in the number of school tasks in which he actively participated. The system of reinforcements improved his attitude towards schoolwork, as P's teacher commented during the follow-up phase, where it was observed that the behavior was maintained at acceptable levels as confirmed by his teacher.

It is interesting to remark that the 1-hr. per day treatments could have

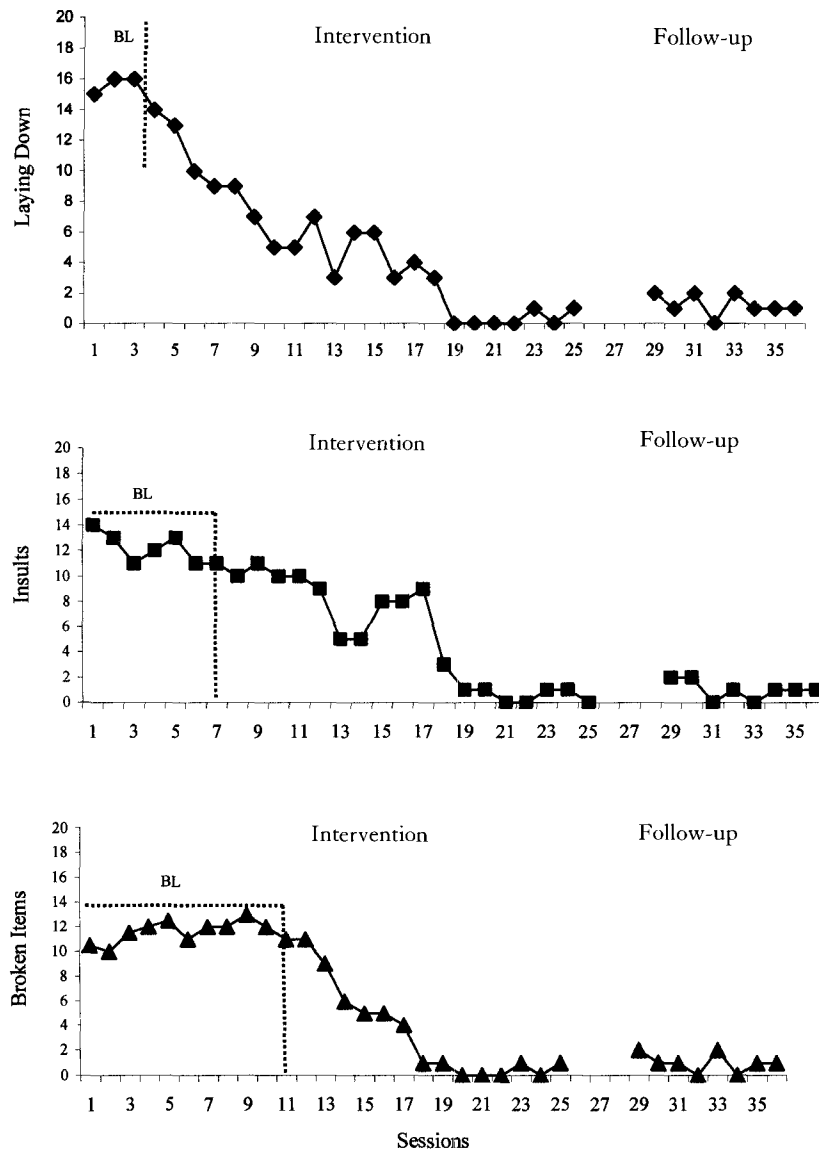


FIG. 2. Behaviors for S, repeated treatment, and follow-up sessions. Target behaviors are expressed as the mean of each set of three sessions (BL: Baseline).

been supplemented to have a broader effect. These students have a high risk of exclusion, and such procedures have potential social importance in possible prevention of adult criminality, failure to achieve academically, social

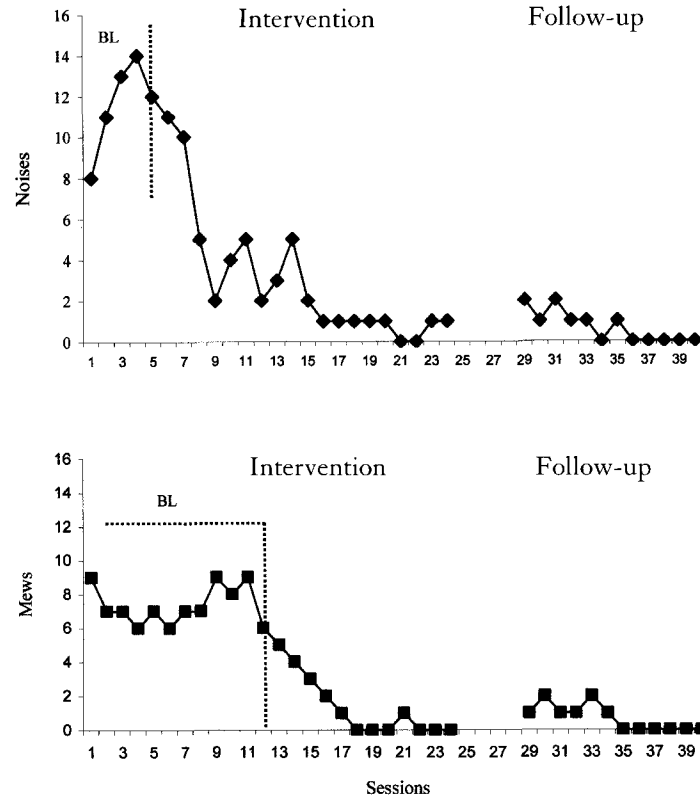


FIG. 3. Behaviors for F, repeated treatment, and follow-up sessions. Target behaviors are expressed as the mean of each set of three sessions (BL: Baseline).

exclusion, and so forth (Donnellan, Trzesniewski, Robins, Moffitt, & Caspi, 2005; Tuvblad, Eley, & Lichtenstein, 2005). Data for the three cases show similar patterns in the reduction of disruptive behaviors. These are modified in accordance with the maintenance of the reinforcement conditions. Reduction in some of the disruptive behaviors of each of the subjects showed a variation of 100% (cf. Figs. 2 and 3). It has been suggested that the procedures used here are sensitive to small changes that could compromise the efficacy of this type of intervention (Alberto & Troutman, 2005). However, as Vollmer, Marcus, and LeBlanc (1994) have suggested, when a behavioral analysis is undertaken prior to intervention, effective treatment can be implemented, given that the variables responsible for the maintenance of the behavior can be identified and controlled to reduce the likelihood that the disruptive behavior could be a function of the environment.

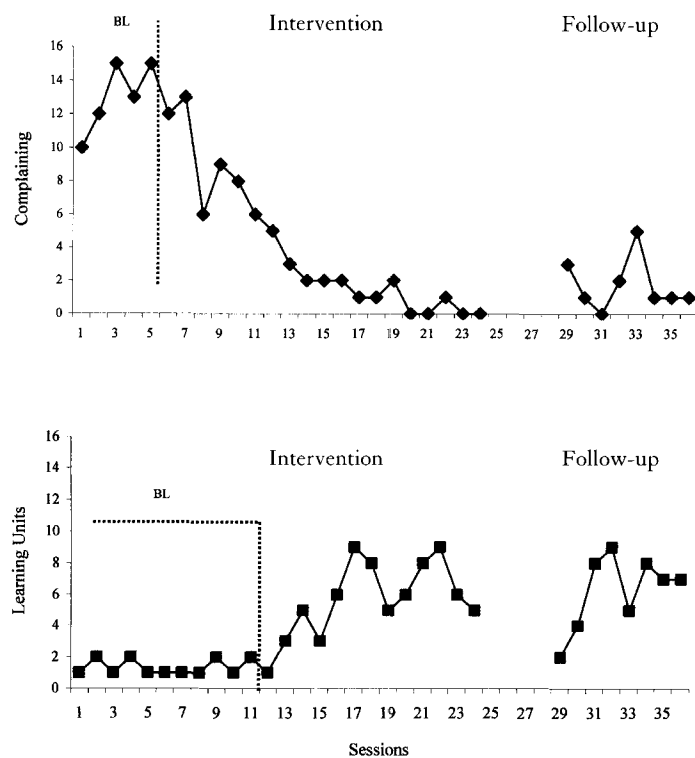


FIG. 4. Behaviors for P, repeated treatment, and follow-up sessions. Target behaviors are expressed as the mean of each set of three sessions (BL: Baseline).

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