ROLE REVERSALS: AN ANALYSIS OF THERAPEUTIC EFFECTS ACHIEVED WITH DISRUPTIVE BOYS DURING THEIR APPOINTMENTS AS PEER MONITORS

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Three 7-year-old boys with histories of negative interactions were appointed to monitor individual classmates during daily noon recess. As monitors, the boys awarded points to their classmates for playing appropriately and, on rare occasions, withdrew a point for negative interactions. The three boys immediately decreased their own rates of negative interactions during the sessions in which they were appointed as monitors. Two of the boys concomitantly increased their rates of positive interactions. Their reductions in negative interactions were not maintained during reversals and did not clearly generalize to the morning or afternoon recess periods. Subsequent appointment of the boys as peer monitors during the morning recess produced similar improvements in their behavior. Results suggest that appointment to the role of peer monitor may itself function as an intervention.

DESCRIPTORS: peers, social skills, generalization, playground behaviors, group contingencies

The use of peers as behavior change agents has become increasingly popular in applied behavior analysis. Typically, able classmates are trained to intervene with children who are socially or academically deficient (cf. Strain, 1981). In addition to desirable changes noted in the children who receive the intervention, improvements have been observed occasionally in the children who implement the intervention (e.g., Dineen, Clark, & Risley, 1977; Dougherty, Fowler, & Paine, 1985; Drabman, 1973).

For instance, in a study by Dougherty et al. (1985), the negative interactions of four mildly retarded children were reduced to near zero rates during daily morning and afternoon recesses in which these children monitored a mildly retarded classmate's negative peer interactions. The positive effects noted with the four monitors were replicated

with the classmate when the boy was appointed to monitor another classmate during the previously untreated noon recess. Sample data collected with the four monitors during the morning and afternoon recesses suggested that some of them may have generalized their improvements to sessions in which they were not assigned to monitor. Our research sought to determine if appointment to the role of intervention agent will routinely promote positive behavior changes in children with problem behaviors and if these changes are likely to maintain or generalize to untreated sessions or settings.

METHOD

Subjects

Three 7-year-old boys, enrolled in a regular first grade class, were selected by their teacher for participation because they frequently engaged in disruptive behavior during recess. Screening observations verified the teacher's report. Chuck, who previously attended a program for children with severe behavior problems, was assigned to his current school so that he could attend a resource room for social adjustment and learning problems, if needed. Bob and Adam were slow learners and received special services for approximately 30 min

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each day; they participated in regular first grade activities the remainder of the day.

Nineteen classmates, also enrolled in the regular first grade, participated in the study. Parental consent was obtained for all children in the classroom.

Settings

Screening, baseline, and intervention observations took place on the playground during the morning, noon, and afternoon recesses. The playground was an asphalt area approximately 2,000 m² in size containing permanent equipment typical of most playgrounds. During recess, children enrolled in kindergarten through fourth grade were on the playground, along with two to four supervising teachers. Morning and afternoon recesses ranged from 15 to 20 min and noon recess ranged from 25 to 35 min.

Measurement Systems

Data were collected 5 days per week during the noon recess and approximately 3 days per week during the morning and afternoon recesses. One observer (from a pool of four undergraduate and three graduate students) was assigned to each child throughout the entire recess. The observers remained approximately 2 to 3 m from the child under observation. Observer training occurred on the playground prior to the onset of the study. Practice data were collected until the seven observers reached a minimum reliability criterion of 80% agreement for all child behaviors.

Eight categories of behavior were observed; occurrences were scored in consecutive 6-s intervals on precoded data sheets. Behavior categories were patterned after the Walker, Street, Garrett, Crossen, Hops, and Greenwood (1978) study and, with the addition of prompts, were exactly the same definitions as those used in the Dougherty *et al.* study (see Dougherty *et al.*, 1985, for complete definitions). The child behaviors included negative interactions with peers, positive interactions with peers, rule infractions, and negative behaviors from peers toward the observed child. Recorded adult and monitor behaviors included prompts to im-

prove behavior and praise. Scoring denoted whether the prompts and praise were delivered by the monitor to a classmate or by an adult to the monitor. Also scored was the implementation of program components, which included the monitor's delivery of point awards and point fines and the consultant's use of time-out (restriction of a child to a corner of the playground for 3 to 5 min).

Each category of behavior could be scored once within the 6-s interval, with one exception: negative interactions with peers were given priority over positive interactions with peers. Occurrences per minute of negative interactions was the primary dependent variable in this study. The minimum occurrences per minute measure, originally used by Walker *et al.* (1978), is based on the number of negative interactions scored in 10 consecutive 6-s intervals (*i.e.*, 1 minute). This conservative estimate reflects a minimum rate in that only one negative interaction with a peer is scored in an interval. Minimum occurrences per minute were calculated by dividing the number of intervals in which negative interactions were scored by the number of minutes observed.

Reliability Assessment

We collected 99 reliability assessments; these assessments were conducted for an entire recess period. The assessments were distributed evenly across the three subjects and across the three daily recess periods. Interobserver agreement was calculated by dividing the sum of observer agreements of occurrence (or nonoccurrence) by the sum of observer agreements plus disagreements of occurrence (or nonoccurrence) and multiplying by 100.

Mean agreement by condition for the occurrence and nonoccurrence of each child behavior (positive and negative interactions with peers, negatives from peers, and rule infractions) ranged from 81% to 100%, and from 86% to 100%, respectively. Mean agreement scores ranged from 83% to 90% for the occurrence of peer monitor behaviors (praise and prompts), and 71% to 100% for the occurrence of consultant behaviors (praise and prompts). Mean agreement for program implementation was above

90% for point awards and time-out, but was 50% for point loss, due to the very low occurrence observed during reliability checks (1/2).

Experimental Design

A reversal design (A-B-A-B) was used during the noon recess. Effects were subsequently replicated with Adam and Chuck in a multiple baseline design across noon and morning recesses. Generalization of treatment effects was assessed through an extended baseline in the morning and afternoon recesses. The number, sequence, and types of intervention conditions differed somewhat for each child.

Experimental Conditions

Baseline. No experimental procedures were in effect during the baselines for morning, noon, or afternoon recesses. All children were under the usual supervision by teachers on the playground. Teachers sent children to time-out if they were involved in serious or repeated rule infractions (e.g., leaving the playground) or in aggressive interactions with peers (e.g., fighting, stealing equipment).

Peer-monitor condition. The three subjects served as peer monitors for their classmates. Adam, Bob, and Chuck first received 30 min of individual training from the program consultant. The training, developed by Dougherty et al. (1985), focused on identification of appropriate and inappropriate playground behavior, opportunities for point awards, and reasons for point fines. The boys also rehearsed point-award and point-fining procedures. Classwide social skills training was provided during two 30-min sessions prior to the introduction of the first appointment as peer monitor condition (sessions 19 and 29).

Following his appointment as peer monitor, each boy was assigned one classmate (point buddy) per day to monitor during noon recess. Classmate assignments changed each day. During the first appointment condition, we chose six children to be monitored who received high scores on sociometric ratings (see Dougherty et al., 1985) completed by all members of the class, and by teacher report,

exhibited good playground behavior. In subsequent appointment conditions, we rotated the assignment of point buddy through all children in the class (excluding the three subjects, who never monitored each other). Children were always given an opportunity to decline an assignment as point buddy.

At the beginning of each recess, the consultant briefly reviewed the rules for monitoring and for appropriate play with the peer monitors and their point buddies. The monitors were told to check with their buddies every 5 min and to model good play behavior throughout the recess. The consultant remained on the playground during recess throughout the appointment condition, occasionally prompting the monitors to check on their buddies. The prerecess review session and number of prompts to the monitors were reduced gradually across the appointment conditions and were eliminated during the final condition of the noon recess for Adam and Chuck.

During recess, a peer monitor could award a total of four bonus points for good behavior to an assigned buddy. In addition, the assigned buddy began recess with two regular points that could be withdrawn by the monitor if the buddy engaged in negative behavior. The peer monitors kept track of the point awards and fines by using two strands of movable beads, for bonus and regular points, respectively, that were attached to their coats or belts. Only one point could be awarded or withdrawn for any given action.

At the end of the recess, the consultant collected the point beads from the monitors and posted the number of points the buddies had earned on a large poster in the classroom. The three point buddies were praised for earning bonus points and for not receiving point fines. The monitors also received feedback regarding the quality of their monitoring and their play behavior. Feedback was eliminated for Adam and Chuck during their second noon appointment condition. A 5-min small-group activity was available each day to the point buddies who met criterion (two or three bonus points and no more than one point fine). Their

monitors were invited to participate in the reward. After the first appointment condition, small-group rewards were replaced with stickers. Recess points also were accumulated toward a class reward available at the end of the week (e.g., popcorn, film-viewing). Weekly rewards were retained throughout the study.

Adult-monitor condition (Bob and Chuck). The original RECESS program developed by Walker *et al.* (1978) was implemented in this condition; an adult monitored the target child and emphasized consequences for negative behavior. Four points were available for point fines and two bonus points were available for appropriate interactions. When Bob and Chuck met criterion (one bonus point and three regular points), they could exchange their points for the daily small-group reward; they also accumulated points for the weekly class reward. This condition was implemented with Chuck during noon recess prior to the appointment as peer monitor condition and with Bob as a final intervention.

Monitored-by-peer condition. We implemented this condition only with Bob, following his second appointment as peer monitor, in an effort to reduce his negative interactions further. Children in the class served as monitors for Bob. We again chose the six children who scored highest on sociometric ratings to serve as monitors for Bob; daily appointments rotated across these children. Children serving as peer monitors for Bob also underwent the 30-min training program for monitoring. The same procedures used during the appointment as peer monitor condition were in effect for this condition.

RESULTS

Baseline and intervention rates of the three subjects' negative interactions with peers are presented in Figures 1, 2, and 3. Appointment as peer monitor immediately reduced the rate of negative interaction exhibited by the three children during noon recess. Adam's rate decreased from a baseline average of 0.63 to 0.07 per min; likewise, Bob's rate dropped from a baseline average of 0.71 to

0.11. Chuck's initial baseline rate of 1.0 negative interactions per minute was nearly eliminated during the adult-monitor condition that preceded his appointment as peer monitor; his negative interactions, however, resumed in the second baseline and were subsequently reduced to an average rate of 0.16 per min during the first appointment as peer monitor condition.

When the children's appointments as peer monitors were discontinued, their rates of negative interactions gradually increased to levels near or comparable with their prior baselines. Reintroduction of peer-monitor appointments quickly reduced Adam and Chuck's rates of negative interaction to previous intervention levels, but did not reduce Bob's rate to earlier levels. Brief increases in Adam and Chuck's rates of negative interaction occurred following the withdrawal of consultant prompts and following the withdrawal of feedback provided by the consultant at the end of recess.

Consultant prompts and feedback were not withdrawn from Bob due to his higher and more variable rate of negative interactions. Instead, a second intervention, in which Bob was monitored by classmates, was introduced during noon recess and alternated with sessions in which he was appointed to monitor; however, his rate of negative interactions remained variable, averaging approximately 0.30 per min in each of the alternating interventions.

Figures 1, 2, and 3 also present the boys' rates of negative interactions for morning and afternoon recesses. Substantial reductions in Adam and Chuck's negative interactions during morning recess were produced only when they were appointed as peer monitors in the morning. Bob's negative interactions were reduced somewhat in the morning after he was appointed as a peer monitor and was monitored by peers; his negative interactions were subsequently eliminated during the final 3 days when he was monitored by the consultant. The three boys did not generalize improvements to the afternoon recess following intervention in the morning recess.

Three other child behaviors were analyzed: rule infractions, negative actions from peers, and posi-

Figure 1. The average minimum occurrences per minute of Adam's negative interactions during noon, morning, and afternoon recesses. Arrows in the baseline conditions represent the onset of condition changes in the noon recess.

tive interactions with peers. In general, substantial reductions in rule infractions were achieved during the first appointment as peer monitor for Adam, Bob, and Chuck. Mean rule infractions decreased from nearly 1 per min to less than 0.20 per min. As with negative interactions, rule infractions once again approximated initial baseline rates during the return to baseline condition. Reappointment as peer monitors subsequently reduced Adam and Chuck's infractions ($M = 0.34$ and 0.36 , respectively), but not to the very low levels achieved during their first appointment condition. Interestingly, reappointment did not reduce Bob's rule infractions; he averaged 0.81 per min during the second appointment condition.

Negative behaviors from peers to Bob and Chuck decreased during the first appointment condition from baseline rates averaging approximately 0.25 per minute to rates averaging 0.09 and 0.17, respectively; likewise, negative actions from peers to Adam decreased from baseline averages of 0.35

to 0.12. Negative interactions from peers increased to former baseline levels when appointments were withdrawn; however, these rates were reduced once again during the second appointment condition.

Finally, Bob and Chuck nearly doubled their rates of positive interaction during their first appointment condition. Bob's positive interactions increased from a baseline average of 4.60 per min to 8.35, and Chuck's increased from 5.0 per min to 9.10. Interestingly, both boys maintained these increases through subsequent reversals and interventions. No change was noted in Adam's rate of positive interaction, which was consistently high throughout the study.

The average daily rates of consultant prompts and praise for noon recess were reduced systematically across intervention phases. During the first appointment condition, Adam averaged 3 to 4 prompts per recess, Bob averaged 11 prompts, and Chuck averaged 1 to 2 prompts. All prompts were withdrawn from Adam and Chuck in the second

Figure 2. The average minimum occurrences per minute of Bob's negative interactions during noon, morning, and afternoon recesses. Arrows in the baseline conditions represent the onset of condition changes in the noon recess.

appointment condition and prompts to Bob were reduced to approximately one per recess. Likewise, praise, which was provided approximately two to three times per recess for each boy during the first appointment condition, was provided far less frequently (e.g., once or twice per week), in the second appointment condition. During the morning appointment as peer monitor condition, consultant prompts and praise likewise were delivered at a low rate for the three boys; in fact Adam and Chuck's prompts were discontinued entirely after 1 week. Bob continued to receive approximately one prompt and praise per session.

DISCUSSION

Our study supports the preliminary findings of Dougherty *et al.* (1985) that children with severe behavior problems can reduce their own problem

behaviors when they are assigned to monitor classmates for better behavior. The average rates of negative interactions for Adam, Bob, and Chuck during the first appointment condition fell within the range of negative interactions designated as acceptable by Walker, Hops, and Greenwood (1981), who collected normative data on elementary school playgrounds with 30 children.

Not surprisingly, treatment gains were limited to sessions and settings in which the boys were appointed to be peer monitors (or in which they received monitoring from adults or peers). Perhaps several components of the intervention program (e.g., point beads, assignment of point buddies, and consultant prompts) exerted sufficient stimulus control to limit the generalization and maintenance.

We attempted to decrease adult involvement in this intervention by reducing the number of con-

Figure 3. The average minimum occurrences per minute of Chuck's negative interactions during noon, morning, and afternoon recesses. Arrows in the baseline conditions represent the onset of condition changes in the noon recess.

sultant prompts, praise, and feedback. We successfully eliminated adult support during recess for Adam and Chuck, but continued to provide support for Bob in the form of one or two prompts per recess and feedback at the end of recess. This is a marked reduction in adult support compared to many social interaction programs in which peers are trained to intervene with a problem classmate (cf. Carden-Smith & Fowler, 1984; Strain & Odom, 1986). Although we were able to limit adult interaction on the playground, we did not discontinue other forms of adult involvement in the program. The teacher or consultant continued to assign buddies each day, to distribute and collect the point beads, to post the daily points, and to arrange the daily and weekly rewards. The extent to which children could successfully assume some of these roles remains to be examined.

The extent to which the point awards delivered

by the three boys were contingent on their point buddies' actual behavior was not examined systematically in this study. The boys rarely delivered a point fine and typically delivered two to four point awards per recess. The degree to which the point awards may have assisted the monitors in attending to their classmates' positive behavior and the degree to which this attention may have influenced the changes in the monitors' rate of positive and negative interactions should be assessed in future research.

In summary, the appointment of problem children to positions of authority or status merits continued investigation as a viable treatment option. Results obtained by Dougherty et al. (1985) and those obtained here with Bob and Chuck suggest that adult monitoring is the more effective procedure for eliminating negative behavior. Even so, the results also demonstrate that the appointment

of problem children to the role of monitor will reduce their negative behavior to acceptably low rates. The clinical implications of reversing the traditional treatment roles from treated to treater are intriguing.

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