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NONCONTINGENT PEER ATTENTION AS TREATMENT FOR DISRUPTIVE CLASSROOM BEHAVIOR

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A functional analysis isolated peer attention as the primary maintaining variable for disruptive behavior displayed by a student with attention deficit hyperactivity disorder. Using a brief reversal design, noncontingent reinforcement was then shown to reduce disruptive behavior relative to the peer attention condition. Implications for assessing behavior disorders in mainstream school settings are discussed.

DESCRIPTORS: attention deficit hyperactivity disorder, functional analysis, noncontinent reinforcement

Results of a functional analysis are often linked to treatment by directly changing the contingencies for problem behavior via extinction, differential reinforcement, or noncontingent reinforcement (NCR). One of the most commonly used interventions derived from a functional analysis, NCR (Vollmer, Iwata, Zarcone, Smith, & Mazaleski, 1993), has not yet been evaluated with typically developing students in the regular classroom context. The purposes of this study were (a) to replicate functional analysis procedures described by Northup et al. (1997) to assess the disruptive behavior exhibited by a child with attention deficit hyperactivity disorder (ADHD) and (b) to evaluate the effects of NCR in a simulated classroom setting as a point of comparison to the contingent peer-attention condition.

METHOD

Participant and Setting

Sam was an 8-year-old boy who had been diagnosed with ADHD and who functioned within the above-average intellectual and achievement range. Sam was prescribed 20 mg Adderall® twice daily throughout the course of the study. Sam's mother referred him to a clinic-based summer academic program that included daily social skills discussions, academic tutoring, and the functional analysis sessions described below.

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Recording and Reliability

Direct observation of disruptive behavior was conducted from behind a one-way mirror by a trained undergraduate student using a 10-s partial-interval recording procedure. *Disruptive behavior* was defined as talking out, playing with objects, or getting out of seat during an interval (Northup et al., 1997). A second observer simultaneously but independently scored disruptive behavior during 38% of the sessions. Kappa coefficients of agreement across these sessions ranged from .66 to 1.00 (M = .86).

Procedure

Disruptive behavior was measured during 10-min sessions while Sam worked independently on either easy math facts (approximately 100% accuracy) or difficult math facts (less than 70% accuracy), based on a prior assessment. For each session, Sam was asked to stay in his seat, remain quiet, and complete as much work as possible.

Functional analysis. A series of conditions

was presented in a multielement design according to the procedures outlined in Northup et al. (1997). During teacher attention, the student worked alone on easy tasks. The teacher ignored all responses except disruptive behavior, which was followed by reprimands or comments such as "You really need to get this work done." During peer attention, the student was presented with easy work and was seated across from a peer confederate, who was assigned work but was privately instructed to "help" Sam by "saying something to him when he gets out of his seat, plays around or talks out." Confederate responses typically began with statements such as "You're not working!" but quickly transformed into more natural responses such as talking, laughing, or imitation. During escape, Sam worked on difficult material while seated alone. Contingent on each occurrence of disruptive behavior, the teacher removed the task, said "time out," and turned away from the student. After 20 s, the task was returned and Sam was told to "please get back to work." Intervals during the brief escape periods were not used in calculating session data.

Noncontingent reinforcement was tested using a brief reversal design. The context was the same as during the peer attention conditions; however, the peer confederate was not told to respond to Sam's disruptive behavior. Also, at 90-s intervals, a timer bell was sounded and students were allowed to "play with each other for 30 seconds." After 30 s, students were returned to their desks and were asked to get back to work. Although NCR procedures usually contain an extinction component, the peer confederate continued to provide attention following disruptive behavior. Intervals during the brief play periods were not used in calculating session scores.

Procedural integrity checks were conducted by calculating the probability of receiving the programmed consequence during the same or next 10-s interval, following disruptive behavior. The mean probabilities for the teacher attention and escape conditions were .75 and 1.0, respectively. The probability of obtaining peer attention contiguous with disruptive behavior was equal for the peer attention and NCR conditions (M = .87).

RESULTS AND DISCUSSION

The top panel of Figure 1 depicts Sam's level of disruptive behavior during all conditions. The highest levels during the functional analysis were observed during peer attention, which ranged from 60% to 100% (M = 86%), but decreased substantially during the NCR conditions to a mean of 37% (range, 11% to 66%). An immediate increase was observed upon reversal to peer attention. The lower panel shows a minute-by-minute plot of the percentage of 10-s intervals containing disruptive behavior during the final peer-attention session of the functional analysis, all NCR sessions, and the brief reversal session. The minute-by-minute data more clearly show a suppressive effect of NCR.

These findings contribute to an emerging methodology for assessing behavior disorders in normally developing children. The assessment replicated the previous work of Northup et al. (1997). Further, Sam's disruptive behavior was reduced during the NCR conditions even though the likelihood of subsequent attention was equal to the peer attention conditions. This finding supports recent studies suggesting that NCR at times alters the motivation (e.g., establishing operation) of a target behavior and does not always depend on extinction (Lalli, Casey, & Kates, 1997).

The functional analysis was limited insofar as the peer attention condition was the only test condition in which a peer was present. Thus, some topographies of disruption were more likely to occur merely as a func-

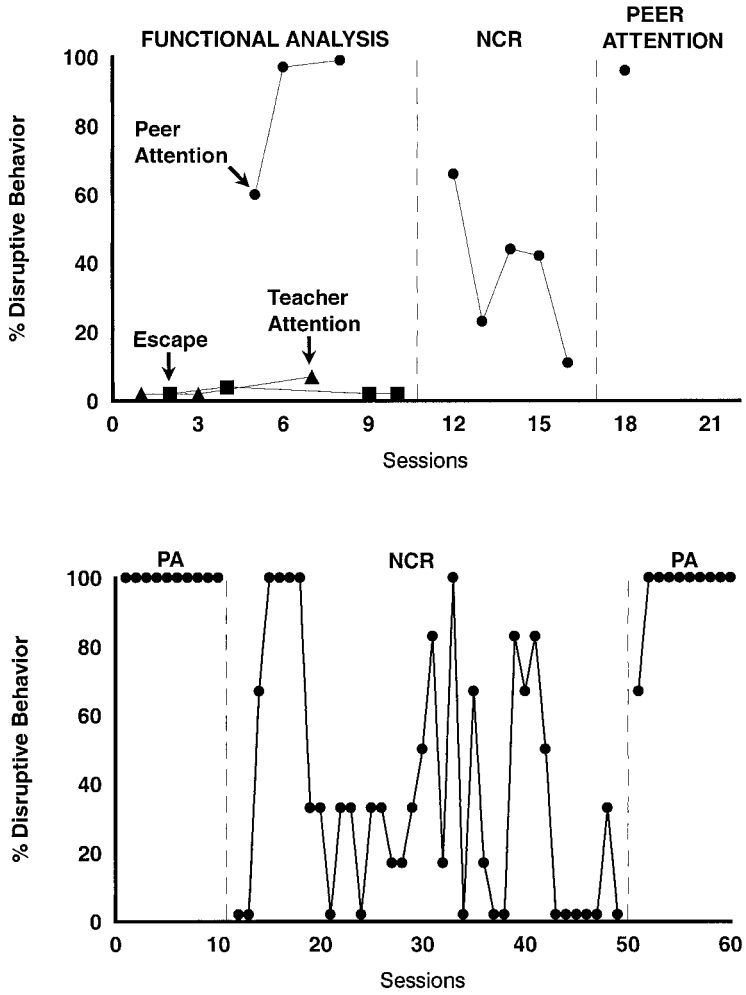

Figure 1. The top panel shows levels of disruptive behavior across functional analysis, noncontingent reinforcement (NCR), and reversal (peer attention) conditions for Sam. The lower panel displays minute-by-minute plots of disruptive behavior during some contingent peer attention (PA) and NCR sessions.

tion of peer presence (e.g., talking out). However, the peer was also present continuously in the NCR condition, so the presence of a peer cannot account for differences in response rates in peer attention versus NCR conditions. Nonetheless, a challenge for future research is to develop escape, teacher attention, and control conditions with peers present. Such an arrangement would isolate the evocative and reinforcement effects of peer presence.

Although these preliminary findings are encouraging, program demands prevented a more rigorous design and limited the number of sessions in some phases. Also, the 90-s fixed-time schedule would be too frequent for teachers to provide attention in a regular classroom. Despite these limitations, this study may provide a basis for evaluating more practical solutions to common classroom behavior problems.

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