

*THE USE OF NONCONTINGENT ESCAPE TO
REDUCE DISRUPTIVE BEHAVIORS IN
CHILDREN WITH SPEECH DELAYS*

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Noncontingent escape (NCE) was used to reduce disruptive behavior in 3 children during regularly scheduled speech therapy sessions. Results showed rapid decreases in disruptive behavior and accompanying increases in compliance across children. Findings suggest that speech therapists with little expertise in behavior analysis can effectively implement NCE.

DESCRIPTORS: noncontingent escape, disruptive behavior, compliance, speech therapy

Noncontingent escape (NCE), the removal of aversive stimulation on a response-independent schedule, has emerged as a promising treatment for escape-maintained problem behavior (Vollmer, Marcus, & Ringdahl, 1995). The NCE treatment package, which typically involves fixed-time (FT) escape, extinction, and schedule thinning, has not been examined when used in a clinical context by service providers who have little expertise in behavior analysis. Further, although the FT component of NCE should be relatively easy for care providers to implement, the schedule-thinning component used by Vollmer et al. is rather complicated. This study extends research on NCE by teaching speech therapists to implement NCE during regular sessions and by simplifying the manner in which the schedule is thinned.

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METHOD

Participants and Setting

Three 4-year-old children (2 boys and 1 girl) and their respective speech therapists participated. All children, who had received therapy for at least 7 months prior to this study, engaged in high rates of disruptive behavior during training sessions. Neal had been diagnosed with pervasive developmental delay. Amy and Paul had been diagnosed with autism. All therapists possessed master's degrees in speech and language pathology, and their experience ranged from 2 to 25 years. Sessions took place at a speech clinic in rooms (3 m by 4 m) containing a table, chairs, and instructional materials. Clinic sessions were usually scheduled in 30-min blocks. For various reasons (e.g., participant late to session, therapist behind on schedule), session length varied. Baseline consisted of 10-min samples from regular therapy sessions, and treatment sessions lasted 17 min on average. Sessions were usually conducted 2 days per week.

Recording and Reliability

Dependent variables included the percentage of 30-s intervals with (a) disruptive behavior and (b) compliance. Disruptive behaviors included attempting to leave the

chair, falling to the floor, kicking over the chair, climbing on or under the table, running to the door (Neal), screaming, crying (Amy and Paul), hitting, and making inappropriate noises (Paul). Compliance was defined as correct responding within 5 s to a therapist's instruction without physical guidance while not engaging in any disruptive behavior. All sessions were videotaped and scored using continuous 30-s intervals in which disruptive behavior and compliance were recorded on an occurrence or nonoccurrence basis. A second observer independently scored the videotapes during 46% of the sessions. The number of agreements (interval by interval) was divided by the number of agreements plus disagreements and multiplied by 100%. Interobserver agreement averaged 100% for disruptive behavior and 80% for compliance. Procedural integrity was assessed on an ongoing basis to ensure the therapists' accurate implementation of the treatment procedure. All therapists provided 100% of scheduled breaks within 5 s of the FT schedule.

Social Validity Assessment

The eight-item Client Satisfaction Questionnaire (Attkisson, 1994), scored on a 4-point Likert-type scale, was administered at the conclusion of this study. Possible overall scores range from 8 to 32, with higher scores indicating greater satisfaction. An example of items on the scale is, "To what extent has our program met your needs?"

Procedures and Experimental Design

No pretreatment functional analysis was conducted. However, based on interviews with therapists and observation of baseline videotape, the children's behavior was hypothesized to be escape maintained because the onset of disruptive behavior was highly correlated with instructional activity. The effects of treatment were evaluated using a multiple baseline design.

During baseline, the children sat at a table with the therapists who delivered instructions in a one-on-one direct teaching format. Therapists responded to compliance with praise, occasionally paired with an edible item, and responded to noncompliance and disruptive behavior with repetitive verbal and physical prompts. In general, each therapist delivered verbal commands or requests to comply from 4 to 15 times per minute.

Prior to beginning NCE, therapists received vocal or written instructions, modeling, and feedback. The therapist, cued by a timer (Radio Shack Model 63-884 A), provided a 30-s break on an FT schedule. The instructional context, including consequences for compliance, was identical to baseline. Sessions began with the therapist prompting the child to "sit down." The prompting hierarchy consisted of a verbal request, model, and physical guidance as needed, with 5 s between prompts. Rates of instructional requests ranged from 5 to 13 per minute (roughly similar to baseline). The initial FT schedule was arbitrarily set at 1 min and, as in Vollmer et al. (1995), was followed by 1.5 min, 2.0 min, 2.5 min, 3.0 min, and finally 4 min. The FT schedule was advanced if the child engaged in no disruptive behavior for three consecutive FT intervals within a session. If the criterion was not met within two sessions, the schedule was set back to the previous step. The eventual goal for all children was to establish a 4-min FT interval, which, based on therapists' reports, was determined to be a socially valid interval.

During follow-up, Neal's and Paul's therapists continued to implement the NCE procedure using the terminal FT interval established during treatment (FT 4 min). Follow-up data were not collected for Amy because her therapist left the clinic (for reasons unrelated to this study).

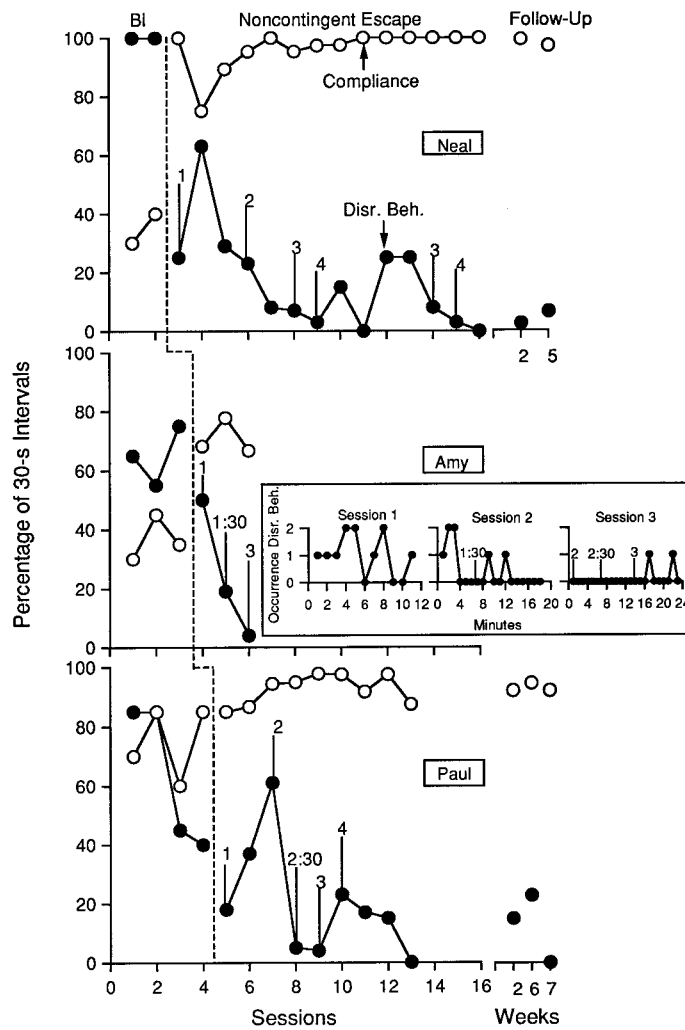


Figure 1. The percentage of 30-s intervals with disruptive behavior and compliance for each child during baseline and NCE. Lines marked with time intervals indicate a change in the FT schedule during that session.

RESULTS AND DISCUSSION

Figure 1 shows that NCE suppressed disruptive behavior and increased compliance for all children. For Neal, the mean percentage of intervals with disruptive behavior decreased from 100% in baseline to 16.7% during treatment. Compliance increased from a baseline mean of 35% of intervals to a treatment mean of 96.4% of intervals. Treatment effects were maintained at follow-up. For Amy, the mean percentage of intervals with disruptive behavior during baseline was 65% compared to 24.3% during treat-

ment. Compliance increased from a baseline mean of 36.7% of intervals to a treatment mean of 70.9% of intervals. Because Amy's treatment phase was abbreviated, we examined her within-session response patterns across minutes during each of the three treatment sessions (box within center panel). These data further support that her disruptive behavior rates decreased as treatment progressed. For Paul, the mean percentage of intervals with disruptive behavior decreased from 63% in baseline to 20% during treatment. Compliance increased from a baseline

mean of 75% of intervals to a treatment mean of 92.6% of intervals. Treatment effects were maintained at follow-up. It should be noted that Paul's disruptive behavior was on a downward trend during baseline. Although it would have been appropriate for baseline to continue until stable patterns of responding were obtained, Paul's therapist did not want to wait further before learning how to decrease his disruptive behavior.

Social validity assessment results were 30 for Neal's therapist, 31 for Amy's therapist, and 32 for Paul's therapist, suggesting that all therapists were highly satisfied with the intervention.

Results of this study extend previous research on NCE by demonstrating that the technique can be implemented in a clinical context by service providers who have little formal training in behavior analysis. The method for increasing the escape schedule followed a simple rule to increase the FT interval following three problem-free intervals. Therapists required minimal instruc-

tion before treatment began, and treatment goals were reached in relatively few sessions.

Paul's unstable baseline and the brevity of Amy's treatment phase preclude any conclusive statements about the robustness of NCE effects. However, overall, these results support the practical utility of the NCE approach, considering issues of ease of implementation, rapidity of effect, and treatment acceptability. Giving the children breaks led to reductions in disruptive behavior, which ultimately increased the therapists' opportunities to teach them skills.

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