

Reducing Nonmeaningful Vocalizations

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Many excellent applications of learning theory have been made to the problem of establishing speech functions in children with severe deficits (Lovaas, 1966, 1976; Risley & Wolf, 1967). A basic, initial response required in these programs is verbal imitation. Many behaviors can prevent or interfere with an attempt to establish verbal imitation. Nonmeaningful or inappropriate vocalizations are one type of behavior that makes verbal imitation particularly difficult (McReynolds, 1969). This *Report* describes a classroom intervention program that was used to reduce such nonmeaningful vocalizations.

The subject of this case study was a five-year-old white male diagnosed as psychotic, who had no verbal behavior and emitted an almost constant flow of nonmeaningful vocalizations.

The subject had been successfully trained to imitate motor behavior following a program described by Bricker and Bricker (1970). An attempt was then made to begin verbal imitation training, which was unsuccessful. An attempt to reduce nonmeaningful vocalizations using extinction was also unsuccessful, suggesting that vocal noise making might be a self-stimulatory operant (Lovaas, 1976).

An omission training procedure in which reinforcement is contingent upon the target response being omitted (Topping, Graves, & Moss, 1975) was selected as a suitable reductive procedure. Because the school objected to an experimental design, criterion referenced evaluation was used (Rosenfield & Houtz, 1976). A criterion of 5% was established for the study by evaluating other children in the program who would verbally imitate. The objective of the program was to reduce the target behavior to the 5% level or lower and hold it there for three consecutive sessions. This criterion was to be met under a progressively more stringent criterion for reinforcement. The changing reinforcement criterion was based on the duration of the target behavior, i.e., absence of vocal noise. The changing reinforcement criterion was a progressively increasing interval of time during which the subject had to remain quiet in order to be reinforced. For example, when using the 10-second interval as the reinforcement criterion, the subject was reinforced for each 10 seconds of continuous quiet behavior.

Duration recording was employed during the treatment sessions utilizing a cumulative time recorder (Center, 1977) that was operated by a hand-held, silent action switch. A mechanical timer was used to control the length of the 10-minute treatment sessions.

Interobserver reliability estimates were obtained by tape recording each session. After each session, an independent observer repeated the measurement procedure using the tape recording of the subject's behavior during the treatment session. The interobserver reliability averaged 94% with a range of 90%-to-98%.

A discriminative stimulus was employed to indicate to the subject that the inappropriate behavior was being exhibited and that reinforcement was not available. The S-delta used was an electric body massager attached to the subject's calf with an elastic bandage. Both primary and social reinforcement were provided for appropriate behavior.

The baseline on nonmeaningful vocalizations indicated that the subject engaged in the target behavior 87% of the time on the average. The baseline was taken during 10-minute observation sessions in the same setting in which the treatment would be conducted.

Because of the possibility that the S-delta might be mildly aversive for the subject and/or reduce the level of behavior through an interference effect, Phase I employed only the S-delta. After an initial reduction in the level of the behavior, it quickly began to climb back toward its previous level. When the level had risen from a low of 47% to 69%, the intervention was begun.

During Phase II, reinforcement of quiet behavior was begun using a 10-second interval. An initial reduction to the 30% level was obtained. The level of nonmeaningful vocalizations continued to slowly but steadily decline throughout Phase II, and the 5% criterion was reached in the 19th session.

A shift to a 20-second interval was made in Phase III, beginning with the 22nd session. In Phase III, a brief initial increase in the level of the behavior to the 30% level was followed by a decline; the 5% criterion was reached in the 28th session.

In Phase IV, beginning in session 31, a shift was made to a 30-second interval. The variability of the behavior increased for several days. The 5% criterion, however, was reached in the 38th session.

A 60-second interval was used in Phase V, beginning in the 41st session. Following an initial increase to the 10% level, the behavior rapidly declined and the 5% criterion was met in the 47th session. The omission training was terminated after the 5% criterion was met for three consecutive sessions. At this time, a successful attempt was made to initiate a verbal imitation program.

Approximately one year later, after the subject had been transferred to a center for the trainable mentally retarded, a follow-up was done. The average level of nonmeaningful vocalizations during the follow-up was 11%.

The results of this study suggest that an omission training procedure can effectively reduce a behavior that possibly belongs in the response class called self-stimulatory operants (Lovaas, 1976). A second attempt to establish verbal imitation, after the nonmeaningful vocalizations had been reduced, was successful. The success of the second attempt at verbal imitation training seems to support McReynolds' (1969) statement that nonmeaningful vocalizations interfere with the establishment of verbal imitation. The apparent generalization of the vocal noise reduction across time and setting was probably due to the success of the second verbal imitation training procedure, i.e., an incompatible alternative response was established.

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