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OVERCOMING AN AUTISTIC CHILD'S FAILURE TO ACQUIRE A TACT REPERTOIRE

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A 6-year-old nonvocal autistic girl who had acquired over 30 signs as mands (requests), simple intraverbals (English-sign translations), and imitative responses repeatedly failed to acquire a tact (labeling) repertoire. It was speculated that the verbal stimulus "What is that?" blocked the establishment of stimulus control by nonverbal stimuli. When procedures to transfer stimulus control from verbal to nonverbal stimuli were implemented, the subject quickly learned to tact all 18 target stimuli.

DESCRIPTORS: verbal behavior, tacting, sign language, stimulus control, autism

Lovaas, Koegel, and Schreibman (1979) identified "stimulus overselectivity" as one possible source of difficulty in teaching autistic children certain types of verbal behavior. The subject in the current study attended exclusively to the auditory component of a verbal task (tacting) involving both auditory and visual stimuli, and as a result, repeatedly failed to acquire tacts. The failure to attend to and tact nonverbal stimuli was severely limiting the subject's language development. Thus, we examined several different procedures designed to eliminate overselective responding and develop a successful tact repertoire.

METHOD: The participant was a 6-year-old autistic girl who had acquired over 30 manual signs as requests (mands), imitative responses, and simple intraverbals (English-sign translations), but after 1 year of behavioral training had not acquired a single tact response. Attempts to teach tacting usually resulted in the subject signing "ball" for all items or emitting aggressive and/or self-injurious behaviors.

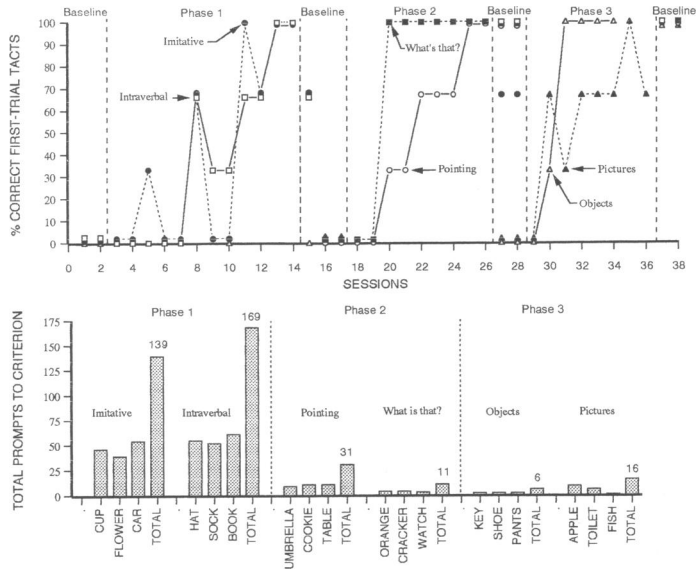
Eighteen items were selected based on the subject imitating the signs and making the signs given the dictated words (simple intraverbal) and her failure to tact the related item. There were three phases of the study: (a) imitative versus intraverbal correction, (b) "What is that?" versus pointing prompts, and (c) objects versus pictures. A simultaneous treatment design with probes before and after treatment was used during each phase. Probes (baseline) were conducted before training and after 100% criterion was met, and consisted of one trial for each of the stimuli used during the respective phase, presented in random order. Correct tact responses to the question "What is that?" were reinforced with praise and access to a preferred item (in or out of seat) for 1 min. The dependent variables were the percentage of first-trial tacts and the number of correction prompts during training with each procedure. Interobserver reliability checks were conducted during all phases; point-by-point agreement averaged 97.6%.

Phase 1. Nine stimuli were randomly divided into three sets of objects. Two sets received intervention (imitative vs. intraverbal prompts), and one set remained untreated (control). For both intervention conditions, instead of presenting the verbal stimulus "What is that?" the experimenter said the subject's name and pointed at an object in a box. Correct responses were reinforced as described above. Following an incorrect response, the experimenter modeled the correct sign during the imitative prompt condition, and said "Sign _____" during the intraverbal prompt condition.

Results and discussion of Phase 1. The figure shows that when the verbal stimulus was changed from "What is that?" to saying the subject's name and pointing, the subject acquired the tacts with both correction procedures (the imitative procedure produced slightly faster acquisition). Also, negative behavior decreased from an initial average of three occurrences per session to zero. However, the final baseline probe condition (which reintroduced the verbal stimulus "What is that?") resulted in only 67% correct tacting for both sets of training stimuli (represented by closed circle and open square data points) and 0% correct for the control set. Before the study the subject had acquired a strong intraverbal connection between the verbal stimulus "What is that?" and a specific response, usually the sign "ball" (later the sign "hat"). It appeared that the change of the initial verbal stimulus to pointing eliminated the subject's tendency to immediately respond intraverbally without attending to the item. When the verbal stimulus "What is that?" was reintroduced, the response "ball" reoccurred. These results support the analysis that the verbal stimulus blocked the establishment of nonverbal stimulus control, and are consistent with the findings of other research on blocking and the transfer of stimulus control (Glat, Gould, Stoddard, & Sidman, 1994; Singh & Solman, 1990). Because the subject's incorrect responses were still partially controlled by the verbal stimulus, Phase 2 was conducted with a new set of nine stimuli in an effort to establish "What is that?" as a discriminative stimulus to attend to the nonverbal stimulus rather than to merely respond intraverbally.

Phase 2. Pictures of objects were used as the nine stimuli (three sets of three pictures) in this phase. Two stimulus presentations were compared (without the box): "What is that?" versus pointing (saying the subject's name and pointing to the picture), and one set was left untreated (control). The imitative prompt correction procedure described in Phase 1 was used for both types of presentation.

Results and discussion of Phase 2. The top panel of the figure shows that both procedures produced correct tacting. Criterion was met in four sessions in the "What is that?" condition (closed square data points) and in nine sessions in the pointing condition (open circle data points). The bottom panel of the figure shows that fewer prompts were required for the "What is that?" procedure and fewer prompts were required overall in this phase than in Phase 1. The final baseline probe condition ("What is that?") showed 100% correct tacts for both conditions of Phase 2, 100% correct tacts for the intraverbal set and 67% correct tacts for the imitative set from Phase 1, and 0% correct for the control sets. It was interesting to note that the "What is that?" procedure resulted in the quickest acquisition of tacts. Before this study, this procedure was ineffective for teaching tacts. It appeared that during Phase 1 the subject had learned to attend to the nonverbal stimulus



due to the removal of the blocking stimulus (i.e., “What is that?”), the concurrent increase in the salience of the nonverbal stimulus (the box), and the reinforcement procedure. This conditioning history apparently established the nonverbal stimuli as the primary source of control, which allowed for the quick establishment of “What is that?” as a discriminative stimulus to attend to the nonverbal stimuli, rather than as a stimulus that evoked an intraverbal response. In Phase 3, a delay procedure was implemented in an attempt to establish unprompted tacting using the objects and pictures from the previous two control sets.

Phase 3. All factors except the type of the nonverbal stimulus (i.e., objects vs. pictures) were the same for both types of training. The “What is that?” procedure described in Phase 2 and the imitative correction procedure used in Phases 1 and 2 were used for both conditions. Verbal prompts were gradually delayed from 2 to 5 s. If a correct response did not occur within that time, a partial verbal prompt (e.g., “What?”) was given.

Results and discussion of Phase 3. The figure shows that tacts were rapidly acquired for both sets. Real objects met criterion before pictures. The final baseline probes showed 100% correct tacts for all 18 stimuli. There were no instances of spontaneous tacting observed in the first two phases nor in the initial sessions of Phase 3. However, during the last four sessions of Phase 3, all correct tacts occurred solely under the control of the nonverbal stimuli. A second instructor then assessed the subject’s tacting, and the subject spontaneously tacted 88.9% of the 18 stimuli. One year after the study, the subject had acquired at least 200 signed tacts.

GENERAL DISCUSSION: The current study shows that the failure to acquire tacts may have been due to the presence of a verbal stimulus that blocked the establishment of stimulus control by a nonverbal stimulus. The removal of the blocking stimulus, the enhancement of the nonverbal stimulus, and the differential reinforcement procedures resulted in the successful transfer of stimulus control from imitative (visual) and intraverbal (auditory) stimuli to nonverbal stimuli. This study may encourage other researchers to make further use of the experimental research in stimulus control, and the application of Skinner’s (1957) analysis of verbal behavior, to develop more effective intervention procedures for language-delayed individuals.

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