

COVARIATION BETWEEN BIZARRE AND NONBIZARRE
SPEECH AS A FUNCTION OF THE CONTENT OF
VERBAL ATTENTION

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A functional analysis suggested that the bizarre speech of an individual with developmental disabilities was maintained by attention. The content of verbal attention was manipulated in two subsequent analyses and revealed that (a) bizarre speech was more frequent when attention was related to the participant's bizarre speech and (b) the participant's statements tended to reflect the content of the therapist's attention, whether bizarre or nonbizarre.

DESCRIPTORS: functional analysis, bizarre speech, social attention, response covariation

Prior studies have shown that the bizarre speech of individuals with various psychiatric disorders can be maintained by positive reinforcement in the form of attention (e.g., Dixon, Benedict, & Larson, 2001; Mace & Lalli, 1991; Wilder, Masuda, O'Connor, & Baham, 2001). Research on other attention-maintained behaviors has shown that the content of verbal attention can influence responding. Fisher, Ninness, Piazza, and Owen-Deschryver (1996), for example, observed that the destructive behavior of a child with autism decreased when attention no longer referred to the behavior or its effects. These authors suggested that altering the content of attention diminished its value as a reinforcer.

For attention-maintained aberrant speech, the content of verbal attention may influence subsequent mands for attention not only by altering reinforcer value but also through other processes characteristic of verbal exchanges (e.g., echoic or intraverbal relations; Skinner, 1957). In the present study, we conducted a functional analysis to determine the variables that maintained the bizarre speech of an individual with mental retardation. We then modified both the content of attention and the contingencies for bizarre and nonbizarre speech to examine more closely how the content of attention influenced the content of the participant's behavior.

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METHOD

Participant, Setting, and General Procedure

Jeremy was a 21-year-old man who had been diagnosed with disruptive behavior disorder, moderate mental retardation, and partial complex seizure disorder. He had been admitted to an inpatient facility for the as-

assessment and treatment of a variety of inappropriate behaviors, including bizarre speech. Jeremy's family identified these statements as an area of concern. All sessions were conducted in Jeremy's bedroom on the unit and lasted 10 min. Four to eight sessions were conducted per day, distributed across three 1- to 1.5-hr periods in the morning and afternoon. Each of three therapists were assigned to all conditions in a quasirandom fashion.

Response Definitions, Data Collection, and Interobserver Agreement

Bizarre statements were defined generally as vocalizations unrelated to the topic being discussed or to stimuli in the environment, but typically consisted of about eight statements that Jeremy would repeat (e.g., "God says no trattering," "Face is not on."). Nonbizarre statements were defined, by exclusion, as those related to the current topic or nearby stimuli and did not contain any reference to bizarre statements. Observers used laptop computers to record the frequency of bizarre statements within 10-s intervals throughout the study and, during the last analysis, Jeremy's nonbizarre statements as well as therapist attention with bizarre and nonbizarre content (defined below). A second observer independently collected data during 63% of sessions. Exact agreement coefficients on bizarre statements averaged 96.1% throughout the study. Exact agreement coefficients on Jeremy's nonbizarre statements and the therapist's bizarre and nonbizarre statements in the final analysis averaged 80.3%, 93.1%, and 85.6%, respectively.

Functional Analysis

A functional analysis using procedures similar to those described by Iwata, Dorsey, Slifer, Bauman, and Richman (1982/1994) was conducted to identify the variables that maintained bizarre speech. All other mal-

adaptive behavior was ignored. In the attention condition, Jeremy had access to a variety of items (e.g., puzzles, books). The therapist ignored Jeremy except to provide brief verbal attention related to bizarre speech (e.g., "Jeremy, it doesn't make sense to say . . .") contingent on each bizarre statement. Attention related to the bizarre content was used because it seemed like a reasonable approximation of how care providers might react. In the demand condition, Jeremy was prompted to complete tasks using a graduated prompting procedure. Bizarre statements resulted in a 30-s escape from demands. During toy play, Jeremy had access to preferred activities, and the therapist provided brief, noncontingent praise (e.g., "Jeremy, you're doing great.") every 30 s. All bizarre statements were ignored. In the ignore condition, the therapist was present but did not interact with Jeremy.

Attention Content Analyses

Two other analyses were conducted to examine more closely the variables that influenced bizarre speech. First, an ABAB design was used to evaluate the effects of the content of attention on bizarre speech only. Content-related attention sessions were identical to the attention condition of the functional analysis. During content-unrelated attention sessions, the therapist continued to deliver attention contingent on bizarre statements. However, the content was modified in that the therapist no longer referred to Jeremy's bizarre speech, but instead redirected his speech towards other topics (e.g., the therapist might remark "Isn't it a nice day today?"). All nonbizarre statements were ignored.

In the second analysis, a multielement design was used to examine the effects of the content of attention on rates of both bizarre and nonbizarre statements. In one condition, contingent attention with bizarre content, the therapist responded to all of Jere-

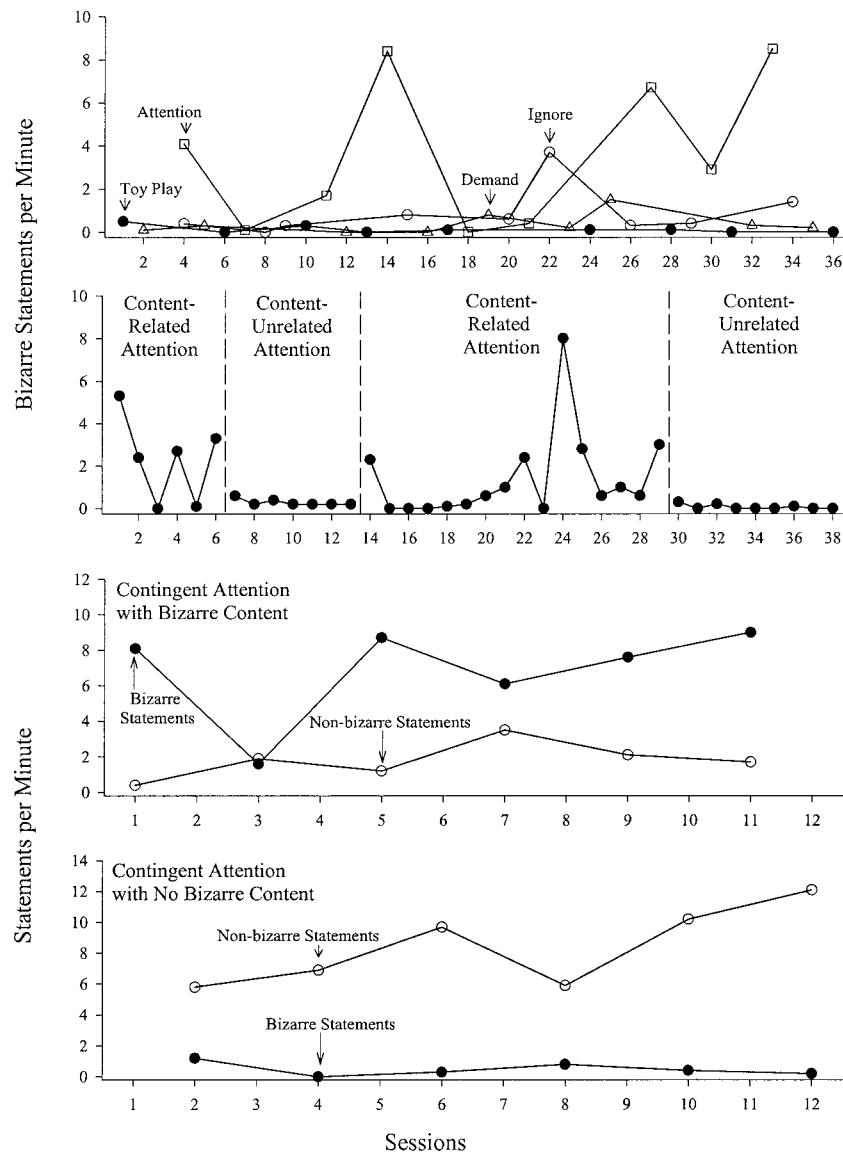


Figure 1. Rates of bizarre speech during the functional analysis (top panel) and the assessment of the content of attention on bizarre speech only (middle panel). The bottom two panels depict rates of bizarre and nonbizarre statements during the last analysis, when each resulted in therapist attention with either bizarre (third panel) or nonbizarre (bottom panel) content.

my's statements, whether bizarre or nonbizarre, with a statement containing bizarre content. Thus, if Jeremy made a nonbizarre statement such "I had milk with lunch today," the therapist would respond with statements that mimicked part of Jeremy's repertoire of bizarre comments. In the second condition, contingent attention with no bi-

zarrre content, the therapist responded to all of Jeremy's statements with a statement containing nonbizarre content.

RESULTS AND DISCUSSION

During the functional analysis (top panel of Figure 1), elevated levels of bizarre speech

in the attention condition suggested that bizarre speech was sensitive to positive reinforcement in the form of attention. During the second analysis (second panel), bizarre speech was more frequent when attention was related to Jeremy's bizarre speech than when it was unrelated. In the last analysis, the likelihood of bizarre and nonbizarre statements varied as a function of the content of attention. When the therapist always provided attention that included bizarre content (third panel), Jeremy was more likely to emit bizarre statements. When the therapist responded to both bizarre and nonbizarre statements with attention that did not contain bizarre content (bottom panel), nonbizarre statements were more frequent. Based on these results, a treatment was developed that incorporated differential reinforcement of appropriate speech and, when appropriate, verbal redirection to other topics. This resulted in a 54.1% decrease in bizarre statements across the day relative to baseline levels.

As in prior studies, bizarre speech was sensitive to reinforcement in the form of attention. In contrast to the account provided by Fisher *et al.* (1996), however, the decreases observed in the target response when the content of attention was modified were not strictly attributable to diminished reinforcer value. If the only effect of altering attention was to decrease its value, then we might have expected a decrease in bizarre speech not necessarily accompanied by systematic changes in other speech topographies. Instead, we observed that the overall level of speech remained relatively constant while the distribution of responding across topographical classes varied as a function of the content of therapists' statements. This finding is consistent with the notion that the content of therapist attention influenced speech topography through other stimulus functions.

The exact nature of those stimulus functions, however, remains unclear. Therapists' statements may have exerted antecedent control over subsequent verbal responses that were echoic in nature. Alternatively, if bizarre and appropriate mands for attention were differentially sensitive to reinforcement by bizarre and appropriate reactions, respectively, then the first therapist response in each session may have assumed a discriminative role, indicating the form of reinforcement that was currently available. More detailed analyses of Jeremy's exact responses would be required to distinguish among these and other possibilities. Future studies may also examine the conditions that give rise to bizarre speech. Given that bizarre statements are, by definition, unusual, perhaps they are more likely than appropriate statements to evoke caregiver reactions.

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