

*FUNCTIONAL ANALYSIS AND TREATMENT OF AGGRESSION
MAINTAINED BY PREFERRED CONVERSATIONAL TOPICS*

EILEEN M. ROSCOE, ARIANNE E. KINDLE, AND SACHA T. PENCE

NEW ENGLAND CENTER FOR CHILDREN
NORTHEASTERN UNIVERSITY

After an initial functional analysis of a participant's aggression showed unclear outcomes, we conducted preference and reinforcer assessments to identify preferred forms of attention that may maintain problem behavior. Next, we conducted an extended functional analysis that included a modified attention condition. Results showed that the participant's aggression was maintained by access to preferred conversational topics. A function-based intervention decreased aggression and increased an appropriate communicative response.

Key words: attention, functional analysis, preference assessment, social positive reinforcement

A number of studies have documented the occurrence of unclear or uninterpretable functional analysis outcomes that required subsequent modification and extension of the functional analysis before the data could be used to inform treatment (Bowman, Fisher, Thompson, & Piazza, 1997; Thompson, Fisher, Piazza, & Kuhn, 1998). One potential explanation for unclear functional analysis outcomes is that the specific form of attention that maintains problem behavior is not delivered during the attention condition. In the Iwata, Dorsey, Slifer, Bauman, and Richman (1982/1994) attention condition, the therapist delivered a brief vocal reprimand contingent on problem behavior. If other forms of attention maintain problem behavior, low levels of problem behavior across all conditions and a false-negative outcome for attention as a maintaining reinforcer may result.

Although previous research has shown that various forms of attention may maintain problem behavior (Fisher, Ninness, Piazza, & Owen-DeSchryver, 1996; Kodak, Northup, &

Kelley, 2007; Richman & Hagopian, 1999), a systematic method for identifying these atypical forms of attention prior to testing them in a functional analysis has not been evaluated. Systematic preference and reinforcer assessments, similar to those used for identifying edible- and leisure-item reinforcers (e.g., Fisher et al., 1992), may be useful for identifying various forms of attention that may maintain problem behavior. In the current study, after an initial functional analysis resulted in inconclusive outcomes, we evaluated the utility of preference and attention analyses for systematically identifying novel forms of attention that may maintain problem behavior. Second, we conducted an extended functional analysis that included the modified form of attention. Third, we conducted a treatment assessment to evaluate the utility of the extended functional analysis outcome.

METHOD

Participant, Target Response, and Setting

Carrie was a 13-year-old girl who resided at a residential school for children with autism and related disabilities. She had been diagnosed with pervasive developmental disorder and communicated using modified signs, pictures, and a speech augmentation device. Her target behavior was *aggression*, defined as any instance of

This research was conducted by Arianne Kindle towards fulfillment of her master's degree at Northeastern University.

Address correspondence to Eileen Roscoe, Assistant Director of Research, New England Center for Children, 33 Turnpike Road, Southborough, Massachusetts 01772 (e-mail: eroscoe@necc.org).

doi: 10.1901/jaba.2010.43-723

actual or attempted hitting above the shoulders, biting, or hair pulling. We conducted sessions in a quiet area of the classroom.

Response Measurement and Interobserver Agreement

Trained observers scored aggression using a latency measure (i.e., the duration of time from the start of the session until the first instance of aggression). During the treatment analysis, observers collected data on a communication response (touching a communication card) using response latency and frequency. Interobserver agreement was calculated for 34% of functional analysis and treatment sessions for aggression and for 40% of treatment sessions for the communication response. We calculated interobserver agreement by dividing the shorter latency (in seconds) by the longer latency and converting the ratio to a percentage. Mean agreement was 96% (range, 87% to 100%), and 100%, for aggression and the communication response, respectively.

Functional Analysis

The functional analysis procedure was similar to that described by Iwata *et al.* (1982/1994) and by Thomason-Sassi, Iwata, Neidert, and Roscoe (in press). Four conditions, including attention, tangible, demand, and control, were conducted using a multielement design. Sessions lasted a maximum of 5 min. Attention, tangible, and demand sessions ended immediately following the delivery of the consequence for the first instance of the target response or at 5 min, and control sessions always ended at 5 min. The therapist wore different-colored shirts and presented photographs depicting the relevant motivating operation during sessions.

During the attention condition, the therapist presented moderately preferred leisure items and diverted her attention. Following an occurrence of aggression, the therapist delivered brief vocal and physical attention. Prior to the start of tangible sessions, the therapist presented preferred items for 1 min and then removed

them. During the session, the therapist represented the items for 30 s contingent on aggression. During the demand condition, the therapist presented instructions using a three-step prompting hierarchy. Compliance resulted in praise, and aggression resulted in termination of instructions. During the control condition, moderately preferred leisure items were continuously available. The therapist delivered attention (praise paired with brief physical contact) on a fixed-time 30-s schedule and did not provide consequences for aggression. Figure 1 shows the results of the standard functional analysis, the attention analysis, and the extended functional analysis. Please note that aggression is plotted as occurring at 300 s when it did not occur. During the standard functional analysis, aggression did not occur in several of the conditions and occurred only sporadically in the demand condition, preventing definitive conclusions regarding the function of Carrie's aggression. Because anecdotal observation indicated that Carrie often asked to talk about specific activities and exhibited aggression when the therapist denied these requests, we conducted subsequent analyses to identify whether conversational topics might function as a reinforcer for her aggression.

Preference Assessment

We conducted a paired-stimulus preference assessment, similar to that of Fisher *et al.* (1992), to determine high-preference (HP) and low-preference (LP) conversational topics for use during the attention analysis. Line drawings were used to represent the different conversational topics included. During each trial, the therapist presented two line drawings simultaneously and asked Carrie to select the item about which she wanted to talk. Contingent on selection (defined as pointing to one of the two line drawings), the therapist withdrew the drawings and initiated social questions and statements concerning the selected conversational topic for 30 s. Each drawing was paired with every other drawing in the array. Results from the preference assessment

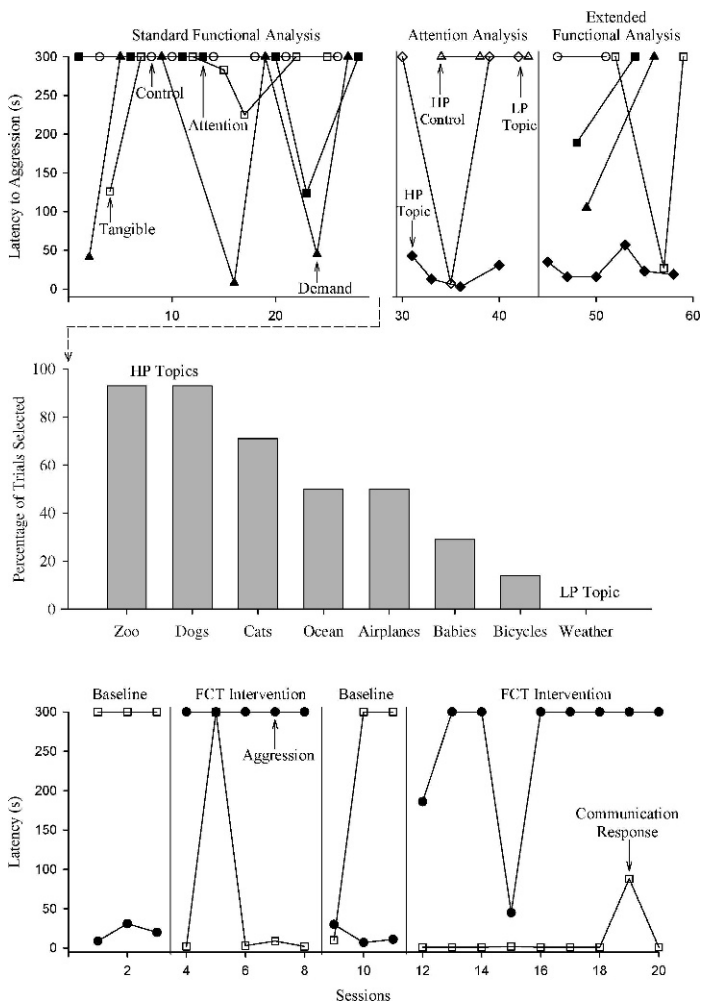


Figure 1. Latency (in seconds) to aggression during the standard functional analysis, the attention analysis, and the extended functional analysis (top). Percentage of trials Carrie selected each of the conversational topics during the preference assessment (middle). Latency (in seconds) to aggression and to the communication response during the FCT treatment assessment (bottom).

(Figure 1) indicated that Carrie selected conversational topics about zoos or dogs most often (93%), and she never selected the weather. Therefore, zoos and dogs were identified as HP topics and weather as the LP topic for use during the attention analysis.

Attention Analysis

We conducted an attention analysis to determine whether Carrie’s aggression was maintained by access to particular conversation-

al topics. Conditions included an HP topic, an LP topic, and a control. Sessions lasted 5 min if aggression did not occur. In both the HP and LP topic conditions, the therapist terminated the session after delivering the first consequence. In the HP topic condition, the therapist placed a picture of an HP form of conversation (zoos or dogs, alternated across sessions) in front of Carrie. Prior to the start of the session, the therapist initiated conversation about the topic for 30 s, then stated “We aren’t talking

about [topic] anymore,” and diverted her attention. Contingent on aggression, the therapist reinitiated conversation about the same HP topic for 30 s. The LP topic condition was identical to the HP topic condition except that the LP topic was discussed. In the control condition, a picture of the HP topic was depicted, and the therapist continuously conversed with Carrie about that HP topic. If aggression occurred, the therapist ignored the behavior. Results from the attention analysis (Figure 1) indicated that differentially short latencies to aggression consistently occurred during the HP topic condition, whereas long latencies or no aggression occurred most often during both the LP topic and control conditions. These findings indicated that HP topics, identified during the preference assessment, maintained Carrie’s aggression, whereas conversational topics about the weather did not.

Extended Functional Analysis

During this phase, attention, tangible, demand, and control conditions were conducted as described above. However, the HP topic condition (described above) was also included. Results from this analysis (Figure 1) showed differentially short latencies to aggression during the HP topic condition relative to control, attention, demand, and tangible conditions. These findings indicate that when a modified attention condition (the HP topic condition) was included in the functional analysis, a clear function could be determined.

Treatment Assessment

Based on the results of the extended functional analysis, a functional communication training (FCT) intervention was evaluated using a reversal design. During all sessions, the therapist placed a card depicting “I want to talk” in front of Carrie. During baseline, the therapist presented HP conversational topics for 30 s and then diverted her attention and began the session. The therapist provided 30-s access to HP topics contingent on aggression and no

differential consequences contingent on occurrences of the communication response. Because the communication response was novel, FCT training sessions, consisting of prompts that were successively faded, were conducted. Following training, the FCT treatment phase was initiated. This phase was identical to baseline, except that the therapist provided no differential consequences for aggression (extinction was in effect) and 30-s access to HP topics contingent on occurrences of the communication response. Prior to the first session of the second baseline phase (Session 12), the therapist said, “Use your card if you want to talk.”

Treatment assessment results are depicted in Figure 1. During baseline, Carrie exhibited short latencies to aggression and never emitted the communication response. During the first FCT intervention phase, she did not exhibit aggression and emitted the communication response at mostly short latencies and at a high frequency ($M = 5.8$). During the second baseline, she exhibited aggression at short latencies and did not exhibit the communication response for the last two sessions. During the return to the FCT intervention, she did not exhibit aggression for most of the sessions and she exhibited the communication response at short latencies and at a high frequency ($M = 6.3$).

DISCUSSION

In the current study, we replicated previous research by showing that an initial functional analysis did not yield conclusive outcomes and that subtle modifications to conditions were necessary for determining behavioral function. We also extended previous research in a number of ways. First, we conducted a preference assessment of conversational topics to identify HP topics. Second, we evaluated the utility of the preference assessment by conducting an attention analysis to determine whether the HP topic condition resulted in shorter response latencies than did LP topic and control

conditions. Third, we used the results of the preference assessment and attention analysis to inform a subsequent modified functional analysis condition. We then used the results of the extended functional analysis to develop an effective function-based intervention.

There are some limitations of the current study that deserve comment. First, we did not conduct an equal number of sessions within each condition of the attention analysis and the extended functional analysis. Therefore, it is unclear whether this may have affected our results. In addition, we evaluated only one general class of attention—conversational topics—during the preference assessment and attention analysis. It may be helpful to evaluate different forms of attention other than conversational topics (e.g., different types of physical attention) in a preference assessment prior to testing whether they maintain problem behavior.

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Received June 15, 2009

Final acceptance January 11, 2010

Action Editor, Cynthia Anderson