

*AN EVALUATION OF THE PROPERTIES OF ATTENTION AS
REINFORCEMENT FOR DESTRUCTIVE AND
APPROPRIATE BEHAVIOR*

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The analogue functional analysis described by Iwata, Dorsey, Slifer, Bauman, and Richman (1982/1994) identifies broad classes of variables (e.g., positive reinforcement) that maintain destructive behavior (Fisher, Ninness, Piazza, & Owen-DeSchryver, 1996). However, it is likely that some types of stimuli may be more effective reinforcers than others. In the current investigation, we identified 2 participants whose destructive behavior was maintained by attention. We used concurrent schedules of reinforcement to evaluate how different types of attention affected both destructive and appropriate behavior. We showed that for 1 participant praise was not an effective reinforcer when verbal reprimands were available; however, praise was an effective reinforcer when verbal reprimands were unavailable. For the 2nd participant, we identified a type of attention that effectively competed with verbal reprimands as reinforcement. We then used the information obtained from the assessments to develop effective treatments to reduce destructive behavior and increase an alternative communicative response.

DESCRIPTORS: functional analysis, attention, destructive behavior

The validity of the functional analysis method for prescribing treatments for destructive behavior has been demonstrated in a number of investigations (Didden, Duker, & Korzilius, 1997; Repp, Felce, & Barton, 1988). The functional analysis method is useful as a prescriptive tool because it results in the identification of the reinforcers that maintain destructive behavior. The results of epidemiological studies indicate that social consequences maintain destructive behavior in about one third of the cases studied (Derby et al., 1992; Iwata et al., 1994). Once reinforcers are identified, they can be arranged in a variety of ways, such as providing those reinforcers for an alternative ap-

propriate behavior (differential reinforcement) or withholding reinforcers for destructive behavior (extinction). Differential reinforcement and extinction procedures can be developed most easily when the reinforcer is within the control of the therapist (i.e., social reinforcement).

Attention is one form of social reinforcement that has been demonstrated to maintain destructive behavior. In the analogue functional analysis method described by Iwata, Dorsey, Slifer, Bauman, and Richman (1982/1994), attention is delivered in the form of verbal reprimands and brief physical interaction following occurrences of destructive behavior. When the results of a functional analysis indicate that destructive behavior is sensitive to adult attention as reinforcement, extinction procedures can be developed in which the reinforcer (verbal reprimands and physical interaction) is withheld following occurrences of destructive behavior.

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Implementation of a differential reinforcement procedure for attention-maintained destructive behavior is somewhat problematic because delivery of the functional reinforcer, verbal reprimands, for an alternative behavior is not socially appropriate. Thus, most studies examining differential reinforcement procedures to treat destructive behavior maintained by attention provide a qualitatively different form of attention (e.g., praise, interactive play) than the one identified during the functional analysis (Durand & Carr, 1991; Fisher *et al.*, 1993; Peck *et al.*, 1996). However, the extent to which verbal praise or interactive play are substitutes for verbal reprimands is unclear because few studies have evaluated the extent to which praise or interactive play are functional reinforcers. In addition, most studies combine differential reinforcement and extinction to treat destructive behavior (e.g., Carr & Durand, 1985; Kern, Mauk, Marder, & Mace, 1995). That is, few studies have examined the effects of concurrent reinforcement of appropriate and destructive behavior when the reinforcer for both behaviors is attention. However, it may be important to identify reinforcers that effectively reduce attention-maintained destructive behavior when destructive behavior continues to produce attention, particularly when implementation of an extinction procedure is not possible (e.g., child runs into traffic on a busy street) or when extinction is not likely to be implemented with high fidelity by caregivers.

It is unlikely that all forms of attention function as reinforcers across individuals (Fisher *et al.*, 1996). For example, Fisher *et al.* examined the effects of the content of verbal attention on the inappropriate behavior of a boy who had been diagnosed with autism. A functional analysis indicated that the boy's destructive behavior was maintained by adult attention (in the form of verbal attention). A second functional analysis

was conducted to examine the properties of verbal attention that maintained destructive responding. In one condition, the therapist provided contingent verbal attention that referred to the destructive behavior (e.g., "Don't do that, you'll hurt me"), and in the other condition, the therapist provided contingent verbal attention that was unrelated to the destructive behavior (e.g., "It's a nice day today"). Results of the analysis showed that response-relevant statements maintained destructive behavior at higher levels than response-irrelevant statements.

Analyses such as those conducted by Fisher *et al.* (1996) are important because the outcome of these analyses has direct implications for treatment. That is, all forms of attention may not be functionally equivalent; thus, it may be important to evaluate the effectiveness of different forms of attention as reinforcement prior to treatment implementation. For example, if destructive behavior was sensitive to physical attention as reinforcement, then functional communication training (FCT), in which mands are reinforced with verbal attention and destructive behavior resulted in no verbal attention, could be less effective if destructive behavior continued to produce physical attention. It is likely that the more effective treatment in this case would consist of FCT for physical attention and discontinuation of physical attention for destructive behavior.

In the current investigation, we identified 2 participants whose destructive behavior appeared to be maintained by attention. We used concurrent schedules to demonstrate two methods of examining the relative reinforcing value of various forms of attention. These methods involved (a) evaluating the relative effects of praise and verbal reprimands as reinforcement for both appropriate and destructive behavior, and (b) comparing forms of attention as treatment components. Finally, we used the information from the

concurrent-schedules analyses to develop effective treatments.

GENERAL METHOD

Participants and Setting

Two individuals with severe behavior problems were admitted to an inpatient unit specializing in the assessment and treatment of destructive behavior. Ike was an 11-year-old boy who had been diagnosed with pervasive developmental disorder, attention deficit hyperactivity disorder, and moderate mental retardation. His destructive behavior included aggression and disruption. Ike was ambulatory and could follow simple one- and two-step directions (e.g., "brush your hair"). He communicated using one-word utterances (e.g., "yes," "no") and gestures. Paul was an 11-year-old boy who had been diagnosed with mild to moderate mental retardation, autism, and oppositional-defiant disorder. Paul had been admitted for the assessment and treatment of aggression. Paul was ambulatory and could follow two- and three-step instructions and could use two- and three-word sentences to communicate his needs. All sessions were conducted in rooms (3 m by 3 m) equipped with one-way mirrors.

Data Collection and Interobserver Agreement

Trained observers sat behind a one-way mirror and recorded participants' target behaviors on laptop computers. Frequency data were recorded for aggression, disruption, and appropriate communication. Toy contact and in-seat behavior were scored using a duration measure, and percentage duration was calculated by dividing the duration of toy contact or in-seat behavior by the duration of the session and multiplying by 100%. Integrity data were scored using a 10-s partial-interval procedure. Ike's destructive behavior consisted of aggression (hitting, kicking, scratching, pinching, hair pulling,

head butting, throwing objects at people, pulling others' clothes, pushing, and running into others) and disruption (throwing objects, kicking or banging on surfaces, knocking objects off of surfaces, property destruction, and placing objects within 10 cm of a person's face). Ike's appropriate behavior included communication (handing a picture card to the therapist) and toy contact (hand or mouth contact with a toy). Integrity data (therapist maintaining a distance less than 1 m away from Ike, making eye contact while delivering attention, keeping voice at a conversational level, and using little intonation when speaking) were scored during Ike's sessions. Paul's destructive behavior included aggression (hitting and kicking others, pulling on others, chin pressing on others, and throwing objects in the direction of others). Paul's appropriate behavior included communication (handing a picture card to the therapist) and in-seat behavior (buttocks resting in seat of chair).

All sessions were 10 min in length and were partitioned into 60 intervals (10 s each) to calculate interobserver agreement. Two observers scored target responses simultaneously but independently during 67% and 42% of sessions for the functional analysis for Ike and Paul, respectively. Interobserver agreement was assessed during 66% and 94% of reinforcer assessment sessions and during 62% and 57% of the treatment evaluations for Ike and Paul, respectively. Exact agreement coefficients were calculated by dividing the number of agreements by the number of agreements plus disagreements and multiplying by 100%. An exact agreement was defined as both observers recording the same frequency of a target response in a given 10-s interval. Mean agreement was 98% and 96% for destructive behavior for Ike and Paul, respectively, during the functional analysis. During the reinforcer assessment, mean agreement for Ike was 95% for percentage of session with toy contact

and 96% for integrity, and was 99% for Paul for in-seat behavior. During the treatment evaluation, mean agreement was 99% and 97% for Ike and 96% and 97% for Paul for destructive behavior and communication, respectively.

Design

The functional analysis for Ike was conducted using a multielement design and for Paul using a reversal design. A combination of concurrent schedules and reversal designs was used during the reinforcer assessments for both participants, and the treatment assessments were conducted using reversal designs.

Functional Analysis

Functional analyses were conducted with both participants based on the procedures described by Iwata *et al.* (1982/1994). The analyses consisted of social attention, demand, tangible, and toy play conditions. During social attention sessions, the client was given toys and was instructed to play. The therapist delivered attention in the form of a brief verbal reprimand contingent upon target destructive responses. All other responses were ignored. During the demand sessions, the therapist used sequential verbal, gestural, and physical prompts every 10 s until the client either complied with the request or engaged in destructive behavior. If the client complied with the request following a verbal or gestural prompt, he received praise from the therapist. If the client engaged in destructive behavior, the therapist terminated the instruction and removed the task materials for 30 s (*i.e.*, the client was permitted to escape the demand). Academic prompts were delivered to both clients based on their individual education plans. During tangible sessions, the client was allowed to play with preferred items for 2 min (Ike) or consume the edible item for 20 s (Paul) prior to the start of the session. The preferred ob-

jects were a remote control car and a teddy bear for Ike and candies for Paul. The therapist removed the items when the session began. If the client engaged in a destructive behavior the therapist returned the items for 30 s (Ike) or 20 s (Paul). All other responses were ignored. During toy play, the therapist played with the client and delivered social attention once every 30 s following the first 5-s period in which destructive behavior did not occur.

Results

Results of the functional analyses for Ike and Paul appear in Figure 1. Rate (responses per minute) of Ike's destructive behavior was high and consistent in the attention condition ($M = 6.5$). Mean rate of destructive behavior in the tangible condition was 1.7, suggesting that Ike engaged in destructive behavior each time the tangible item was removed. Destructive behavior was near zero in the demand and toy play conditions ($M = 0.1$ and $M = 0.0$, respectively). These results suggested that adult attention and access to preferred items maintained Ike's destructive behavior. The rate of destructive behavior for Paul was high and variable during the social attention condition ($M = 6.2$). Rates of destructive behavior in the demand, toy play, and tangible conditions were near zero ($M = 0.1$, $M = 0.05$, and $M = 0.0$, respectively). These results suggested that Paul's destructive behavior was maintained by adult attention.

STUDY 1: CONCURRENT ASSESSMENT OF PRAISE AND REPRIMANDS (IKE)

The results of Ike's functional analysis indicated that destructive behavior was maintained in part by access to adult attention. One commonly used treatment for attention-maintained destructive behavior is FCT

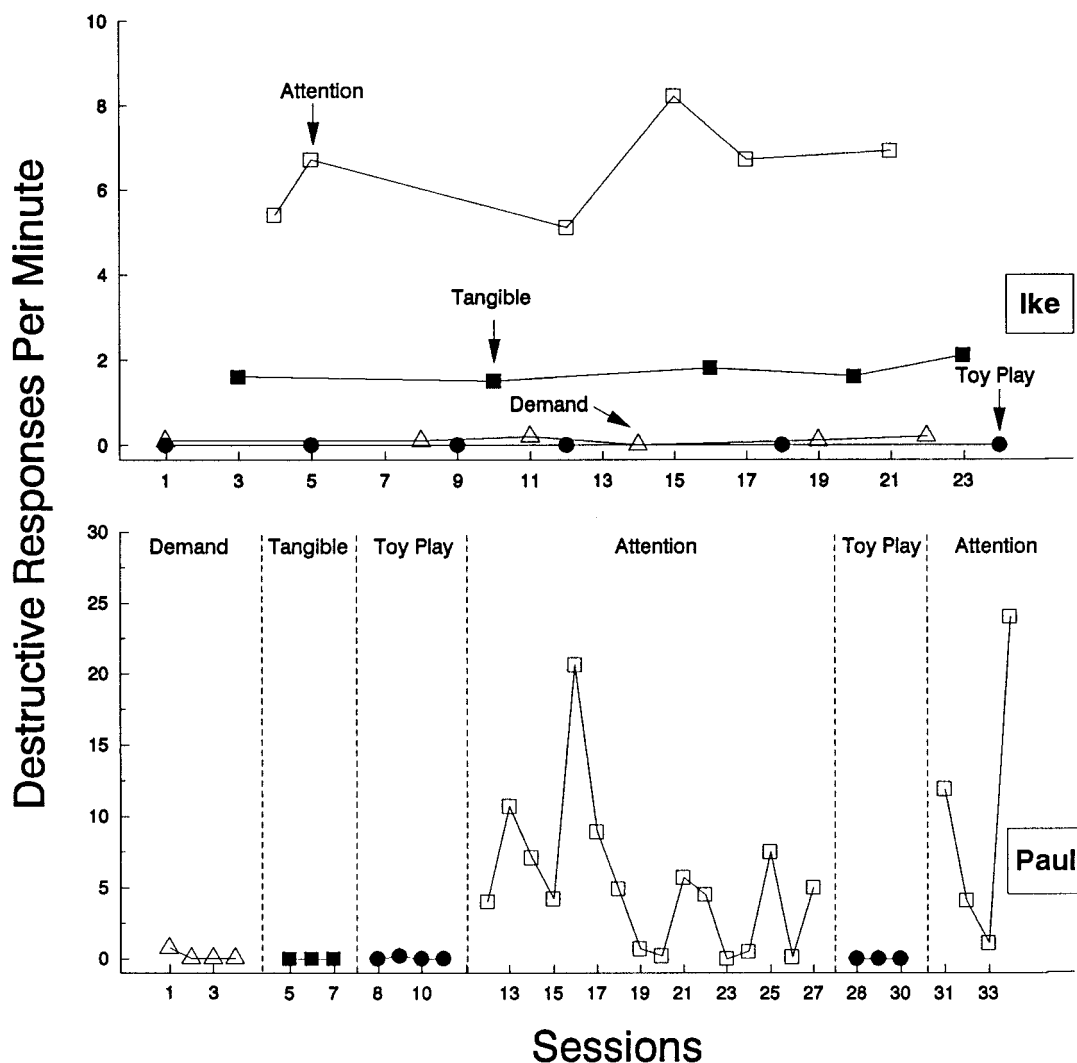


Figure 1. Rates of destructive behavior during the analogue functional analysis for Ike (top panel) and Paul (bottom panel).

using praise as reinforcement for communication. Prior to implementation of an FCT treatment, we conducted a reinforcer assessment in order to determine whether praise would function as an effective reinforcer when verbal reprimands were available concurrently for an identical response.

Procedure

Reinforcer assessment. During all sessions, two sets of toys that were identical except for color were present (i.e., blue bear, red

bear, blue car, red car). Same-colored toys were located in same-colored buckets on opposite sides of the room. During baseline, toy contact and destructive behavior resulted in no arranged consequences. Prior to each contingent attention session, Ike was physically guided to interact with toys of each color and was provided with the consequence associated with that color. In the first contingent attention phase of the assessment, contact with the blue toys resulted in reprimands (e.g., “Don’t do that”) and con-

tact with the red toys resulted in praise (e.g., "Good job, Ike"). During the second contingent attention phase, the consequences associated with each color of toys were reversed such that the red toys were associated with reprimands and blue toys were associated with praise. Continuous reprimands or praise was delivered for the duration of toy contact, and attempts to play with two different-colored toys simultaneously were blocked. In order to maintain consistency in the manner in which praise and reprimands were delivered across the two responses, the therapists were instructed to (a) remain at a distance of 0.3 to 0.5 m from Ike, (b) make eye contact only when delivering praise or reprimands, (c) keep voice at conversational level, and (d) use little intonation when praising or reprimanding Ike. No consequences were provided for occurrences of destructive behavior.

Treatment evaluation. The effect of FCT with extinction was compared to baseline. The baseline was identical to the attention condition of the functional analysis. That is, the therapist delivered a verbal reprimand contingent on destructive behavior. During FCT with extinction, communication (handing the therapist a picture card) resulted in 20 s of attention (praise) from the therapist and destructive behavior resulted in no consequence. Ike was taught to use the FCT (picture card) using a backward chaining procedure prior to the onset of the FCT treatment evaluation. Each training session consisted of 10 discrete trials. The backward chaining procedure initially consisted of physically guiding Ike to give the picture card to the therapist. The level of physical guidance was gradually faded over the course of sessions by introducing an increasing delay between the verbal and physical prompt and subsequently introducing a delay between the presentation of the card and the verbal prompt. Communication during training sessions resulted in 20 s of the re-

inforcer (praise). Training was discontinued when Ike communicated independently (gave the card to the therapist without a prompt) on 80% of trials for three consecutive sessions.

Results and Discussion

The results for the concurrent assessment of praise and reprimands appear in Figure 2. Toy contact for Ike was variable when no social consequences were provided ($M = 17.2%$ and $M = 32.7%$ for blue and red toys, respectively). When praise or reprimands were available contingent upon toy contact, Ike interacted exclusively with the toys (blue) associated with reprimands ($M = 92.2%$). In the second baseline phase, Ike continued to interact with the toys previously associated with the reprimands (blue, $M = 58.3%$); however, levels of contact with these toys declined over the course of the reversal phase. Levels of toy contact were low with the toys previously associated with praise (red, $M = 1.7%$). When we returned to the contingent attention phase and reversed the consequences associated with each toy color, toy contact occurred exclusively with the toys (red) associated with reprimands ($M = 81.5%$). Procedural integrity remained high ($M = 97.0%$ and $M = 94.0%$, respectively) during both contingent attention phases of the reinforcer assessment.

The results of the assessment indicated that verbal reprimands were a more effective reinforcer than praise because Ike allocated his responding exclusively toward the toys that were associated with verbal reprimands, demonstrating that the obtained effects were not a function of any specific stimulus characteristics of the toys (e.g., color). The results of the concurrent-schedules analysis suggested that praise would not effectively reduce destructive behavior when it continued to produce verbal reprimands; therefore treatment included an extinction component in which destructive behavior no longer pro-

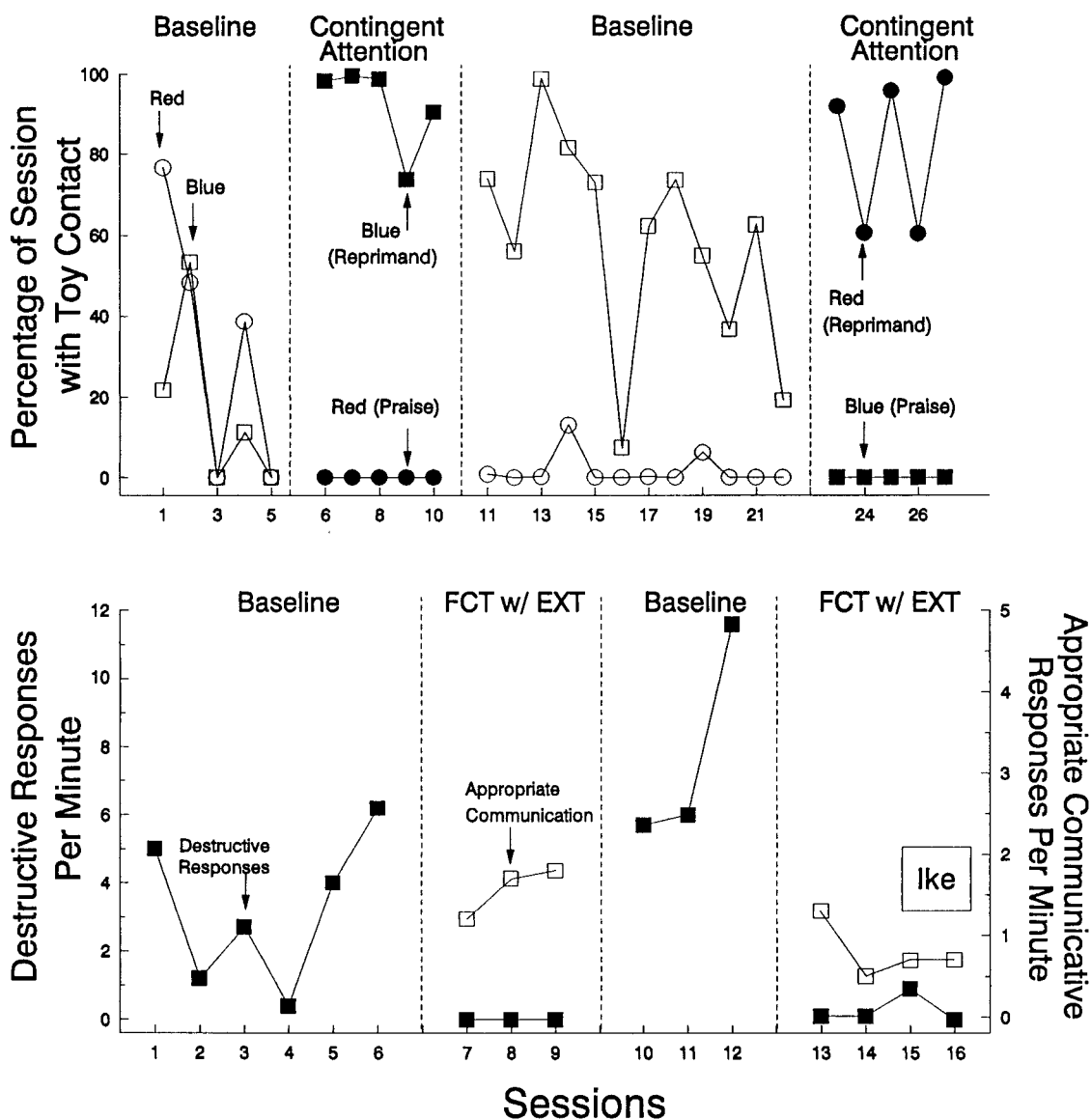


Figure 2. Percentage of session with toy contact for Ike during the assessment of verbal reprimands and praise as reinforcement (top panel) and rates of destructive behavior and appropriate communication during the treatment evaluation (bottom panel).

duced reprimands. In addition, even though it did not seem that praise alone would effectively reduce destructive behavior, a reinforcement-based component was included in treatment due to parental preference.

Results for the treatment evaluation appear in the bottom panel of Figure 2. Rates of destructive behavior ($M = 0$) were reduced when communication ($M = 1.6$) re-

sulted in praise and destructive behavior produced no consequence. During the reversal to baseline, rates of destructive behavior increased ($M = 7.8$). Destructive behavior was reduced during the subsequent FCT ($M = 0.2$) phase. Communication during the second FCT phase ($M = 0.8$) continued to result in praise. The results of Ike's treatment evaluation suggested that praise was a rein-

forcer when the reprimands were unavailable. However, it is not clear whether extinction alone would have resulted in similar reductions in Ike's destructive behavior.

The analysis showed that when verbal reprimands and praise were available simultaneously, verbal reprimands functioned as the more effective reinforcer. The treatment for Ike's destructive behavior consisted of FCT plus extinction based on the results of the concurrent-schedules analysis, which suggested that praise would not be an effective reinforcer if destructive behavior continued to produce verbal reprimands. However, the analysis is limited because it failed to suggest alternative or nonextinction-based treatments that also might be effective. A related limitation is that the analysis did not address the problem of competition between different forms of attention when problem behavior continues to produce attention. That is, there may be situations in which it is not possible to ignore destructive behavior (e.g., the child is causing tissue damage from self-injury). In addition, some caregivers may not always implement extinction procedures with 100% fidelity. In these cases it would be helpful to have a method for identifying forms of reinforcement that will effectively compete with verbal reprimands. Therefore, in the next case, we identified a form of attention that effectively competed with verbal reprimands, and we used that information to develop a differentially effective treatment.

STUDY 2:
IDENTIFICATION OF A TYPE OF
ATTENTION THAT EFFECTIVELY
COMPETED WITH
VERBAL REPRIMANDS

Procedure

Reinforcer assessment. We evaluated the reinforcing properties of two different types of attention (e.g., physical and verbal) for Paul.

The assessment consisted of two phases. In both phases, the room was divided into equal sections (i.e., control vs. test) with identical chairs and a therapist located in each section. During the physical attention phase, in-seat behavior in the test section resulted in the delivery of physical attention (tickles) for the duration of time Paul remained seated in the chair. During the verbal attention phase, in-seat behavior in the test chair resulted in the delivery of verbal reprimands (e.g., "don't do that") for the duration of time Paul remained seated in the chair. In-seat behavior in the control section resulted in no arranged consequences in both phases. Prior to the start of the session, Paul was exposed to the contingencies associated with each chair. That is, he was physically guided to sit in each chair and the consequences associated with that chair were delivered for 10 s.

Treatment evaluation. An FCT without extinction procedure was evaluated. The sessions were similar to the attention condition of the functional analysis. That is, toys were made available while the therapist read a magazine. Occurrences of destructive behavior resulted in a verbal reprimand (e.g., "don't do that"). However, when Paul communicated (handed a picture card to the therapist) in the FCT (physical attention) phase, the therapist provided Paul with 20 s of physical attention (tickles). In the FCT (praise) phase, communication resulted in 20 s of praise (e.g., "you're doing a great job") from the therapist. Paul was trained to use two different picture cards (7 cm by 7 cm), one for physical attention (a photograph of Paul being tickled on an orange card) and one for praise (a photograph of Paul being praised on a green card). Training to use the physical attention card occurred prior to the onset of the first FCT (physical attention) phase, and training to use the praise card occurred prior to the onset of the first FCT (praise) phase using procedures

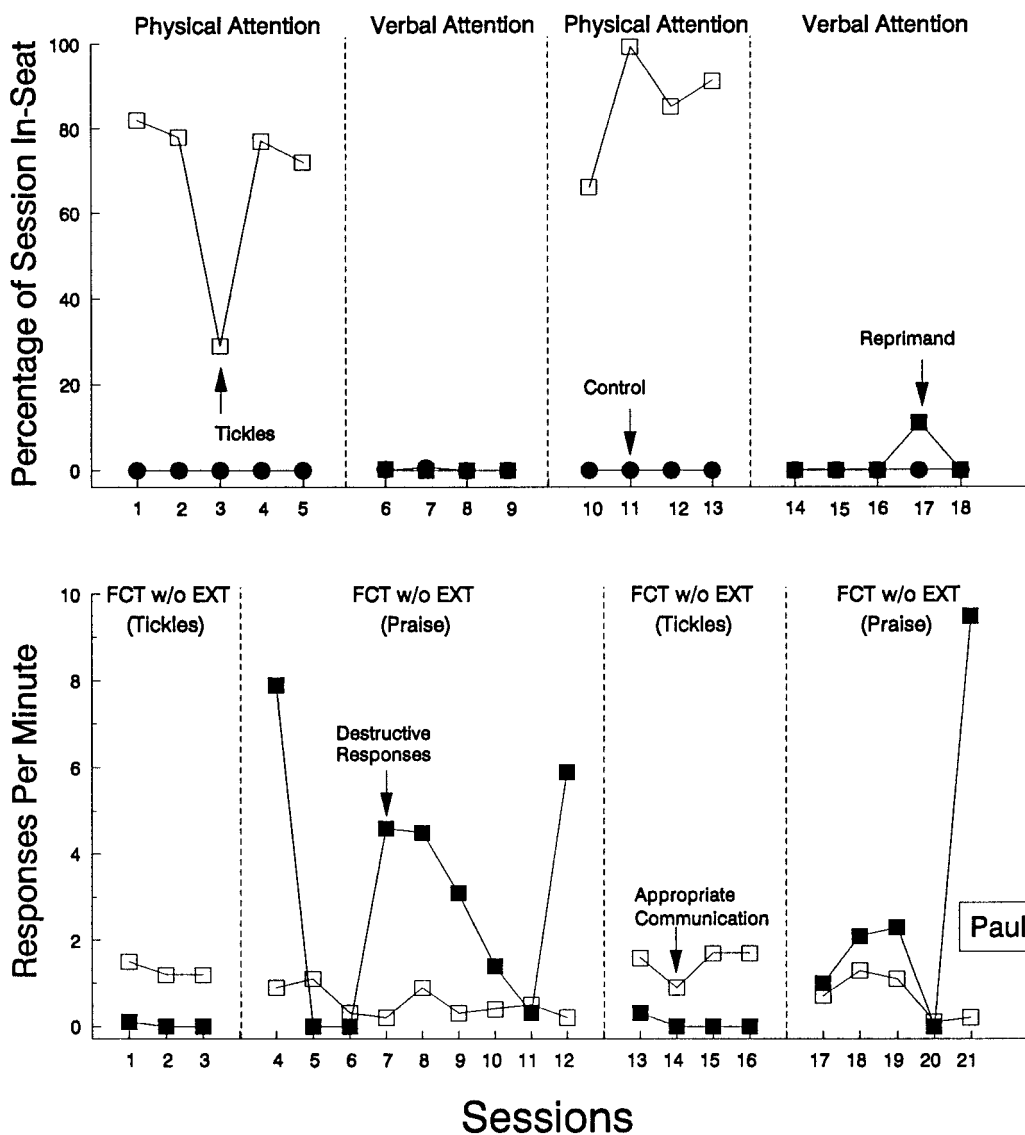


Figure 3. Percentage of session with in-seat behavior for Paul during the assessment of physical and verbal attention as reinforcement (top panel) and rates of destructive behavior and appropriate communication during the treatment evaluation (bottom panel).

identical to the ones described for Ike. The order of the phases was randomized.

Results and Discussion

Results of the reinforcer assessment appear in Figure 3. The results of the reinforcer assessment suggested that physical attention was the more effective reinforcer, in that Paul allocated his responding almost exclusively to the chair associated with physical

attention ($M = 85\%$). Levels of in-seat behavior were near zero when in-seat resulted in a verbal reprimand. It is not clear why verbal reprimands functioned as reinforcement for destructive behavior but not for the arbitrary response. Perhaps this finding reflects the historical relation between verbal reprimands and destructive behavior. That is, destructive behavior historically occasioned verbal reprimands, but sitting in

chairs did not. Thus, there was no functional relation between in-seat behavior and verbal reprimands. It is possible that if in-seat behavior had resulted in verbal reprimands over a longer period of time, verbal reprimands would have functioned as a reinforcer for in-seat behavior.

The results of the treatment evaluation appear in the bottom panel of Figure 3. Mean rates of destructive behavior and appropriate communication were 0.05 and 1.4, respectively, during the physical attention phase. Mean rates of destructive behavior and appropriate communication were 3.04 and 0.5, respectively, during the praise phase.

Similar to the findings for Ike, when praise and verbal reprimands were available concurrently, Paul allocated responding almost exclusively toward the response that resulted in verbal reprimands. Thus, verbal reprimands were a more effective reinforcer than praise. Given that praise did not effectively function as reinforcement when destructive behavior continued to produce reprimands, we evaluated the extent to which physical attention would effectively compete with verbal reprimands. During treatment, destructive behavior decreased when communication resulted in physical attention even though destructive behavior continued to produce verbal reprimands. These findings suggested that physical attention was a higher quality reinforcer than verbal reprimands. Treatments involving praise and physical attention were directly compared in an ABAB design, and the results of the treatment evaluation showed that FCT using physical attention as reinforcement was more effective than FCT using praise as reinforcement.

GENERAL DISCUSSION

The results of the current investigation replicate a number of studies (Derby *et al.*,

1992; Iwata *et al.*, 1982/1994, 1994) that have shown that functional analysis can be used to identify the reinforcer for destructive behavior. Specifically, in about one third of cases, attention in the form of reprimands and physical contact maintained destructive behavior (Derby *et al.*, 1992; Iwata *et al.*, 1994). Even though the functional analysis identifies reprimands as the source of reinforcement for destructive behavior, reprimands (the functional reinforcer) are used rarely (if at all) in procedures to treat attention-maintained destructive behavior. Most research involving attention-maintained destructive behavior implement treatments using attention in the form of praise, proximity, interactive play, and so forth. This is a logical strategy when the results of a functional analysis show that destructive behavior is sensitive to attention as reinforcement, because it would not be socially appropriate to provide the functional reinforcer (reprimands) for alternative behavior. However, it is not clear that all forms of attention are functionally equivalent, and the extent to which these forms of attention effectively compete with reprimands has not been well established.

In the current investigation, we directly evaluated the reinforcing effectiveness of praise and reprimands using a concurrent-schedules arrangement. The analyses from both participants suggested that verbal reprimands were a higher quality reinforcer because both participants allocated responding almost exclusively toward the behavior that produced reprimands. The analyses also showed that praise did not effectively compete with verbal reprimands when both were concurrently available. These results suggested that arbitrarily selecting a form of attention may not be a sufficient method of identifying the most effective form of attention for use in treatment because not all forms of attention are functionally equivalent. These data also suggested that using praise in a dif-

ferential reinforcement or noncontingent reinforcement paradigm would not be effective in reducing destructive behavior if destructive behavior continued to produce reprimands. These results replicate the findings of previous studies showing that quality of reinforcement can affect responding (Neef, Mace, & Shade, 1993; Neef, Mace, Shea, & Shade, 1992; Peck et al., 1996). For example, Peck et al. showed that participants allocated responding toward the behavior that produced the highest quality of reinforcement when two reinforcers of different quality were available concurrently.

These data also explain why extinction may be a critical component in treatment of attention-maintained destructive behavior. For example, Mazaleski, Iwata, Vollmer, Zarcone, and Smith (1993) showed that use of an arbitrary reinforcer without extinction during a differential-reinforcement-of-other-behavior schedule was ineffective in reducing self-injury. Self-injury was reduced only when extinction was added to treatment, independent of a variety of manipulations of the reinforcement component (e.g., functional vs. arbitrary reinforcers). Thus, extinction may be a necessary component when the alternative forms of reinforcement used in treatment do not effectively compete with verbal reprimands.

However, caregivers may not always implement extinction procedures accurately; therefore, it may be important to identify types of attention that do effectively reduce destructive behavior when destructive behavior continues to result in verbal reprimands. Therefore, a concurrent schedule of reinforcement was used with Paul to identify a type of attention that would effectively reduce destructive behavior when reprimands were available concurrently. The results suggested that the concurrent-schedules arrangement could be used (a) to identify a form of attention that effectively competed

with verbal reprimands and (b) to develop a differentially effective treatment.

It is not clear why verbal reprimands functioned as reinforcement for destructive behavior or why verbal reprimands were a more effective reinforcer than praise. Perhaps this finding reflects the historical relation between verbal reprimands and destructive behavior and praise and appropriate behavior. For example, it is possible that destructive behavior produced reinforcement (reprimands) on a relatively dense schedule. By contrast, some research has suggested that the appropriate behavior of individuals with severe behavior disorders produces attention infrequently (Shores et al., 1993). Alternatively, reprimands may have been associated historically with changes in vocal (e.g., tone, level, intonation) or behavioral characteristics (e.g., facial expressions, body movements) that were reinforcing and that had not been associated with praise. Thus, reprimands historically produced a higher quality reinforcer than praise. We attempted to equate the vocal and behavioral characteristics associated with praise and reprimands during the concurrent-schedules analyses. However, it is possible that these manipulations were insufficient to override the participants' learning histories. These explanations should be viewed cautiously and more research is needed to explore the relationship between reprimands and other forms of attention.

The functional analysis method described by Iwata et al. (1982/1994) was designed to identify broad, functional classes of reinforcement (e.g., positive vs. negative) for destructive behavior (Fisher et al., 1996). It is likely that different individuals are sensitive to different types of attention, and that some forms of attention may be more effective reinforcers than others. For example, some caregivers may make eye contact, some may provide physical attention, some may raise the level of their voice, and so on, and these

variables may affect destructive behavior in different ways for different individuals. Anecdotal observations may be helpful in describing the various ways in which attention is delivered in the natural environment, but these observations do not result in precise identification of the variables that maintain destructive behavior (Lerman & Iwata, 1993) or in determination of which aspects of attention may be more effective reinforcers than others. A benefit of experimental analyses, such as the ones used in the current investigation, is that the relative effectiveness of various forms of attention (or other reinforcers) can be tested directly.

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STUDY QUESTIONS

1. What is the value of identifying specific forms of attention that serve as positive reinforcers for problem behavior?
2. Summarize the results obtained from the functional analysis.
3. Describe the procedures used to compare the relative effects of different positive reinforcers on problem behavior. What results were obtained from these comparisons?
4. Why was extinction included as a component of Ike's functional communication training (FCT) program but not as a component of Paul's program?
5. Describe the contingencies that were in effect during Paul's FCT treatment condition.
6. How do Ike's data illustrate the importance of consistency when attempting to extinguish problem behavior maintained by attention?
7. Why, according to the authors, might verbal reprimands function as reinforcers or as more effective reinforcers than praise?
8. What general limitation and strength of experimental approaches to behavioral assessment (i.e., functional analyses) were highlighted in this article?

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