

*DELAYED REINFORCEMENT AS AN INDISCRIMINABLE
CONTINGENCY IN VERBAL/NONVERBAL
CORRESPONDENCE TRAINING*

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We investigated the programming of generalization and maintenance of correspondence between verbal and nonverbal behavior in a preschool setting. Four children participated in a series of multiple-baseline designs. In Experiment 1, delayed reinforcement of verbal behavior effectively controlled maintenance of correspondence with previously trained responses and also resulted in generalization of correspondence to one untrained response. As the latter effect was limited, Experiment 2 was a further assessment of the effects of delayed reinforcement of generalization of correspondence to untrained responses, and consistent generalization was shown. Experiment 2 also showed that generalization, if lost, could be recovered through use of "booster training," in which the original contingencies were reinstated for a brief period. Experiment 3 provided replications, with two additional children, of the effects of delayed reinforcement on maintenance of correspondence. Results are discussed in terms of using delayed reinforcement as an indiscriminable contingency.

DESCRIPTORS: correspondence training, generalization, delayed reinforcement, verbal behavior, preschool children

It is generally acknowledged that the relationship between an individual's verbal and nonverbal behavior is important to society (Israel, 1978; Risley & Hart, 1968; Rogers-Warren & Baer, 1976). The efforts of socializing agents, such as parents and teachers, are often focused on shaping verbal behavior regarding appropriate conduct, assuming that such verbal repertoires subsequently will lead to desirable nonverbal behavior. In addition, many clinical procedures, such as self-instruction training and verbal forms of psychotherapy, are based on the idea that changing people's verbalizations about their behavior will lead to corresponding changes in the way they behave (Brodsky, 1967; Israel, 1978).

Training correspondence between verbal and

nonverbal behavior has been the subject of several recent studies (e.g., Israel & O'Leary, 1973; Jewett & Clark, 1979; Karoly & Dirks, 1977; Risley & Hart, 1968; Rogers-Warren & Baer, 1976; Whitman, Scibak, Butler, Richter, & Johnson, 1982; Williams & Stokes, 1982). Toy play, conversation, clean-up, and in-seat behaviors have served as target responses in correspondence training studies.

The utility of correspondence training procedures lies in their potential for developing control over behavior by controlling verbal responses about that behavior. If verbal-nonverbal correspondence were assured, a behavior change agent could control a subject's behavior, even in a remote or inaccessible setting, by prompting and reinforcing the subject's appropriate verbal responses (promises) about that behavior, such as, "Today I'm going to follow my teacher's instructions."

Correspondence training procedures become more useful if correspondence behavior will generalize and maintain. Generalized correspondence is seen when, after training correspondence with a few responses, the subject's verbal behavior (promises) reliably controls his or her performance of other responses for which correspondence has not

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been trained (Karlán & Rusch, 1982). This may also be called generalized verbal control (Williams & Stokes, 1982). Maintenance of correspondence is seen when, after training correspondence with a particular target response, the subject continues to follow through on promises to engage in that response, even though reinforcement for the correspondence has ceased. Generalization and maintenance of correspondence will allow the behavior change agent to control a variety of the subject's behaviors and to maintain control over time, in situations in which it is inconvenient to monitor and reinforce the behaviors continually (Israel, 1978).

Some studies have shown generalization or maintenance of correspondence, or both (Israel & Brown, 1977; Risley & Hart, 1968; Whitman *et al.*, 1982; Williams & Stokes, 1982), and others have not (Israel & O'Leary, 1973; Karoly & Dirks, 1977). Reasons for this discrepancy are unclear, and analyses of the variables controlling generalization and maintenance of correspondence are generally not done. However, Williams and Stokes (1982) suggested that generalization of correspondence might occur only after training sufficient exemplars (Stokes & Baer, 1977; Stokes & Osnes, *in press*). Alternatively, they suggested that the discriminability of the reinforcement contingency might be the critical variable. That is, failure to obtain generalization or maintenance of correspondence might be due to cues, provided by the procedures, that allow the subjects to discriminate whether reinforcement is contingent on verbal/nonverbal correspondence or on production of verbal behavior alone. Generalization and maintenance, therefore, might be promoted by modifying the procedures to make the contingencies less discriminable.

Fowler and Baer (1981), in studying a variety of classroom behaviors, demonstrated that delayed reinforcement can promote generalization across settings and maintenance to later times in the day, presumably because it makes discrimination of the times and settings in which reinforcement is contingent on the target behavior very difficult. This technique can be incorporated into correspondence

training procedures. By delaying reinforcement of verbal behavior until after the opportunities for both the verbal and nonverbal behaviors have occurred, the discrimination between reinforcement contingent on verbal behavior alone and reinforcement contingent on correspondence can be rendered difficult or impossible. Whitman *et al.* (1982) and Baer, Osnes, and Stokes (1983) successfully used this delayed reinforcement technique to program maintenance and generalization of correspondence.

Thus, it appears that correspondence training is potentially a useful behavior change technique, especially when generalization and maintenance of correspondence can be achieved. To date, however, few formal investigations of generalization and maintenance of correspondence have been conducted (Karlán & Rusch, 1982). The results of Whitman *et al.* (1982) and Baer *et al.* (1983) point out the potential utility of delayed reinforcement for achieving these goals. The primary aim of this study, therefore, was to examine the programming of generalization and maintenance of correspondence through the use of delayed reinforcement as an indiscriminable contingency. In the following three experiments, the effects of delayed reinforcement on both generalization of correspondence to untrained behaviors and maintenance of correspondence with previously trained behaviors is investigated.

GENERAL METHOD

Children and Setting

Four children enrolled in a preschool in Morgantown, West Virginia, were selected to participate because preliminary work indicated that they followed the typical pattern reported in the literature, showing little or no verbal/nonverbal correspondence prior to training. Bob was 5 years old, and Mark, Ted, and Annie were 4 years old. None exhibited any major behavior problems. Bob and Mark were enrolled in the 8:45–11:30 a.m. weekday session of the program. Ted and Annie were enrolled in the 12:45–3:30 p.m. session.

Sessions were conducted daily in the preschool

playroom, which measured 5 m by 7 m. Play behaviors with toys used infrequently prior to baseline were chosen as targets. For each session, the target toys and three toys chosen by the preschool staff, were placed in the room. In the morning, there were four target toys (which were the same every day) and three nontarget toys (which varied across days). In the afternoon, three target toys and three nontarget toys chosen by the staff were placed in the room each day.

Definition of Target Behaviors

Play behaviors with five toys (books, crayons, kitchen set, beads, and play panels) and one social behavior (inviting a peer to play) were chosen as targets for intervention. Book play was defined as touching a book while looking at it; crayon play as touching the paper with a crayon while looking at the paper; kitchen play as facing the kitchen set while sitting or standing within 0.5 m of it; bead play as touching both bead(s) and string while looking at either bead(s) or string; and panel play as touching and looking at the play (buttoning, zipping, tying) panels. Inviting a peer to play was defined as directly addressing a particular child with a sentence or question that included the child's name and either requesting or demanding that the child engage in one of the available activities with the subject.

Measurement of Target Behaviors

All target behaviors were observed each day during a 15-minute free-play period. As the children promised to engage in the target behaviors, but not to do so for any particular length of time, occurrence of the target responses was scored either *yes* or *no*. These scores were the primary data of interest. However, it was hypothesized that the percentage of time that the child engaged in the target responses during the 15-minute free-play period would be informative. If the target behaviors developed reinforcing function, increasing trends might be seen. However, if the target responses remained less reinforcing than the other available activities, decreasing trends might be seen, as the children gradually learned that the reinforcers

could be earned by engaging in the target responses for a shorter period of time. To examine this question, interval data were also collected. Observation periods were divided into 10-s intervals. Observers recorded whether any child performed any target behavior within each 10-s interval. The occurrence of each behavior was expressed as the percentage of intervals in which the behavior occurred, except for invite-peer-to-play, which was scored only yes or no.

Procedure

Every day, the teacher (a clinical psychology graduate student) brought each child individually into the office adjoining the playroom and asked what the child intended to do during the immediately upcoming play period. Consequences for the child's verbalization varied across conditions and are described later. After all the children had answered, the observation period began, with 8–10 children, the observer(s), and one teacher in the room. The teacher and most observers were blind to the experimental conditions. The observers never interacted with the children. Interactions between the children and the teacher were usually brief, and occurred only when the children initiated them, or when necessary to prevent accidents or aggression.

Depending on the experimental condition in effect, consequences for various target behaviors were provided immediately after the observation period. In the morning session, the consequences intended to function as reinforcers were tokens, exchangeable later in the day for inexpensive trinkets. In the afternoon, "happy sacks" were used (Sulzer-Azaroff & Mayer, 1977). Ted's bag contained slips of paper, with various consequences written on them, such as hugs, tosses in the air, swings, tickles, piggyback rides, or picking a toy (an inexpensive trinket). Annie's bag, for example, contained consequences such as singing a song for the other children, telling a story for the other children, choosing two toys to be available during the next play period (after the observation for that day had been done), being first in line to go to the bathroom, leading a 5-min game of "Simon Says,"

choosing one food to be served during snack, playing a 5-min game of cards with the teacher, or having a 5-min talk with a secretary.

Experimental Conditions

Baseline. During the questioning period, the teacher asked each child, "What are you going to do during the play today?" The children always responded to the question. Regardless of the child's response, the teacher replied "OK."

Immediate reinforcement of verbalization. Children were asked what they were going to do during play and then were prompted to state that they would engage in the behavior selected by the experimenters as the current target for intervention. For example, the teacher might say, "What are you going to do during play today? Are you going to play with the books?" If the reply was "yes," the teacher would prompt a full sentence ("I'm going to play with the books") and then provide praise (such as, "Good idea!" or "Sounds like fun!") and a token. If the reply was "no," the teacher would say, "Then I can't give you a token today." Tokens were exchangeable later in the day for inexpensive trinkets. All children learned to respond with the correct, complete sentence, without prompts, within two or three sessions.

Delayed reinforcement of verbalization. The questioning period procedures were unchanged, except that praise without a token or grab bag was provided for a correct verbalization. Consequences were now presented after the play period, although they were contingent only on making the correct verbalization during the questioning period. That is, after play, if the child had verbalized correctly during the questioning period, the teacher now would take the child aside and say, "You said you would —. That's very good!" and give the child a grab bag or token. These consequences were provided regardless of whether the child had actually performed the target response, and the teacher did not mention whether the child had performed it.

Reinforcement of correspondence. Procedures were identical to those in the delayed reinforcement of verbalization condition, except that the consequence was presented contingent on both promis-

ing to engage in and actually engaging in the target behavior. For example, if the child had played with the promised toy, the teacher would take the child aside and say, "You said you would —, and you did! That's very good!" and give the child a token or a chance at the grab bag. If the child had promised to engage in the target response but had not done so, the teacher would say, "You said you would —, but you didn't, so I can't give you a token (grab bag) today."

Consequences for correspondence and for delayed reinforcement of verbalization were always provided individually, when no other children were present. To avoid reinforcing momentary touching of the target toys, criterion for the reinforcement of correspondence was defined as playing with the promised toy for a minimum total of six 10-s intervals (7% of intervals) during the 15-min play period. If the child had played with the promised toy, but for fewer than six intervals, the child was told that she or he had not played with the toy for a long enough time to receive a positive consequence.

Design

Each child was studied in a multiple-baseline across behaviors. The number and order of experimental conditions varied across children, because the children were not studied simultaneously. Therefore, procedures used later in the study were based on earlier results. Thus, each child constitutes a controlled experiment: Later children provided systematic replications of procedures used with previous children.

Reliability

Data were collected by one or two observers. The second observer was present during 50% of the sessions to collect the same data independently. Observers sat several feet from each other so that neither could see what the other was recording. Percentages of agreement were calculated for occurrences (Sulzer-Azaroff & Mayer, 1977) of play with each toy and invitations to a peer. An agreement was counted if both observers recorded that a particular child emitted a particular response

during a given 10-s interval. A disagreement was counted if one observer recorded that a particular child emitted a particular response during a given 10-s interval and the other observer did not. The percentage of agreement was then calculated by dividing the number of agreements by the number of agreements plus the number of disagreements. Percentages of agreement for occurrences of bead play averaged 83% (range, 43% to 92%); for book play, 92% (range, 83% to 100%); for kitchen play, 84% (range, 69% to 100%); for crayon play, 95% (range, 87% to 100%), for panel play, 86% (range, 79% to 97%); and for invitations to a peer, 100%.

EXPERIMENT 1: BOB

This experiment was designed to investigate whether training correspondence with one or a few responses would result in generalization of correspondence to untrained responses, or generalized verbal control, as reported in previous studies (Israel & Brown, 1977; Risley & Hart, 1968; Williams & Stokes, 1982). The occurrence of generalization would suggest that training of sufficient exemplars (Stokes & Baer, 1977) can effectively lead to generalization of correspondence. The non-occurrence of generalization would suggest that the contingencies were discriminable by Bob, and that a manipulation such as delayed reinforcement was necessary to make the contingencies indiscriminable. If this manipulation proved successful, its effects would be demonstrated in a multiple-baseline across responses. Effects on previously untrained responses would be seen as generalization; effects on previously trained responses as maintenance.

Method and Design

Procedures were conducted as described above. Four toy play behaviors were targeted (books, crayons, kitchen, beads). Immediate reinforcement of verbalization and reinforcement of correspondence were implemented in multiple-baseline form across three responses (kitchen, crayons, books). Delayed reinforcement of verbalization was then implemented in a multiple-baseline across three responses (books, kitchen, beads).

Results and Discussion

Bob's data are presented in Figure 1. After baseline, immediate reinforcement of verbalization with the kitchen was introduced. Only a transitory increase in occurrence of kitchen play was seen (Days 8–16). Therefore, reinforcement of correspondence was begun, and kitchen play occurred much more frequently, surpassing the criterion for reinforcement (7%) on all but one day. Similar patterns were then seen with the second and third target toys (crayons, books). Immediate reinforcement of verbalization (Days 27–30; 41–44) provided a test of generalization to these untrained responses. Little or no generalization of correspondence training was seen. When Bob was given reinforcement of correspondence again, both responses occurred more frequently.

These data do not replicate the generalization of correspondence reported by Risley and Hart (1968), Israel and Brown (1977), and Williams and Stokes (1982). In accordance with the suggestion of Karlan and Rusch (1982), a brief investigation of maintenance was conducted by returning to the immediate reinforcement of verbalization condition with the last response that had been trained (books; Days 58–61). No maintenance was seen: Rate of responding returned to 0%.

It was concluded that Bob had discriminated the contingencies because he consistently showed high rates of correspondence behavior on days that his verbalization did not result in an immediate token, but showed little or no correspondence behavior on days that he received a token immediately following the correct verbalization. Thus, it appeared that the presentation of the token immediately following the verbalization functioned as a discriminative stimulus for not playing with the target toy. The delayed reinforcement of verbalization condition was introduced in an attempt to reduce the discriminative function of the token while preserving the contingent relationship between making the correct verbalization and receiving the token. That is, if the token was not presented until after play, it could not function to inform Bob that he had already met the require-

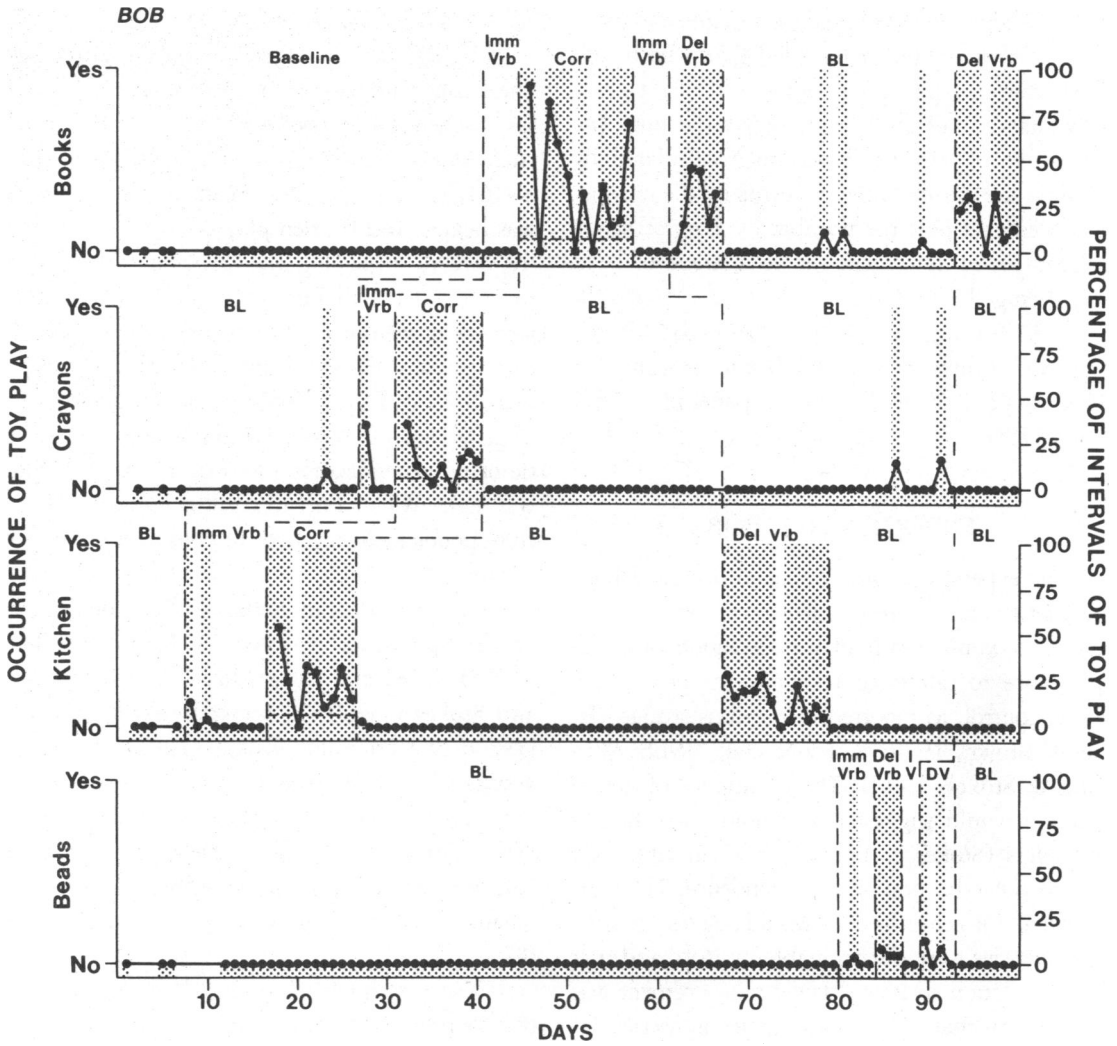


Figure 1. Occurrence of toy play behaviors (shading) and percentage of intervals of toy play behavior (lines and dots) for Experiment 1 (Bob), during baseline (BL), immediate reinforcement of verbalization (Imm Vrb), reinforcement of correspondence (Corr), and delayed reinforcement of verbalization (Del Vrb). Dashed horizontal lines indicate criterion for reinforcement of correspondence (7% of intervals). The first day of correspondence training was identical to the preceding condition until after the day's behavior had been emitted and the consequences were delivered. Because this day is atypical of the rest of the condition, these points have been omitted from all the data presented.

ments of the contingency, and need not play with the promised toy. When this condition was implemented, first with books (Days 62–67) and later with kitchen (Days 68–79), increases were observed in performance of the target behaviors.

Next, a brief series of reversals between immediate reinforcement of verbalization and delayed reinforcement of verbalization was applied to bead

play (Days 81–92), to show the differential effects of these two conditions. During the first immediate reinforcement of verbalization condition, bead play occurred on one of four days. During delayed reinforcement of verbalization (Days 85–87), bead play occurred on all three days. With a reversal to immediate reinforcement of verbalization (Days 88–89), responding immediately decreased to 0%

for two days. With the return of delayed reinforcement of verbalization, responding occurred on two of four days.

Finally, delayed reinforcement of verbalization was replicated with books (Days 94–100). Book play was shown on six of seven days.

Thus, it was shown that delayed reinforcement of verbalization effectively controlled maintenance of correspondence with previously trained responses, within the multiple-baseline design. It also controlled generalization of correspondence to one untrained response (bead play).

EXPERIMENT 2: MARK

The investigation of Mark's behavior began after much of Bob's data had been collected. With Bob, delayed reinforcement had been used only after correspondence training had occurred with three of the four target responses. Therefore, its effects could be examined primarily on maintenance of correspondence with previously trained responses, with the examination of its effect on generalization to untrained responses restricted to one behavior. Consequently, the design for Mark was planned to explore further the use of delayed reinforcement to promote generalization of correspondence to untrained responses. Therefore, the delayed reinforcement of verbalization condition was introduced with Mark after training correspondence with only one target response, to examine its effects on generalization of correspondence across untrained responses. In addition, delayed reinforcement of verbalization was introduced with one target response before correspondence training occurred, to assess whether delayed reinforcement of saying would control doing prior to any formal correspondence training history.

Method and Design

The procedures were conducted in much the same way as with Bob; play behaviors with the same toys were targeted, and experimental control of the delayed reinforcement procedures was in multiple-baseline form across responses.

Results and Discussion

Toy play for Mark is presented in Figure 2. Delayed reinforcement of verbalization with crayons was the first condition introduced after baseline. No change in the corresponding nonverbal behavior occurred ($M = 0\%$). Therefore, reinforcement of correspondence was introduced, and crayon play occurred on all three days. Delayed reinforcement of verbalization then was reintroduced, and controlled corresponding nonverbal behavior with crayons (Days 15–17). This control was then replicated with book play (Days 18–20), kitchen play (Days 21–24), and bead play (Days 25–28). Thus, delayed reinforcement of verbalization proved to be an effective method of promoting generalization of correspondence training to untrained behaviors. However, experimental conditions were short, and declining trends were evident in the interval data. Therefore, after a break in data collection due to summer vacation, delayed reinforcement of verbalization was reintroduced with books, to test the durability over time of the effects of the delay procedures. A high rate of responding was seen for six days (Days 33–38) before decreasing to 0% for three days (Days 39–41). A short delayed reinforcement of verbalization condition with the kitchen set also resulted in no responding (Days 42–44). As no correspondence had occurred for six days, it was concluded that Mark had discriminated that reinforcement was contingent only on verbal behavior.

To regain control of correspondence behavior, "booster sessions" in reinforcement of correspondence were introduced with the kitchen set on Day 45. Kitchen play immediately resumed, and reached criterion for reinforcement on all but one day. Delayed reinforcement of verbalization was then introduced, first with books and later with beads, and consistent generalized correspondence was seen.

Mark's data provide further evidence that delayed reinforcement can effectively control generalization of correspondence to untrained behaviors. Maintenance of previously trained behaviors was also shown. In addition, the results suggest that generalization that has been achieved but then lost

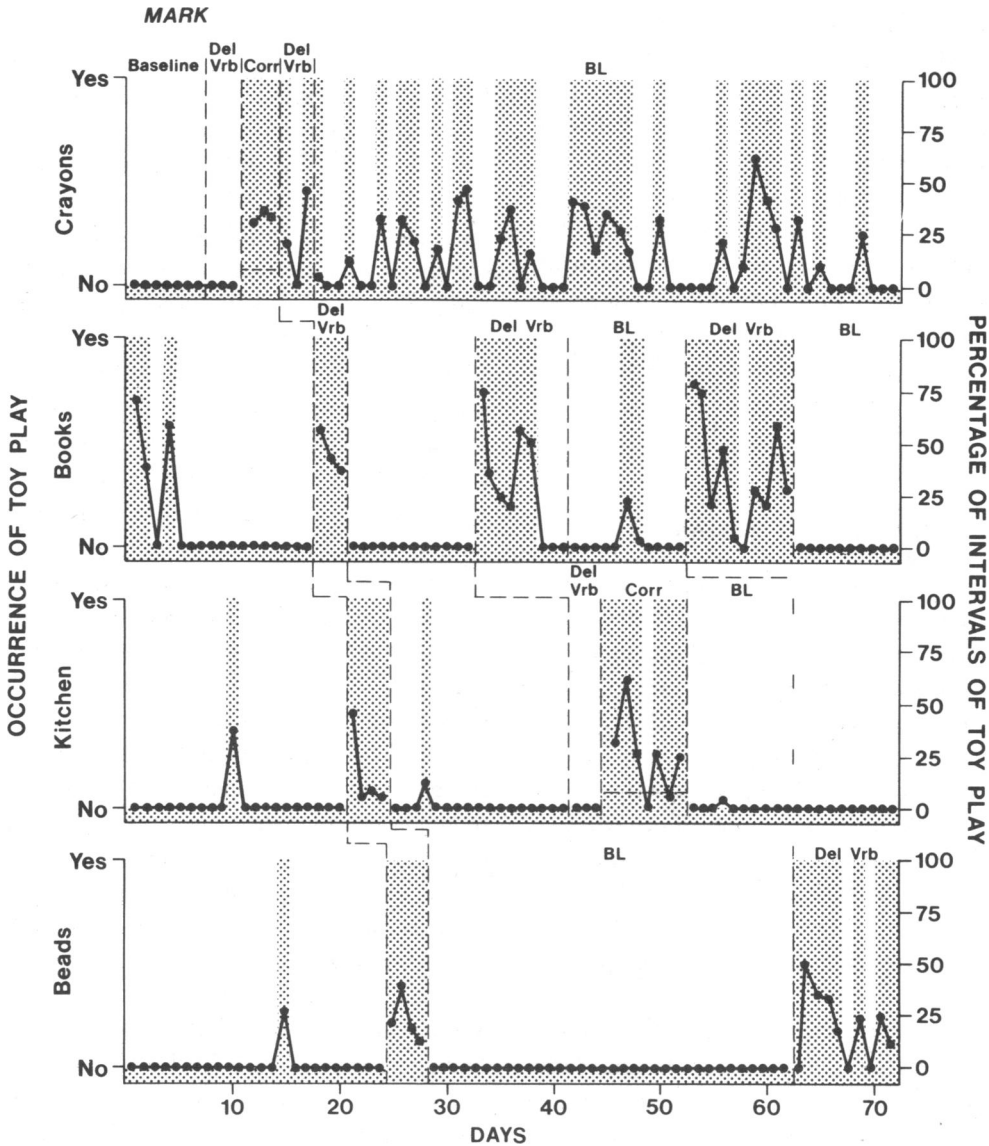


Figure 2. Occurrence of toy play behavior (shading) and percentage of intervals of toy play behaviors (lines and dots) for Experiment 2 (Mark), during baseline (BL), delayed reinforcement of verbalization (Del Vrb), and reinforcement of correspondence (Corr). Dashed horizontal lines indicate criterion for reinforcement of correspondence (7% of intervals). The first day of correspondence training was identical to the preceding condition until after the day's behavior had been emitted and the consequences were delivered. Because this day is atypical of the rest of the condition, these points have been omitted from all the data presented.

can be recovered through use of "booster training," in which the original contingencies are reinstated for a brief period. Last, they provide some evidence that a history of reinforcement of correspondence may be necessary before delayed reinforcement of verbalization will control corresponding nonverbal behavior.

EXPERIMENT 3: ANNIE AND TED

Annie and Ted provided replications of the effects of delayed reinforcement of verbalization on maintenance of previously trained responses. Both children had previously participated in a reinforcement of correspondence procedure in which cor-

respondence between promises made at school and nonverbal behaviors to occur many hours later at home had been attempted unsuccessfully. Therefore, it seemed important first to establish that correspondence behavior could be controlled in these children by training it more directly. The effects of delayed reinforcement of verbalization on maintenance of these responses then were examined.

Method and Design

Procedures were conducted as described earlier. Annie's target behaviors were inviting a peer to play and crayon play. Ted's target behaviors were panel play and bead play. After collection of baseline data, correspondence training was conducted in a multiple-baseline across two responses for each child, as well as across children. The effects of the delayed reinforcement procedure on the maintenance of correspondence with these behaviors then were examined within a multiple-baseline across responses.

Results and Discussion

Data for Annie and Ted are presented in Figure 3. During baseline, Annie invited a peer to play only once, and exhibited a minimal amount of crayon play. Reinforcement of correspondence, when introduced with inviting a peer to play and then with crayon play, produced increases in both behaviors. Delayed reinforcement of verbalization then was implemented, during two conditions with crayons and one condition with inviting a peer to play, to test for maintenance of correspondence. Correspondence occurred in each condition when it was applied, effectively controlling maintenance of correspondence for both target behaviors.

Similar results were obtained with Ted. During baseline, no panel play and very little bead play was seen. Reinforcement of correspondence resulted in substantial increases in occurrence of play with the panel and the beads when it was applied to these behaviors. Finally, delayed reinforcement of verbalization was associated with the maintenance of panel and bead play.

Annie and Ted provide additional evidence that delayed reinforcement of verbalization can be used

to program maintenance of correspondence after training has ended. Control of the effects of delayed reinforcement of verbalization was shown in multiple-baseline form across behaviors for each child.

GENERAL DISCUSSION

Our study adds to the existing correspondence training literature an analysis of a method of programming generalization and maintenance of correspondence: using delayed reinforcement as a technique for making contingencies indiscriminable. That is, by delaying reinforcement for verbal behavior until after the opportunity to display the corresponding behavior had occurred, correspondence behavior was made to generalize to untrained responses and to maintain over time. These results support the findings of Fowler and Baer (1981), who showed that delayed reinforcement can facilitate the generalization of a variety of behaviors by making it difficult for the subjects to discriminate whether or not behaviors that occur during the delay period are part of the contingency. They also support the results of Whitman et al. (1982), and Baer et al. (1983), who used delayed reinforcement to promote maintenance and generalization of correspondence, as well as Koegel and Rincover (1977), who used occasional non-contingent consequences as indiscriminable contingencies to control maintenance of behavior.

The indiscriminability of the contingency is evidenced by several data points: Figure 1: Day 60 (books), Day 74 (kitchen), Day 91 (beads), Day 97 (books); Figure 2: Day 58 (books), Day 68 (beads), Day 70 (beads); Figure 3: Day 25 (crayons). These points all occurred during delayed reinforcement of verbalization conditions. On these days, the child made the correct promise, did *not* play with the promised toy, and then was told, "You said you would play with the — today. That's very good! You get a token (prize from the grab bag)." In spite of this exposure to the actual contingency in effect, however, these children continued to play with the promised toy on the following days. This suggests that delayed reinforcement is an effective method of making contingencies

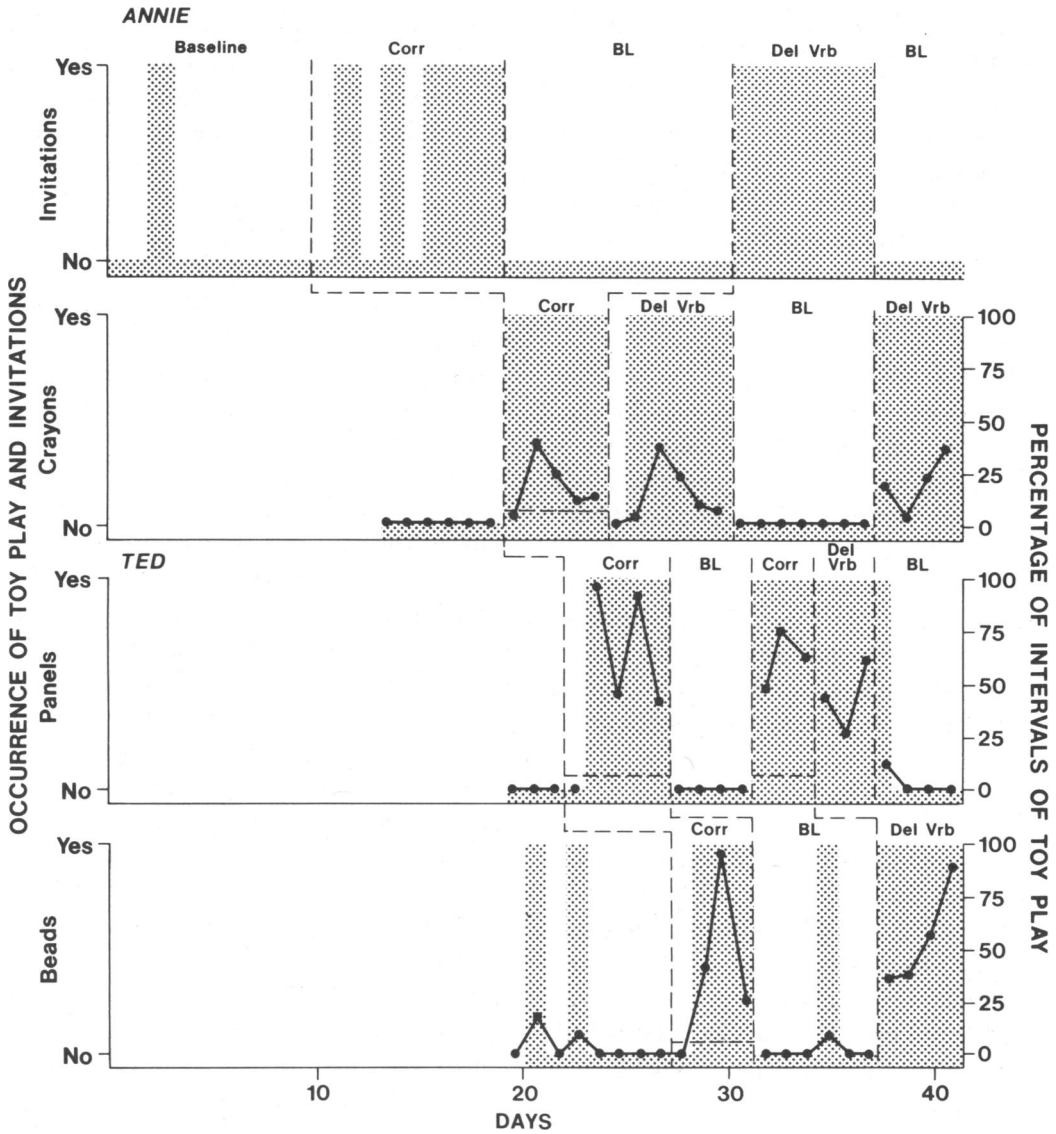


Figure 3. Occurrence of target behaviors (shading) and percentage of intervals of target behaviors (lines and dots) for Experiment 3 (Ted and Annie), during baseline (BL), reinforcement of correspondence (Corr), and delayed reinforcement of verbalization (Del Vrb). Dashed lines represent criterion for reinforcement of correspondence (7% of intervals). The first day of correspondence training was identical to the preceding condition until after the day's behavior had been emitted and the consequences were delivered. Because this day is atypical of the rest of the condition, these points have been omitted from all the data presented.

indiscriminable, as, even when the opportunity arose to discriminate the contingency, the children did not demonstrably do so.

In interpreting the graphs, it is important to note that the primary data are the occurrence/nonoccurrence of the target behaviors. Coding the

data this way was necessitated by the procedures, in which children made promises that they either kept or did not keep. As baseline rates of the target behaviors were almost uniformly 0%, any occurrence of these behaviors in response to the experimental manipulations was seen as a successful out-

come, even if the *percentage* of time that these responses occurred was quite low. The observed declining trends in the interval data suggest that the target responses generally had little or no natural reinforcement value, that the children engaged in them only because they had promised to, and that they learned gradually that they could fulfill their promises and earn reinforcers by engaging in them for short periods of time. It might be appropriate to teach children to make promises in more precise terms; for example, "I'm going to play with the beads for most of the play period," rather than, "I'm going to play with the beads." The precise nature of the target behaviors should control the promises that the children are taught to make.

Our results suggest that generalization of correspondence that has been achieved but not maintained can be recovered by reinstating the original training contingencies for a brief period. This finding has practical implications for the programming of maintenance. When such maintenance appears to be transitory, "booster sessions" may be cost-effective for promoting maintenance over considerable periods of time. Similar types of remedial intervention have been proposed as a means of enhancing the persistence of behavior change (Bandura, 1969; Eysenck & Rachman, 1965) and have been used in behavioral intervention programs for weight control (Ashby & Wilson, 1977; Kingsley & Wilson, 1977), enuresis (Lovibond, 1964), and parent training (McDonald & Budd, 1983).

The procedures of this study allow an examination of maintenance of each target behavior in the absence of a promise relevant to that behavior (Karlan & Rusch, 1982). Very little maintenance was seen, except with one target behavior (crayons) with one child (Mark). This suggests that further research is needed to develop strategies for promoting maintenance of responses initially taught through correspondence training. Perhaps an intermittent reinforcement of correspondence procedure would give the target behaviors sufficient resistance to extinction that they would maintain without requiring that the teacher evoke a promise, monitor the behavior, and provide consequences on a

daily basis. Intermittent delayed reinforcement of verbalization also might be effective in promoting maintenance.

An issue central to this area of research is the significance of correspondence training procedures for the treatment of clinical problems. Correspondence that will generalize to a variety of untrained behaviors is potentially more useful than correspondence that is limited to a few specifically trained responses. Thus, our study contributes to the practical utility of correspondence training procedures by demonstrating a method for programming generalization and maintenance of correspondence, as well as for recovering generalization if it is lost.

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