*CORRESPONDENCE BETWEEN SAYING AND DOING:
TEACHING CHILDREN TO SHARE AND PRAISE¹*

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Five small groups of preschool children were taught to share and praise by the modelling of these behaviors and reinforcement of their reports of sharing and praising. Experiment I demonstrated that modelling and reinforcement of any (true or untrue) reports of sharing, and then of praising, promptly increased reports of the corresponding behaviors. Modelling and reinforcement for true reports of each behavior increased both reporting and actual behavior. Experiment II showed that both reported and actual sharing and praising may be increased by modelling and reinforcement for true reports of the target behavior, without previous reinforcement for any (true or untrue) reports of those behaviors. Sharing, but not praising, generalized to a second setting. Experiment III replicated the results of Experiment II for sharing and praising, and demonstrated similar success in increasing a third behavior, specific praising. In general, these experiments show that developing correspondence between children's reports of behavior and actual behavior may be an efficient means of increasing prosocial responses.

DESCRIPTORS: social behavior, sharing, modelling, praise, reporting, generalization, multiple baseline, reinforcement delay, children

In a very broad sense, verbal behavior is similar to currency. At any given time, there may not be sufficient gold to back up every dollar exchange, but sellers and buyers usually act as if there were. In interactions among adults, there is a similar continual exchange of verbal reports, generally as if there is, or will be, some other behavior to correspond to the verbal reports, make them true, and give them value. While operant research has not yet attempted to define the parameters of truth-telling among adults, a number of researchers (*e.g.*, Bem, 1967; Birch, 1966; Lovaas, 1961; Lovaas, 1964*b*; Risley and Hart, 1968; Sherman, 1964) have investigated the relationship between young children's verbal behavior and their corresponding other behaviors.

Investigations in the area of verbal self-control of behavior have generally taken one of two forms. In the first form (*e.g.*, Bem, 1967; Birch, 1966; Lovaas, 1964*a*; Luria, 1961; Meichenbaum and Goodman, 1969), subjects have been taught to make a relevant verbal response while performing a motor response. Such studies have shown that certain verbal responses facilitate the corresponding motor response. For example, Lovaas (1964*a*) demonstrated that subjects who said the word "faster" as they pushed a lever, would depress the lever more quickly than subjects who said the word "slower". Bem (1967) reported that, in a task requiring children to press a lever to indicate the number of stimuli that were presented briefly and then withdrawn, those who counted as they pressed the bar responded more accurately than those who did not.

Within the same paradigm, several authors (*e.g.*, Meichenbaum and Goodman, 1971; Monohan and O'Leary, 1971; O'Leary, 1968) have demonstrated that training a child to self-instruct may facilitate appropriate responding

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and impede inappropriate responding. For example, O'Leary (1968) found that when subjects were told to respond only on certain trials, in an experiment where responding on any trial resulted in reinforcement, those subjects who gave self-instructions indicating whether they could respond on a particular trial, "cheated" less than those who did not self-instruct.

Risley and Hart (1968) provided a strong demonstration of the control of behavior through reinforcement of related verbal behavior. Two groups of preschool children were initially rewarded for any (true or untrue) report of the use of a specific preschool material. Reinforcement was then made contingent on only true reports, that is, those reports that corresponded to the actual use of the material. While reinforcement for corresponding reports successfully increased the subjects' use of materials, after the noncorrespondence-correspondence sequence of contingent reinforcement had been repeated a number of times, reinforcement for any (corresponding or noncorresponding) report was sufficient to increase significantly the use of a specific material. To that extent, Risley and Hart were able to demonstrate that "saying" could be brought to control "doing".

Israel and O'Leary (1973) further examined the role of verbal behavior in regulating non-verbal behavior. In two comparisons of saying-then-doing, they found that having preschool subjects say which toy they were going to play with during the next play period produced greater correspondence between saying and doing, than having subjects report which toy they had played with after the play period. Only slight increases in correspondence occurred when subjects were rewarded for the desired (but not necessarily true) content of their reports. Unlike Risley and Hart (1968), Israel and O'Leary did not find that saying came to control doing for children in the doing-then-saying sequence when only content was reinforced, even after a series of reinforcement-for-content (noncorrespondence) followed by reinforcement-for-correspondence. Further, Israel and O'Leary did not, as

had Risley and Hart, obtain high levels of correspondence for the doing-then-saying groups, even when correspondence was reinforced.

Direct comparison between the two studies is difficult because correspondence was defined by Risley and Hart as "doing and saying", while Israel and O'Leary defined it as "either doing and saying *or* not doing and not saying". The direct measures of positive correspondence (percentage of subjects saying and percentage of subjects doing) are not reported by Israel and O'Leary.

Whatever differences there may be in immediate efficiency of the saying-then-doing and doing-then-saying sequences, both are based on the same procedural approach. If the two sequences are abstracted, and viewed as they operate over a number of sessions, it is apparent that in both cases the subjects' verbal behavior is intended to affect the *next* opportunity to perform the corresponding behavior. The primary difference is that in the first case (saying-then-doing) that opportunity arises within a few minutes, and in the second (doing-then-saying), the opportunity does not arise until approximately 23 hr later.

If range of control, that is, the length of time during which verbal statements might affect the corresponding behavior, is of concern, then the doing-then-saying sequence might be more useful. Such a sequence might contribute to the generalization of the corresponding behaviors to other opportunities not specifically included in training, but occurring within the temporal range of the training. For example, a child who plays with blocks during the designated play period, might also play with them at home during the evening, thus establishing correspondence between his/her verbal report and actual behavior on more than one occasion.

Both the Risley and Hart, and Israel and O'Leary studies focused on establishing correspondence, using choice of play materials as the behavior to be increased. The present study was concerned primarily with producing many instances of particular prosocial behaviors by establishing correspondence between the chil-

dren's verbal reports and their related prosocial behavior. Since the target behaviors, sharing and praising, should be useful in a number of settings, the apparently greater range of the doing-then-saying sequence made it the preferred procedure. The purpose, then, was to develop an effective procedure for increasing complex social behaviors based on the previously demonstrated techniques for developing correspondence between children's saying and doing.

GENERAL METHODS

Since the same procedures were used in all three experiments, the general methods are described first.

Subjects

All subjects were children attending the Edna A. Hill Child Development Preschool Laboratory at the University of Kansas. Thirty-two children were involved in the three experiments, 19 males and 13 females ranging in age from 3 yr, two months, to 5 yr, six months.

Setting

Experimental sessions were conducted daily, Monday through Thursday. Each session lasted about 15 min. The experimental sessions were divided into two parts, the work period (10 min) and the reporting period (about 5 min). The subjects were seated on the floor, around a large piece of paper, and had access to art materials (paper, pens, pencils, crayons, markers) during the work period. The experimenter changed the seating arrangement each day by placing cards with the subjects' names on them around the paper and requesting subjects to sit behind their own name card. At the end of the work period, the materials were collected and an activity called the Reporting Period began. During the Reporting Period, the experimenter asked the children individually what they had done "while we were working today". Every subject was given one opportunity to respond. The session ended when each child had been

queried and the experimenter indicated it was time to go to another activity or return to the classroom.

Behavioral Definitions

The behaviors recorded for the subjects were sharing, praising, and reports of sharing and praising. Experimenter prompts and reinforcement of reports were also recorded.

Sharing. Two classes of sharing, verbal sharing and nonverbal sharing, were recorded. Verbal sharing included any verbalization by a subject to a peer in which the subject: (1) invited a peer to join in a particular activity, or (2) verbally accepted the invitation of a peer to join in a particular activity, or (3) offered to share materials with a peer, or (4) verbally accepted a peer's offer to share materials, or (5) offered to trade materials with a peer. Nonverbal sharing was recorded when one subject passed or handed a material to a second subject, if both subjects had touched the material within 5 sec, or when two or more subjects simultaneously used the same material (*e.g.*, colored on the same sheet of paper at the same time).

Praising. Praising was defined as any verbalization by a subject to a peer in which the subject indicated approval, liking, or admiration for the peer or any aspect of the peer's art work. There was essentially four forms of praise: (1) "I like . . ." and a general object (*e.g.*, "I like your *picture*"); (2) "I like . . ." and a specific object or quality (*e.g.*, "I like *the way you used the color blue*"); and (3) direct general praise (*e.g.*, "neat picture" or "pretty"); and (4) direct specific praise (*e.g.*, "Nice *dogs*" or "That's a pretty *house* you made"). In Experiments I and II, all four forms were recorded under the general category of "Praise"; in Experiment III, Form 1 ("I like . . ." and a general object) was scored as "General Praise", and Forms 2, 3, and 4 were scored as "Specific Praise".

Reporting. Subjects were recorded as making a report of sharing or praising whenever they responded to the experimenter's question, "What did you do while we were working today?", with

a statement indicating that they had shared materials or had praised a peer (e.g., "I shared my pen with Susie", or "I told Jon I liked his picture"). In Experiment III, reports of praise were scored as either "General" or "Specific", using the same criteria as employed for general and specific praising behaviors.

Experimenter-behaviors. Two experimenter-behaviors, reinforcement of reports and prompts for reports, were also recorded. Reinforcement was scored whenever the experimenter indicated to a subject that she approved of the behavior the subject reported and offered a bit of food (M&M's or fruit) immediately following the report. Prompts were scored each time the experimenter corrected a child's verbal response, or modelled a response and instructed a child to repeat it during the reporting period.

Recording Procedures

Two observers were seated within viewing and hearing distance of the group of subjects, one observer at each of the narrow ends of the paper on which the subjects were working. Each observer recorded the behaviors of the three or four children closest to her, depending on the size of the group. Continuous observations were made of the children's behaviors during the work period; discrete observations of each subject's verbal report and the experimenter's behaviors were made during the reporting period.

Observers recorded instances of sharing and/or praising on the current subject's form by writing a symbol identifying the peer to whom the behavior was directed, in the appropriate column identifying the type of material shared or the type of praising used. Experimenter reinforcement and prompts were recorded each time they occurred. Reports of sharing and praising were scored only once for each subject, immediately following the experimenter's questioning of that child.

Reliability was assessed by having a third observer record independently, but simultaneously, with each of the primary observers. Interobserver agreement was determined by comparing the

number of behaviors recorded by each observer for a given subject in a particular category of behavior. For example, observer A's record of pen sharing by S1 with S2 was compared with observer B's record of pen sharing by S1 with S2. Similar comparisons were made for all materials, for praising, for reports of behaviors, and for experimenter behaviors directed to each subject. Each reliability was then calculated using the formula:

$$\text{Reliability} = \frac{\text{number of agreements}}{\text{number of agreements} + \text{number of disagreements}} \times 100.$$

Experimental Conditions

Baseline. During the initial baseline conditions there were no scheduled consequences for sharing, praising, or reports of sharing or praising. The experimenter and an adult model sat at a small table behind, but in sight of, the group and used the same art materials as were available to the subjects. Neither sharing nor praising was modelled. Throughout the work period, the experimenter intermittently praised the subjects for "working hard" and attending to the materials. If a subject shared or praised, the experimenter waited at least 10 sec before attending to any subject. During the reporting period, each child was questioned about his/her activity during the previous work period, but no reinforcement for appropriate responses was given.

Modelling only. To determine if modelling alone would result in the desired behavior, the experimenter and the model demonstrated the appropriate response five or six times during the work period. No model of appropriate reporting behavior was provided, and no reinforcement for reports of sharing or praising was available.

Package 1: modelling and reinforcement for any report of the behavior. The first part of the package manipulation consisted of the experimenter and the model demonstrating the appropriate response, either sharing or praising, as had been done in the Modelling Only condition. The topography of sharing and praising behaviors was systematically varied. In Experiments I and

II, both general and specific praising responses were modelled during the praising condition. In Experiment III, only general praise was modelled during the manipulation of general praising, and only specific praise was modelled during the specific praise condition.

At the beginning of the reporting period, the experimenter asked the model what he had done while he was working. When the model reported the appropriate behavior, the experimenter rewarded him with positive comments and food. The subjects were then asked individually what they had done during the work period. Any report, true or untrue, of sharing or praising, depending on the experimental condition, was followed by positive comments, and either M&M's or fruit, from the experimenter.

When Package I was introduced to any group, it was sometimes necessary for the experimenter to prompt two or three subjects to make an appropriate report (e.g., "Tell me that you shared"). After at most three sessions, all prompting was discontinued. Subjects were not recorded as reporting appropriately if the report was prompted.

Package II: modelling and reinforcement for true reports of behavior. The second package was procedurally similar to the first, except that only true reports of sharing or praising were reinforced. As the subject responded to the experimenter's query, the observer who had recorded that subject's behavior discreetly signalled "yes" or "no" to indicate if the subject was reporting truly. True responses were reinforced. When a subject reported untruly, the experimenter responded, "But you didn't really, did you?" No response was made following an inappropriate report (e.g., a report of sharing in a condition when reports of praise were being reinforced); the experimenter paused 5 sec, then asked the next subject about that subject's activities.

Package III: modelling and reinforcement for either true reports of sharing or true reports of praising. During Package III, the experimenter and the model demonstrated both sharing and

praising, and the model reported both sharing and praising. Subjects were rewarded for true reports of either behavior. That is, if they either shared or praised, and gave a corresponding report, they were rewarded. All other procedures were identical to Package II.

Package IV: modelling and reinforcement for true reports of both sharing and praising. Package IV consisted of modelling both sharing and praising responses and delivering reinforcement contingent on true reports of both sharing and praising. Except that each subject was required to do and report both behaviors, the procedures were identical to Package II.

Reliability

Reliability figures for all subject and experimenter behaviors are shown in Table 1.

EXPERIMENT I

METHOD

Subjects

The 14 subjects selected for this study were divided into two groups. Group A was made up of six children: one 4-yr-old girl, two 3-yr-old girls, and three 4-yr-old boys. Group B consisted of eight children: two 4-yr-old girls, five 4-yr-old boys, and one 3-yr-old boy.

Setting

The study was conducted in a regular preschool classroom, in an area away from other classroom activities. While an experimental session was being conducted with one group, members of the other group participated in conceptual activities in different parts of the same classroom, and generally did not attend to the experimental activity.

Experimental Design

Experiment I consisted of two parts. In the first part, reinforcement of any report of behavior (Package I), followed by reinforcement of only true reports of behavior (Package II), was systematically introduced in a multiple-

Table 1

Range and Mean Reliability for Subject and Experimenter Behaviors in Experiments I, II, and III

Behavior	Group A		Group B		Group C		Group D		Group E	
	Range	$\bar{X}$	Range	$\bar{X}$	Range	$\bar{X}$	Range	$\bar{X}$	Range	$\bar{X}$
Sharing	88-100	92	75-100	89	88-100	91	62-100	90	69-100	86
General praising*	85-100	91	88-100	94	83-100	93	66-100	91	79-100	92
Specific praising	—	—	—	—	—	—	80-100	92	86-100	88
Reports of sharing	75-100	94	—	100	—	100	—	100	75-100	92
Reports of praising*	88-100	91	—	100	—	100	75-100	100	—	100
Reports of specific praising	—	—	—	—	—	—	0-100	90	—	100
Experimenter reinforcement	—	100	—	100	—	100	—	100	—	100
Experimenter prompts	—	100	—	100	—	100	—	100	—	100

*In Experiments I and II, all praising and reports of praising were recorded in the category of General Praising, hence reliability scores are reported only for the category of General Praising.

baseline design across sharing and praising by Group A. In the second part, these procedures were replicated with Group B, and then two additional conditions, reinforcement for true reports of either behavior (Package III), followed by reinforcement of true reports of both behaviors (Package IV), were examined.

The sequence of experimental conditions for this experiment is summarized in Table 2.

All experimental conditions were identical to those described in the General Methods section.

RESULTS

Group A

The results for Group A are shown in Figure 1.

The introduction of reinforcement of any report of behavior (Package I) resulted in a gradual increase in mean number of shares, double-to-triple the baseline rate, and the percentage of the group reporting sharing steadily increased. The percentage of group members sharing was variable, ranging from 0% to 100%, but averaged higher than during baseline. Under the same conditions (Package I), mean praising increased only slightly, although the percentage of the group praising and reporting praising increased markedly.

When reinforcement was provided for true reports of sharing (Package II), the mean number of shares increased to a consistent level of around four shares per child per session. Percentage of the group sharing was moderately high, while reports of sharing steadily rose to a high of 90%.

Reinforcement for true reports of praise (Package II) resulted in sharp upward trends in both reporting and actual praising. A more gradual increase was seen in the mean number of praises per session.

Group B

Similar results for Group B are shown in Figure 2.

For Group B, which had exhibited a moderate level of sharing during baseline, reinforcement for any report (Package I) produced no significant increase in either the percentage of the group displaying sharing, or the mean number of shares per subject. The same procedure applied to praising resulted in a slight increase in the mean number of praises and produced moderate increases in the percentages of the group reporting and praising.

Reinforcement for true reports of behavior (Package II) further increased the mean number of shares and praises. Additional increases in

Table 2

The Sequence of Experimental Conditions in Experiment I

<i>Group A</i>		<i>Group B</i>	
<i>Sharing</i>	<i>Praising</i>	<i>Sharing</i>	<i>Praising</i>
Baseline <i>Package I</i> Model sharing Model reports of sharing Reinforce <i>any</i> reports of sharing	Baseline	Baseline	Baseline
Baseline	<i>Package I</i> Model praising Model reports of praising Reinforce <i>any</i> reports of praising	Model sharing	
<i>Package II</i> Model sharing Model reports of sharing Reinforce <i>true</i> reports of sharing	Baseline	<i>Package I</i> Model sharing Model reports of sharing Reinforce <i>any</i> report of sharing	
Baseline	<i>Package II</i> Model praising Model reports of praising Reinforce <i>true</i> reports of praising	Baseline	<i>Package I</i> Model praising Model reports of praising Reinforce <i>any</i> reports of praising
<i>Package III</i> Model <i>both</i> sharing and praising Model reports of <i>both</i> Reinforce <i>true</i> reports of <i>either</i>		<i>Package II</i> Model sharing Model reports of sharing Reinforce <i>true</i> reports of sharing	Baseline
<i>Package IV</i> Model sharing and praising Model reports of <i>both</i> Reinforce <i>true</i> reports of <i>both</i>			<i>Package II</i> Model praising Model reports of praising Reinforce <i>true</i> reports of praising
		<i>Package III</i> Model <i>both</i> sharing and praising Model reports of <i>both</i> Reinforce <i>true</i> reports of <i>both</i>	
		<i>Package IV</i> Model <i>both</i> sharing and praising Model reports of <i>both</i> Reinforce <i>true</i> reports of <i>both</i>

Fig. 1. The percentage of Group A members reporting sharing, actually sharing, and the mean number of shares per subject are shown on the upper graph. Percentages of reporting praising, actual praising, and mean number of praises per subject are shown on the lower graph. Note that the axis on the left refers to percentage of group doing and reporting the target behavior; the right-hand axis refers to the mean number of target behaviors.

percentages of children doing and reporting the behaviors were also obtained.

The final two conditions were reinforcement for true reports of either praising or sharing (Package III), followed by reinforcement for true reports of both praising and sharing (Package IV). Actual praising (mean number of percentage of group praising) and reports of praising were maintained at consistently high levels during both of these conditions. Sharing remained near baseline levels during the "either" condition, but rapidly increased to its highest levels when reinforcement was made contingent on truly reporting both behaviors.

DISCUSSION

Generally similar results were obtained with both groups. Reinforcement for any report of behavior (true or false) produced moderate increases in reporting and small increases in actual behavior. Reinforcement for true reports was generally more effective, and resulted in higher rates of both reporting and actual behavior.

In both groups, sharing increased more rapidly and was maintained at consistently higher levels than praising. These differences may have been a function of the differences represented in the baseline measures of behavior.

Fig. 2. The percentage of Group B members reporting sharing, actually sharing, and the mean number of shares per subject are shown on the upper graph. Percentages of reporting praising, actual praising, and mean number of praises per subject are shown on the lower graph. The axis on the left refers to percentage of group doing and reporting the target behavior; the right-hand axis refers to the mean number of target behaviors.

Many subjects already had sharing in their repertoires; thus, the experimental manipulations needed only to increase it. Praising, however, was not common to most subjects, and it was necessary first to teach the subjects how to praise (one goal of the modelling component), and then to increase praising.

Although high rates of praising eventually were obtained in both groups, many of the praise statements seemed mechanical and lacking in reinforcement value. Praising was nearly always in the form, "I like your picture" or "I like what you are making", with little voice inflection or modulation. Often, subjects did not look up from their own activities as they delivered praise statements. As rates of praising increased, more inappropriate praise was noted.

Sharing, however, was usually appropriate: subjects used materials first, then offered them to peers. Trading of materials was the most frequent form of sharing, but on occasion, children would simultaneously use materials (typically drawing together on the same piece of paper). Most exchanges of material were arranged verbally.

The functions of the final two contingencies (Package III and Package IV) for Group B are clear enough in showing their effectiveness at increasing many aspects of the target behavior. In one respect, however, only a tentative conclusion is possible: the praise-or-share conditions may have functioned as merely an extension of the previous reinforcement for true reports of praise (Package II). The similar levels of prais-

ing may have been maintained because the subjects did not discriminate the subtle changes in criteria for reinforcement, which allowed the praising behavior to maintain an unchanged rate of reinforcement. This conclusion is also suggested by the fact that sharing failed to increase, although reports of both behaviors were modelled. Apparently, it was not obvious to the subjects that they could report either sharing or praising if they had performed the corresponding behavior.

Since these conditions (Package III and Package IV) were introduced after subjects had a long history of reinforcement for reporting sharing and praising, the resulting high levels of behavior possibly represent the cumulative effect of numerous conditions. However, a complete analysis of order effects would be necessary for a final answer. Programmatically, that analysis might not be important.

EXPERIMENT II

The second study was designed to determine if preschool children could be taught sharing and praising skills through the contingent reinforcement of true reports of those behaviors without first being rewarded for giving any (true or untrue) reports, and to determine the extent, if any, that training to share and praise would generalize to a second setting, where no reports of the behaviors were made.

METHOD

Subjects

Six children, two 3-yr-old boys, one 3-yr-old girl, two 4-yr-old girls and one 4-yr-old boy, served. Three children were from one classroom of the preschool, and three children were from a second classroom. The subjects from different classes did not know each other before the experiment.

Setting

Experimental (training) sessions were conducted in a small classroom near the subjects'

regular classrooms. There were no children, other than the subjects, present during the training session.

Generalization (probe) sessions were conducted in the subjects' original classrooms during a free-play period or a small-group activity period. Probes occurred about an hour before the training session and lasted 10 min. During a generalization probe, a second experimenter served as a teacher. The children were seated on the floor in an area adjacent to the general classroom activities, and had free access to a supply of materials. The materials were varied each session, and included tinkertoys, lego, chalk, playdough, and blocks.

At the beginning of each probe session, the experimenter told the subjects that children who stayed in the area until the timer rang would receive an animal sticker or a star for their cards. Each child had a 12.5 by 17.5 cm card on which the stickers were pasted. At the end of the week, the subjects took the cards home.

Ten to 12 times during each probe session, the experimenter praised the subjects individually or as a group for "playing nicely", and for staying in the area. No reinforcement for sharing or praising was given. If a subject shared or praised, the experimenter waited 10 sec before attending to that child.

Any nonsubjects who came near the area where the probe session was being conducted, were invited to join the group and were also praised for "playing nicely", but did not receive stickers at the end of the session. There were no opportunities for reporting during probe sessions.

Experimental Design

This study was conducted as a multiple baseline across the two behaviors, sharing and praising. Generalization data were collected during all phases.

All experimental conditions were identical to those previously described in the General Methods section. The sequence of experimental conditions is summarized in Table 3.

GROUP C

Fig. 3. The percentage of Group C members reporting sharing, and the mean number of shares per subject are shown on the upper graph. Percentages of reporting praising, actual praising, and mean number of praises per subject are shown on the lower graph. The axis on the left refers to percentage of group doing and reporting the target behavior; the right-hand axis refers to the mean number of target behaviors.

RESULTS

Training

The results of the training sessions are shown in Figure 3. Reinforcement of true reports pro-

duced similar results with both sharing and praising. Mean numbers of shares and praises increased to levels well above those obtained during baseline conditions. After the initial acquisition period (Sessions 9 to 11), percentages of the

Table 3

The sequence of experimental conditions in Experiment II.

Group C	
Sharing	Praising
Baseline	
Package II Model sharing Model reports of sharing Reinforce <i>true</i> reports of sharing	
Baseline	Package II Model praising Model reports of praising Reinforce <i>true</i> reports of praising

group sharing and reporting averaged above 80%. Percentages of doing and reporting praising increased rapidly and stabilized at about 80% during the last five sessions of the experiment.

Probes

The results of the generalization probes are shown in Figure 4. When reinforcement for true reports began in the training sessions, sharing in the probe setting gradually increased, and continued throughout the remaining sessions. Shares averaged about 0.62 per child before training and about 1.8 per child after training.

No generalization of praising training was apparent.

DISCUSSION

The results indicated that both sharing and praising may be increased by reinforcement of true reports of those behaviors, and that this reinforcement contingency was sufficient to establish correspondence without prior reinforcement for any (true or untrue) reports of behavior.

A one-time instruction ("Tell me if you shared [praised]") was used to facilitate acquisition of reporting during the first two

sessions of each reinforcement condition. It is possible that reports of sharing and praising would have occurred eventually, as they did in Experiment I; however, the brevity of the summer term in which the experiment was conducted prevented further exploration of that possibility. Although the instruction was given after the work session, immediately preceding the subjects' opportunity to report, it may have served as a prompt for actual behaviors, as well as for reports of the behaviors.

The results of the probe sessions indicated that sharing generalized to the second setting, but that praising did not. One explanation for this difference is that sharing and praising were naturally followed by different consequences. Offers to share materials frequently resulted in the acquisition of another, desired material; however, praising was typically followed by "thank

Fig. 4. Sharing and praising during generalization probes conducted in Experiment II (Group C). The percentage of group members sharing and the mean number of shares per subject are shown on the upper graph; the percentage of group praising and the mean number of praises per subject are shown on the lower graph. The axis on the left refers to percentage of group doing the target behavior; the right-hand axis refers to the mean number of target behaviors.

you" or by a reciprocal praise statement. The acquisition of materials may have been a sufficiently reinforcing event to maintain sharing, while the consequences of praising were not. It is also possible, as suggested earlier, that training had a more obvious effect on sharing because sharing was already in the subjects' repertoires and the training only served to increase it. Praising, on the other hand, was not initially present and first needed to be established.

It should also be noted that relatively few probe sessions followed praising-training. It is possible that praising would have occurred in the probe sessions after subjects had acquired a longer history of reinforcement for praise reports in the training setting.

EXPERIMENT III

In the first two experiments, subjects' praising had nearly always taken the form of statements such as "I like your picture", or "I like what you are making". This type of praise, while sufficient to fulfill the criterion for reinforcement, seemed to be of limited value as a social reinforcer. Since a primary objective of the research was to increase appropriate social responses, it was decided that specific, varied forms of praise should be trained in addition to the more general category of praising.

METHOD

Subjects

Twelve subjects were selected from two different preschool classrooms and divided into two groups of six. Three members of each group came from the first classroom, and three from the second. Group D was composed of three 4-yr-old boys, two 4-yr-old girls, and one 3-yr-old girl. Group E consisted of four 4-yr-old boys, one 4-yr-old girl, and one 3-yr-old girl.

Setting

Experimental sessions were carried out in an experimental room near the subjects' regular

classrooms. Separate sessions were conducted for each group.

Behavior Definitions

For the purposes of this experiment, praising was divided into two mutually exclusive categories, general praising and specific praising. General praise statements were those consisting of "I like . . ." and a general object (*e.g.*, "I like your picture", "I like what you are making", "I like that"). Any other praise statement was scored as specific praise. Specific praise, in addition to indicating liking or admiration, noted particular qualities (*e.g.*, neatness, number of colors), particular objects (*e.g.*, circles, lines, houses), or particular procedures (*e.g.*, drawing with two pencils, covering the whole page with colors). Specific praise included statements such as "I like the way you used the color red", and "That's a neat house you drew".

Using the same criteria, reports of praise were scored as either general or specific.

Experimental Design

The experimental design within each group was a multiple baseline across three behaviors: sharing, general praising, and specific praising. There was also an umbrella multiple baseline across these two groups of subjects.

All experimental conditions were identical to those described in the General Methods section. The sequence of experimental conditions is summarized in Table 4.

RESULTS

Group D

The results for Group D are shown in Figure 5. No effects of the "modelling-only" procedure were observed. When reinforcement of true reports of sharing was introduced, sharing rapidly increased to an average of about seven shares per subject. Reports of sharing and the percentage of the group sharing showed corresponding increases.

Table 4

The Sequence of Experimental Conditions in Experiment III

Group D			Group E			
Sharing	General Praising	Specific Praising	Sharing	General Praising	Specific Praising	
Baseline	Baseline	Baseline		Baseline	Baseline	
Model Sharing						
Package II Model sharing Model reports of sharing Reinforce <i>true</i> reports of sharing						
Baseline	Package II Model gen. praising Model reports of gen. praising Reinforce <i>true</i> reports of gen. praising		Model Sharing			
			Package II Model sharing Model reports of sharing Reinforce <i>true</i> reports of sharing			
		Package I Model spec. praising Model reports of spec. praising Reinforce <i>any</i> reports of spec. praising		Package II Model gen. praising Model reports of gen. praising Reinforce <i>true</i> reports of gen. praising		
		Baseline	Package II Model spec. praising Model reports of spec. praising Reinforce <i>true</i> reports of spec. praising		Package I Model spec. praising Model reports of spec. praising Reinforce <i>any</i> reports of spec. praising	
		Baseline			Package II Model spec. praising Model reports of spec. praising Reinforce <i>true</i> reports of spec. praising	

GROUP D

Fig. 5. The percentage of Group D members performing the target behavior, reporting that behavior, and the mean number of behaviors per subject for sharing (top graph), general praising (middle graph), and specific praising (lower graph). The axis on the left refers to percentage of group doing and reporting the target behavior; the right-hand axis refers to the mean number of target behaviors.

General praising increased less dramatically when true reports were reinforced, averaging about 1.8 praises per subject. Doing and reporting general praise were variable, ranging from 50% to 100% of the group, but generally showed a high degree of correspondence.

Because of the complexity of the verbal response for specific praise, any report of specific praise was initially reinforced (Package I). This allowed subjects to contact the reinforcement contingency more quickly than they might have during Package II (reinforcement for true re-

ports), and provided an opportunity for the experimenter to prompt subjects to make different reports of specific praise without interfering with the "truth" requirement.

Only small increases in the mean number of specific praises were noted when any report of specific praise was reinforced (Package I). Reports of specific praise increased moderately; however, fewer than half the subjects actually gave specific praise.

Reinforcement for true reports of specific praise (Package II) produced consistent specific praising, averaging about 1.7 praises per subject. Reports of specific praise and the percentage of the group specifically praising varied during the first part of the condition, but increased to near 100% for the last four sessions. During the application of Packages I and II to specific praise, subjects continued to praise generally and reported both general and specific praise.

Group E

The results for Group E are shown in Figure 6. Generally, the results for Group E are similar to those for Group D for sharing and general praising. Modelling appropriate sharing did not produce significant changes in the sharing baseline. When reinforcement was made contingent on true reports, the percentage of group members reporting the appropriate behaviors rapidly increased to near 100%. The percentage of group members actually doing the behaviors also increased, so that a high level of correspondence between reports of behavior and actual behavior developed and was maintained throughout the reinforcement condition.

When reinforcement was made contingent on any report of specific praising (Package I), subjects immediately began doing and reporting specific praise. The percentage of group members specifically praising reached 100% by the third session of the condition. General praising and reports of general praising declined to near baseline levels.

During the final condition (reinforcement for true reports of specific praise), the mean number

of specific praises per subject averaged about 2.0 while the percentages of reporting and doing the behavior remained about 80%. Functionally, this final condition was no different from the preceding one for the subjects; in both conditions they truly reported specific praise and were rewarded for their reports.

DISCUSSION

The results supported the findings of the two previous experiments and demonstrated that reinforcement for true reports of behavior can be used to increase a still more complex behavior, specific praising.

Specific praise appeared to be a more reinforcing event than general praise had been in the same experiment or in earlier ones. General praise was often "recited" by one child to another, then repeated by the second child. Often the child being praised did not attend to the general praise statement a peer was making. Specific praise statements seemed more spontaneous and less stereotypical, possibly because they required the subject making the statement to stop working, assess other's activities, and then make an appropriate statement. Because such statements were of longer duration and of more unique content than the general praise statements, specific praise more often elicited attention from the child being praised.

Most subjects demonstrated several different types of specific praise and tended to vary their praise statements within and across sessions. None of the subjects imitated the modelled praise statements, but rather, subjects generated specific praise that was appropriate to a peer's particular activity.

During the reinforcement of true reports of general praising, some subjects in Group E began praising specifically. These same subjects performed and reported general praising and, thus, were rewarded for their reports of praising. This reinforcement may have maintained both specific and general praising.

It is not clear whether it was necessary to train general praise, or the use of a single praise state-

Fig. 6. The percentage of Group E members performing the target behavior, reporting that behavior, and the mean number of behaviors per subject for sharing (top graph), general praising (middle graph), and specific praising (lower graph). The axis on the left refers to percentage of group doing and reporting the target behavior; the right-hand axis refers to the mean number of target behaviors.

ment, before training the class of specific praise. The results obtained with Group E suggest that specific praising might be trained immediately with the desired results. It may be that long periods of reinforcement for general praise, without the occurrence of specific praise, impede the acquisition of the specific praise responses and reports. The subjects in Group E who exhibited specific praising during the general praising training (and thus were not exposed to a long period of reinforcement for only general praise) reported specific praise more quickly and more truly than the subjects in Group D, who did not exhibit any specific praise until that behavior was trained. In Group E, reinforcement for any reports of specific praise quickly produced the actual behavior from nearly all subjects; yet, Group D showed very few instances of specific praising when any report of that behavior was reinforced, and somewhat lower levels of performance during reinforcement for true reports of specific praise. Additional research would be needed to determine if this effect is the function of a long period of reinforcement for general praising without any occurrence of specific praise, or simply reflects the difference in the subject's initial verb repertoires.

GENERAL DISCUSSION

The experiments reported here extend the previous research on verbal self-control of behavior along two dimensions: from simple to complex behaviors, and from asocial to social behaviors.

Previous research has been limited in its application to nonsocial behaviors such as bar pressing (*e.g.*, Bem, 1967; Birch, 1966), eating (Lovaas, 1964*b*), and the use of preschool materials (*e.g.*, Risley and Hart, 1968). Although the target behaviors have been varied, all were primarily motor responses that did not require the cooperation or presence of persons other than the subject. The two behaviors examined here, sharing and praising, could occur only with one or more peers present, and thus increases in

either behavior served to further social interaction among group members.

There are other ways in which sharing and praising are more complex responses than those previously studied. Sharing has both verbal and nonverbal components. In particular, the nonverbal component may take a variety of forms (*e.g.*, a gift, an exchange of materials, acceptance of a material, or simultaneous use of a material). Although general praising could consist of a simple verbal statement without accompanying responses, specific praise required that a subject assess a peer's activity, attend to a specific aspect of it, choose a verbal description that indicated this aspect, and make a praise statement specifically mentioning what was being praised.

Generally, similar results were obtained in all three studies; however, there were considerable differences in the rates of behaviors and the time needed for subjects to acquire these behaviors. There are a number of possible reasons for these differences. First, the composition of the groups differed with respect to the ages and skills of the subjects. The subjects who acquired the reporting and actual behaviors more quickly appeared to be more verbally and socially skilled. Studies by Luria (1961) and Bem (1967) reported that younger children consistently exhibited little verbal control of behavior without special training. With the exception of only one subject, this seemed to be true in all three studies reported here. Younger subjects required longer training to make reports of their behaviors and to increase their actual behaviors.

Differences among groups might also be attributed to the fact that in some groups, one or two subjects served as informal, unprogrammed, peer models for appropriate behavior. The rates of sharing, praising, and the reporting of these behaviors may have been affected by the presence and relative effectiveness of such interactive models. Apparent models were subjects with unusually good verbal and social skills, who interacted with most other members of the group. On several occasions, model-subjects were observed instructing peers about the appropriate behaviors

and explaining the contingencies of reinforcement. Such subject-models were apparent in Groups A, B, and E, but not in Groups C and D.

While these experiments clearly demonstrated that the package (modelling and reinforcement for true reports) can be used to increase social behaviors, three issues in particular, are left unresolved. First, the function of the reporting responses as an example of verbal mediation is not clear. It is possible that the reinforcement for reports of behavior paradigm used here was simply functioning as a delayed reinforcement procedure, and that children who were rewarded for sharing and praising after each session would respond in the same way as children who were rewarded after each session without reporting their behavior. A further study, in which delayed reinforcement was directly compared with reinforcement for reports of behavior, would aid in this respect.

The effects of the adult model should also be more carefully evaluated. In most instances, the modelling of appropriate sharing responses without reinforcement for reports of behavior did not have a significant effect on rates of sharing; however, the effect of the model after it was paired with the reinforcement contingencies was not investigated. The model seemed to be particularly important during the initial sessions of an experimental condition, possibly because it provided the subjects with information about the reinforcement contingencies, in addition to providing examples of the appropriate behavior. In most cases, subjects did not appear to be attending to the model after the first five or six sessions of the condition.

A third issue that merits further consideration is generalization, since, potentially, one of the most important aspects of this procedure is its range of control over time and settings. Generalization data were collected throughout Experiments II and III. In Experiment II, there was clear generalization of sharing but not praising, to a second setting. In Experiment III, limited generalization of sharing was observed, but no generalization of praising was evident. The gen-

eralization data for Experiment III have not been included here because of difficulties related to their collection.

In Experiment III, a probing technique (a 5-min observation of the subjects while they played with materials similar to those used in training) was used in place of the 15-min generalization sessions employed in Experiment II. It is highly questionable if the 5-min probe was sufficient to detect generalization. The variable results, particularly in the case of sharing, in Experiments II and III, lead to the conclusion that the conditions under which generalization data are collected should be specified as clearly as the primary experimental procedures. It may be that conflicting reports of generalization are a product of different procedures and settings for collecting generalization data, and, thus, do not necessarily reflect the strength of the primary training or intervention.

It was of interest in the present studies that although formal evidence of generalization was limited, anecdotal reports from parents and teachers of subjects in all five groups suggested that sharing and praising began to occur more frequently in classrooms and at home after training was initiated in the experimental sessions.

The present studies did not attempt to consider the theoretical issues underlying the verbal self-control of behavior. It should be noted that these studies in some ways resemble Festinger's studies of cognitive dissonance (*e.g.*, Festinger, 1957). For example, Festinger and Carlsmith (1959) reported that when subjects were rewarded for publicly advocating an opinion discrepant from their private ones, a subsequent change in the direction of the opinion publicly advocated was noted. The change was considered to be an after-the-fact way of justifying the discrepant public stance and thus alleviating the cognitive dissonance. In the present studies, there were some instances where subjects began sharing and praising after reinforcement of untrue reports (that is, during conditions when any report, true or untrue, was reinforced), similar to the effects noted in the Festinger and Carlsmith study.

Further research might take two directions. The component procedures discussed above might be further evaluated and tested for their relative functions. The present package also might be extended toward further application. This self-reporting procedure might also be an efficient technique for maintaining social behavior in the classroom. Once true reporting has been established, the teacher might need only to be present during the reporting period. The teacher's attention during other times may be directed toward teaching other behaviors. The delayed contingencies also allow for increasing social behavior without interrupting ongoing behavior among the subjects.

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