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SOCIAL SKILLS TRAINING WITH CHILDREN: PROCEED WITH CAUTION

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Three learning disabled children, selected on the basis of peer sociometric ratings and teacher referral, received social skills training. A group training procedure consisting of coaching, modeling, behavior rehearsal, and feedback was used to teach children the target behaviors of eye contact and appropriate verbal responses. A multiple baseline analysis across target behaviors was used to demonstrate treatment effectiveness on role-play scenes trained during treatment sessions. Duration of speech was measured as an untrained, corollary measure. The following measures were also obtained during baseline, posttreatment, and 1-mo follow-up for the experimental subjects and three control subjects: (a) performance on role-play scenes not trained during treatment sessions; (b) behavioral observations in a free play setting, and (c) sociometric ratings. In addition, the trained and untrained role-play scenes were administered by novel experimenters following treatment. The results indicated that socially unskilled, learning disabled children can be taught to respond appropriately to role-play situations. However, improved performance did not generalize to the natural school setting and treatment did not effect ratings of peer acceptance. The implications of these findings for future social skills training with children are discussed.

DESCRIPTORS: social skills training, generalization, group training, learning disabled children

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The area of social skills training for children with poor interpersonal skills has received increasing amounts of attention in the research literature (Michelson & Wood, 1980). The impetus for this research comes from findings showing that, in comparison to socially competent peers, children with poor interpersonal relationships are at high risk for developing adjustment problems as adults (Cowen, Pederson, Babigian, Izzo, & Trost, 1973; Roff, 1970; Roff, Sells, & Golden, 1972).

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The most recent behavioral treatment approach found in the research literature consists of a combination of procedures such as coaching, behavior rehearsal, modeling, and feedback (Bornstein, Bellack, & Hersen, 1977; Cooke & Apolloni, 1976; Gottman, Gonso, & Schuler, 1976; LaGreca & Santogrossi, 1980; Oden & Asher, 1977). Training typically focuses on teaching children to engage in specific interpersonal behaviors such as smiling, cooperation, and initiating interactions. These studies have generally been successful in increasing the frequency of the target behaviors, particularly on measures obtained in the actual training session (Cooke & Apolloni, 1976) or on analogue measures such as role-play tests (Bornstein et al., 1977; LaGreca & Santogrossi, 1980). For example, LaGreca and Santogrossi (1980) conducted a well controlled study in which socially unskilled elementary school children partici-

pated in a skills training group and, in comparison to control subjects, showed improvement on a role-play test and on a measure of the children's social knowledge. However, findings on measures of generalization were not as consistently positive. Following training, the experimental subjects showed an increase in the frequency and initiation of social interactions across several settings in the school environment, but no changes occurred in the subjects' positive social behavior. In addition, treatment had no effect on peer sociometric ratings which typically serve as an index of a child's peer acceptance or social status (Roistacher, 1974; Singleton & Asher, 1977).

Other studies have likewise found equivocal results on measures of generalization (Cooke & Apolloni, 1976). Interestingly, some studies have found no changes in the frequency of target behaviors in the training setting or natural environment, but have found changes following treatment on other criterion measures such as the distribution of peer interactions and the degree of peer acceptance (Gottman et al., 1976; Oden & Asher, 1977). Still other studies have obtained nonsignificant changes on both sociometric measures and behavioral observations (Hymel & Asher, Note 1).

One possible explanation for these equivocal findings is that most studies apparently make no attempt to incorporate procedures aimed at enhancing generalization. That is, many studies adopt a "train and hope" approach (Stokes & Baer, 1977). The inclusion of specific procedures designed to facilitate generalization could feasibly result in more positive and consistent findings across settings, behaviors, and time (Drabman, Hammer, & Rosenbaum, 1979).

Important criteria for determining effective training programs have been pointed out by Gottman et al. (1976), who state that "social skill training programs need to demonstrate two things: that they teach the target social skills, and that these skills make a difference on criterion variables such as sociometric position" (p. 195). Most studies have been successful in demonstrating change on one of these variables, but few have succeeded in demonstrating consistent changes in both areas. The need to show improvement on direct (e.g., behavioral observations) or indirect measures (e.g., sociometric ratings) of social functioning in the natural environment is of particular importance for those studies employing a role-play test as the primary criterion for demonstrating that target behaviors have been learned. This is based on findings that question the validity of role-play tests because of a lack of correspondence between behavior on role-play tests and in naturalistic situations (Bellack, Hersen, & Lamperski, 1979; Bellack, Hersen, & Turner, 1978). Until further research is conducted on the validity of role-play tests, social skills training studies will need to demonstrate treatment effectiveness on other measures as well. Otherwise, conclusions about the utility of training programs will be limited.

The study conducted by Bornstein et al. (1977) is particularly relevant to this discussion. The authors conducted a well controlled study which showed changes in the target behaviors of three unskilled children in response to scenes on a role-play test. However, given that no attempt was made to promote or measure generalization, the authors' conclusions concerning the success of the treatment program need to be modified until further research corroborates the results and demonstrates improvement on criterion variables of social competence.

The purpose of the present study was to determine if a skills training approach with socially unskilled children would result in improvement on a number of variables, including role-play performance, frequency of verbal and play interactions in a naturalistic free play setting, and peer acceptance as determined by sociometric ratings. Rather than follow a "train and hope" model of generalization, the treatment program used in the present study incorporated several procedures for the purpose of promoting generalization to the natural environment.

METHOD

Participants

Six boys ranging in age from 8 yr, 2 mo to 10 yr, 10 mo participated in the study. The boys attended a school for learning disabled children in Jackson, Mississippi. They were selected on the basis of peer sociometric ratings and teacher referrals. A roster and rating sociometric questionnaire was administered by the teachers of three classrooms on six occasions within a 3-wk period. During each administration, the children used an 11-point scale to rate each member of their class in response to three questions concerning the degree to which they would like to engage in work and play activities with their classmates. The two children from each of the three classes who received the lowest mean rating from all classmates based on the six administrations of the questionnaire and were identified by the teacher as having poor peer relationships were selected to participate in the study. One child from each class was randomly assigned to the experimental group and the second child from the class was then assigned to the control group.

General Procedure

Skills training for each of the three experimental subjects was evaluated with a multiple baseline design across two categories of assertive behavior: (a) eye contact, and (b) appropriate verbal content in the areas of responding to unfair criticism, initiating social interactions, giving compliments, and requesting new behavior. A third component, duration of speech, served as an untrained corollary measure. Training sessions were conducted two to three times per week for 5 wk, with each session lasting approximately 30 min. Following each training session, students were videotaped while they individually took a 12-scene role-play test. These scenes were used during the training sessions to teach the target behaviors. The occurrence of the target behaviors was later assessed through objective ratings of the students' performance. Generalization of training effects was determined by several pre- and posttreatment measures: (a) administration of eight role-play scenes that were not used for training purposes (untrained scenes); (b) behavioral observations conducted in a naturalistic, free play setting; and (c) peer sociometric ratings. In order to control for practice effects and maturation, the three control subjects were assessed on the same pre- and posttreatment measures as the experimental subjects. Both groups were again tested on all measures 1 mo following the termination of treatment in order to assess maintenance. In addition, novel experimenters gave the two groups the trained and untrained role-play scenes 1 wk following the termination of treatment in order to assess generalization across experimenters.

Role-Play Test

A 20-item role-play test was developed in order to assess the effectiveness of the training program. The test consists of five scenes from each of the four content areas (i.e., responding to unfair criticism, initiating social interactions, giving compliments, and requesting new behavior). The content areas of the role-play scenes were selected in an attempt to parallel interpersonal situations which the children would be likely to encounter on a daily basis. The scenes involving requests for new behavior were adapted from the Behavioral Assertiveness Test used by Bornstein et al. (1977). Three items from each content area were randomly selected as training scenes for the experimental subjects. The two remaining scenes from each area were untrained and comprised the analogue test for generalization. Examples of scenes from the four content areas are listed below:

Responding to Unfair Criticism

Narrator: You give a wrong answer at school and a classmate says,
Prompt: "Boy, are you dumb."

Initiating Social Interactions

Narrator: You're sitting with some of your friends in front of the school and you would like to do something. One of your friends says,

Prompt: "I'm bored."

Giving Compliments

Narrator: Someone in your class gives a good answer to a very difficult question that the teacher has asked. After class, that person says to you,

Prompt: "That was a hard question that the teacher asked me."

Requesting New Behavior

Narrator: During a science lesson the class is trying to come up with an idea for a project. As you start to give your idea someone interrupts you and says,

Prompt: "Hey, listen to my idea."

The role-play test was given to each child individually in an unoccupied classroom. The procedure remained constant throughout the study. Three chairs were arranged in a triangle. The child sat opposite the first author, who presented the predetermined prompts from each scene. A female teacher's aide sat in the third chair and provided the narration for each scene. The child was instructed to respond as naturally as possible and, prior to the first administration of the test, was given the opportunity to respond to a practice scene. During each administration of the test, the narrator presented a scene, the prompter delivered a cue line (prompt), and the child responded. Subsequent scenes were presented in the same manner. The videotape equipment and camera were positioned behind the prompter. The child's performance during the entire test administration was videotaped and later rated on the three social skills components.

Baseline assessment consisted of three administrations of the 20-item (12 trained and 8 untrained scenes) role-play test. Experimental and control subjects participated in the baseline assessments 1 wk prior to the beginning of treatment. Following each training session, the 12 training scenes were administered to the experimental subjects only.

Skills Training

The social skills components were trained in a sequential and cumulative fashion in the following randomly determined order: (a) eye contact (four sessions), and (b) appropriate verbal content (seven sessions). During each session in which verbal content was targeted, responses within all four content areas were taught. Training was conducted in a group with the experimental subjects and two adult group leaders (first author and a female teacher) present. At the onset of each training session, a group leader described the target behavior and provided a rationale for its importance to good peer relationships. The group leaders then presented one of the 12 training scenes. The children took turns presenting the prompt and responding. The leaders coached the children, modeled appropriate responses, and gave feedback and praise. In addition, the children were encouraged to give feedback to each other. The same procedure was followed for all subsequent scenes. When appropriate verbal content was targeted, the children were directed to give a variety of responses so that they would not learn to parrot just one response. During each training phase, the children were videotaped on several occasions while role playing. Each videotaped scene was immediately shown to the children and was followed by feedback and further rehearsal.

Several of the training procedures were used to facilitate generalization to the natural environment and have been used in previous studies outside the social skills area (cf. Stokes & Baer, 1977). For instance, using two trainers increased the diversity of stimulus conditions during training. In addition, the use of a teacher as a second trainer provided a common

stimulus across the training setting and the daily school environment. The teacher may have thus served as a discriminative stimulus for appropriate social interactions at various times during the school day. Similarly, group training allowed the children's peers to serve as stimuli common to the training setting and the natural school environment, thus increasing the likelihood of generalization across settings.

Another procedure to increase generalization involved devoting the last 5 to 10 min of each session to rehearsing responses to scenes that were spontaneously developed by the children. They were asked to describe situations similar to those on the role-play test which they had actually encountered. Responses to these scenes were rehearsed in a manner similar to the training scenes.

A final strategy for improving generalization consisted of verbal and written instructions to classroom teachers, asking them to provide daily feedback to the experimental subjects concerning general interactions with peers. Teachers were instructed to give particular attention to the target behavior being taught in the group sessions and were asked to record the date, time, and general content of the feedback. Although social reinforcement by teachers in the natural environment was used in the present study as a means of improving generalization, previous studies have successfully used adult contingent attention for increasing withdrawn children's frequency of peer interactions (e.g., Allen, Hart, Buell, Harris, & Wolf, 1964; Hart, Reynolds, Baer, Brawley, & Harris, 1968). In order to determine whether changes on measures obtained in the natural environment could be at least partially attributed to skills training, teachers were asked to implement the feedback instructions with the control subjects as well.

Selection and Scoring of Target Behaviors

Target behaviors were selected on the basis of the children's performance during baseline. The three behaviors found to be deficient for at least the majority of the six children were eye contact, appropriate verbal responses, and duration of speech.

The operational definition of each target behavior is listed below. The rate of occurrence of each behavior was based on the retrospective ratings of the videotapes by an observer.

Ratio of eye contact to speech duration. The total number of seconds that the child looked at the prompter while responding was calculated for each scene by dividing the total duration of eye contact while responding by the duration of speech.

Duration of speech. This category was defined as the total number of seconds that the child spoke while responding to each scene.

Appropriate verbal content. The criteria for this category differed depending upon the particular content area. Each response was scored on an occurrence-nonoccurrence basis.

1. Responding to unfair criticism. This was scored if the child made a statement denying or disagreeing with the criticism and offered an alternative explanation of the behavior (e.g., in response to "Boy, are you dumb": "I'm not dumb, I just gave a wrong answer").

2. Initiating social interactions. The child was required to extend an invitation to the prompter to join in an activity or to suggest an activity requiring an extended social interaction (e.g., "let's play cards"; "do you want to go swimming?").

3. Giving compliments. The child was required to praise or commend the prompter (e.g., "You gave a good answer in class today.")

4. Requesting new behavior. In order for this category to be scored, the child had to state explicitly that he wanted the prompter to alter her behavior (e.g., "I was speaking, so you need to wait your turn" in response to an interruption during a science lesson).

Generalization Assessment

Experimental and control subjects were assessed on the measures of generalization listed below.

Role-play test. On the second and fourth day following the termination of treatment, the children took a posttest consisting of the 12 trained and 8 untrained role-play scenes. The degree of improvement from baseline to posttest performance between those scenes in which the target responses were trained was compared to those for which no training was provided. In addition, the 20 item role-play test was readministered with novel experimenters on the seventh and ninth day following the termination of treatment in order to assess generalization across experimenters. Based on the discussion of Stokes and Baer (1977) concerning the use of sufficient exemplars (i.e., more than one trainer), it was hypothesized that generalization would occur across experimenters. On each day of testing, a different pair (1 male, 1 female) of high school students with whom the children were unfamiliar served as the experimenters. High school students were chosen in an attempt to approximate more closely the age of the children and thus the children's peers.

Free play setting. The social interactions of each child were observed in an in vivo free play situation during baseline and the week following the termination of treatment. Observations were made during the children's daily, unstructured recess period. The three classes had consecutive recess periods such that only one class was typically present during each 20-min observation period. A sequential time sampling procedure was used, in that the observer rated the behavior of the experimental child for eight 15-sec intervals (10 sec observe, 5 sec record), then observed the control child for eight 15-sec intervals and continued this alternation throughout the observation period. Observations were conducted on three or four days during baseline and again following treatment; approximately 30 min of observational data were obtained for each child prior to and following treatment.

The free play interactions occurred outdoors in a large, open area in which the children were allowed to move about freely. As a result, it was difficult for the observers to maintain the close proximity to the children needed for obtaining reliable recordings of those behaviors targeted in the training sessions (e.g., eye contact). Thus, in order to obtain unobtrusive and reliable measures, the following behaviors were scored by the observers on an occurrence-nonoccurrence basis during each interval: (a) verbalizations directed to an individual peer (defined as any meaningful and audible word or statement directed toward an individual, as determined by head orientation or use of the child's name); (b) verbalizations directed to a group consisting of two or more children; (c) verbalizations received by the target child from a peer; and (d) play behavior (defined as participation in a cooperative activity such as football, tag, or playful wrestling).

Sociometric ratings. The roster and rating sociometric questionnaires were readministered to the children in the three classes on four occasions during the 2-wk period following the termination of treatment. The procedure was identical to the one used prior to baseline. Pre- and posttreatment results were then compared to evaluate the effects of treatment on peer acceptance.

Maintenance

In order to assess maintenance of treatment effects, the behavior of the experimental and control children was assessed on all dependent measures beginning approximately 1 mo following the termination of treatment. Thus, trained and untrained role-play scenes were administered two times over a 3-day period, behavioral observations in the in vivo free play setting were conducted on 3 days within a 1-wk period, and the sociometric questionnaires were administered on four occasions over a 2-wk period.

Reliability of Behavioral Measures

Role-play test. Interrater agreement on the behavioral components was assessed during all experimental phases on a randomly selected

sample of videotapes. A second, independent observer scored 20% of the videotapes. Pearson product moment correlations were calculated for ratings of eye contact and speech duration. A percentage agreement score was calculated for appropriate verbal content by dividing the number of agreements on the occurrence of the behavior by the total number of agreements plus disagreements and multipling the quotient by 100.

Free play setting. Interrater agreement for the free play observations was assessed during approximately 50% of the observations during baseline, following treatment, and at 1-mo follow-up. A second observer entered the play area and independently scored the behavior of the experimental and control subjects. Percentage agreement on the occurrence of the target behaviors was calculated by dividing the number of agreements by the total number of agreements plus disagreements and multiplying by 100.

RESULTS

Interobserver Agreement

On the role-play test, percentage agreement between observers for appropriate verbal content was 83% (range: 78% to 90%). Pearson coefficients for eye contact and speech duration were .80 (range: .75 to .88) and .74 (range: .67 to .79), respectively. Interobserver reliabilities for the behaviors in the free play setting were 85% for verbalizations directed to an individual (range: 80% to 89%), 82% for verbalizations directed to a group (range: 78% to 85%), 79% for receiving verbalizations from peers (range: 75% to 86%), and 85% for play behavior (range: 80% to 88%).

Role-Play Test: Training Scenes

It should be noted that the three teachers did not comply with instructions to monitor feedback given to the children and reported consistently that they were unable to provide specific feedback to any of the children due to a lack of time during the school day. Therefore, teacher feedback cannot be considered as an active component of the treatment program. Results on the role-play test and other dependent measures need to be interpreted accordingly.

Figure 1 displays the multiple baseline analysis for the three experimental children on the 12 training scenes. Each data point represents the average rating across all scenes within a particular session. Performance of the three children was associated with the successive introduction of the target behaviors. Thus, the ratio of eye contact to speech duration showed a steady increase above baseline levels as training began on this behavior. Eye contact increased from a mean of .03 during baseline to a mean of .75 during training. The performance of S2 showed the greatest variability, although his performance remained consistently above baseline levels. Appropriate verbal content showed increments similiar to eye contact when this target behavior was introduced in the training sessions. The mean number of appropriate verbalizations improved from a mean of .18 during baseline to a mean of .63 during the training phase. Performance levels were maintained on the posttest two and four days following treatment (mean eye contact = .76; mean verbalizations = .85).

Speech duration was not specifically targeted during the training sessions. As seen in Figure 1, this behavior showed a slight, gradual increase which paralleled improvements in appropriate verbal content, beginning in session 9. Thus the two variables appear to be at least partially correlated. During posttesting, speech duration was maintained at levels comparable to those found during the later training sessions.

Figure 2 displays the performance of the control subjects on the training scenes. Baseline levels of eye contact (mean = .40), particularly for S4 and S6, are greater than those of the experimental subjects and increase slightly at posttest (mean = .56). S5 displayed virtually no eye contact during either phase. Number of appropriate verbalizations and speech duration

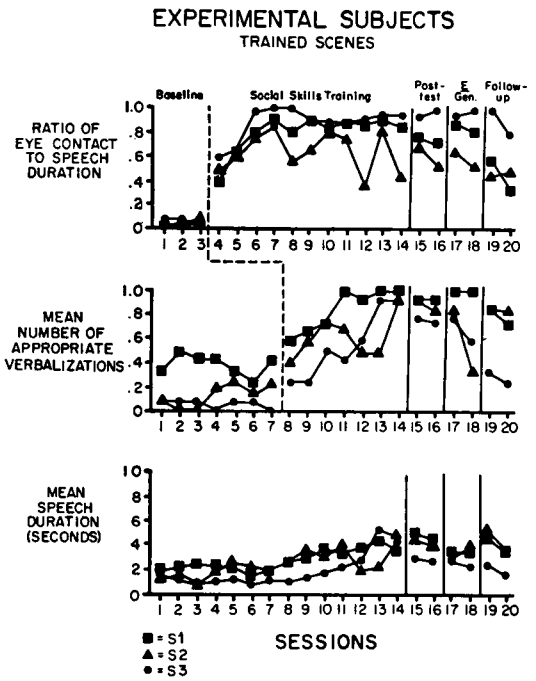

Fig. 1. Performance of three experimental subjects on two targeted components of social skills (eye contact and appropriate verbalizations) and one nontargeted, corollary measure (duration of speech) during testing on trained role-play scenes. Testing was conducted during baseline (data points to the left of the dashed vertical line); training (eye contact: sessions 4-7; appropriate verbalizations: sessions 8-14); posttreatment (posttest administered 2 and 4 days following the termination of treatment); with novel experimenters (experimenter generalization); and at 1-mo follow-up.

for the control subjects showed no change from baseline (mean = .17 and 1.33, respectively) to posttest (mean = .21 and 1.34, respectively) remaining at low base rate levels.

Generalization Assessment

Untrained scenes. As seen in Figure 3, a moderate degree of generalization occurred on the untrained scenes for the experimental subjects. A trend toward improved eye contact occurred during baseline for the experimental subjects, making it difficult to evaluate posttest results. However, S1 and S2 maintained a moderate degree of eye contact during the posttest and S3 showed a substantial increase. A moderate degree of generalization was also found for appropriate verbal content, although performance levels during posttesting were lower than were found on the training scenes. Speech duration on untrained scenes showed a slight increase from baseline to posttesting, paralleling changes for the trained scenes.

The performance of control subjects on the untrained scenes was correlated with their performance on trained scenes during baseline and posttesting (see Figure 2). Thus, minimal behavior change was found for the three children across social skills components.

Experimenter generalization. Performance on the role-play test administered by novel experimenters was generally similar to performance on the posttest for all six children. Exceptions included S2, who showed a substantial decrease in the number of appropriate verbalizations on the trained and untrained scenes during the second day of testing with the novel experimenters; S3, who demonstrated a performance decrement in comparison to the posttest on the number of appropriate verbalizations on the untrained scenes; and a decrease in eye contact by S6 on trained and untrained scenes.

Free play setting. Behavioral observations in the free play setting failed to show a relationship between social behaviors in a natural setting and the treatment intervention. Pre- to posttreatment results showed increases in play behavior and verbalizations directed to a group of peers for both experimental and control subjects, while verbal behavior directed to individuals and received from peers showed no systematic, consistent changes (see Table 1).

Sociometric ratings. Treatment was unrelated to the sociometric ratings received from classmates. The mean ratings of the experimental and control subjects failed to show differential changes across groups from baseline to posttreatment assessments (see Table 2).

Maintenance

The 1-mo follow-up results on the role-play test were generally consistent with those found following treatment. Although a slight per-

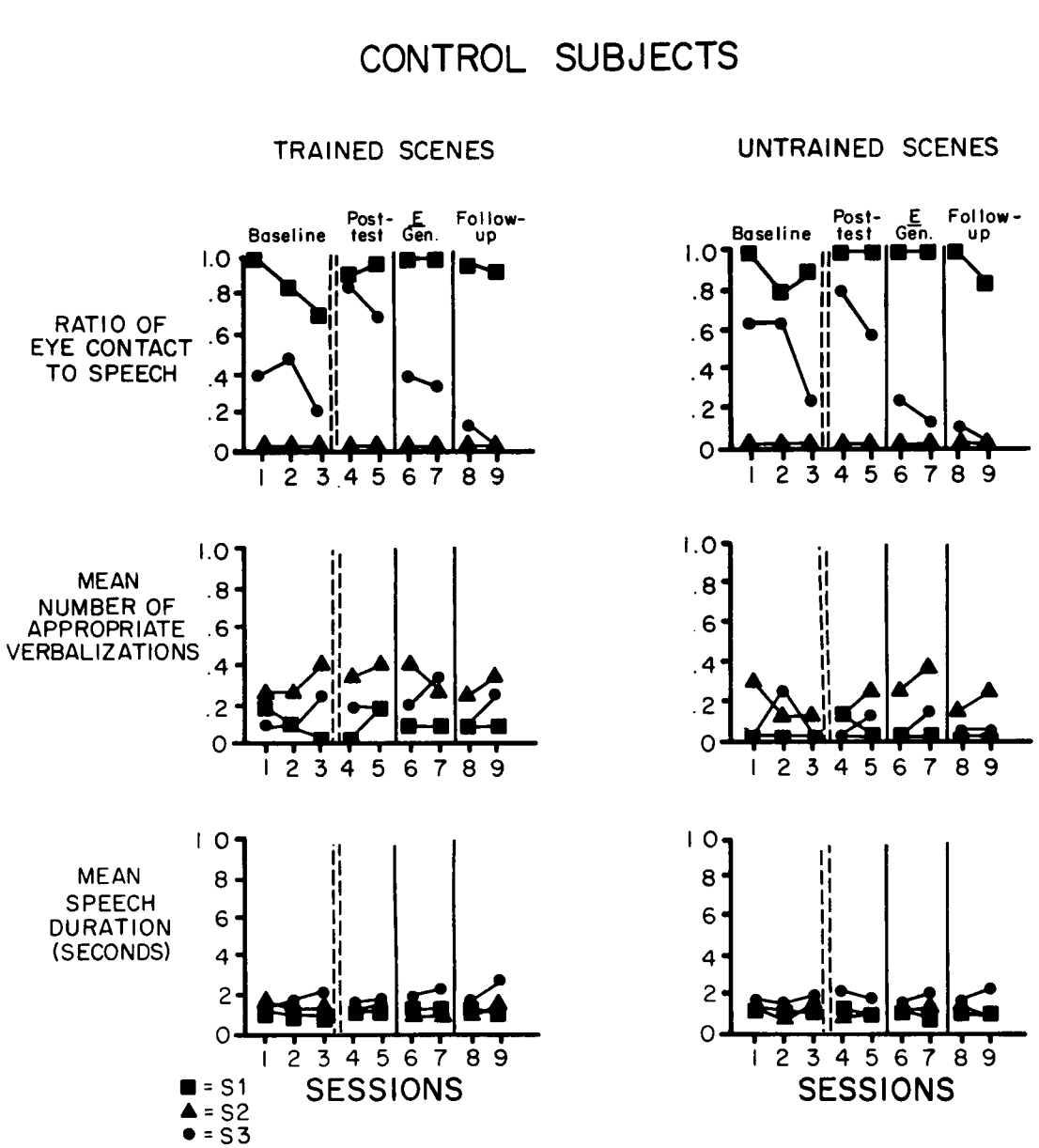

Fig. 2. Performance of three control subjects on three components of social skills (eye contact, appropriate verbalizations, and duration of speech) during testing on role-play scenes. Trained scenes were used for training purposes with three experimental subjects and untrained scenes were used to assess generalization. Testing was conducted prior to treatment of experimental subjects (baseline); following treatment (posttest); with novel experimenters (experimenter generalization); and at 1-mo follow-up.

formance decrement was noted at points for the experimental subjects on both trained and untrained scenes, performance was consistently maintained above baseline levels. Behaviors measured in the free play setting showed inconsistent changes relative to posttest findings across experimental and control subjects. Sociometric ratings generally declined or remained unchanged for both groups.

DISCUSSION

The present study demonstrated the utility of social skills training as assessed by the role-

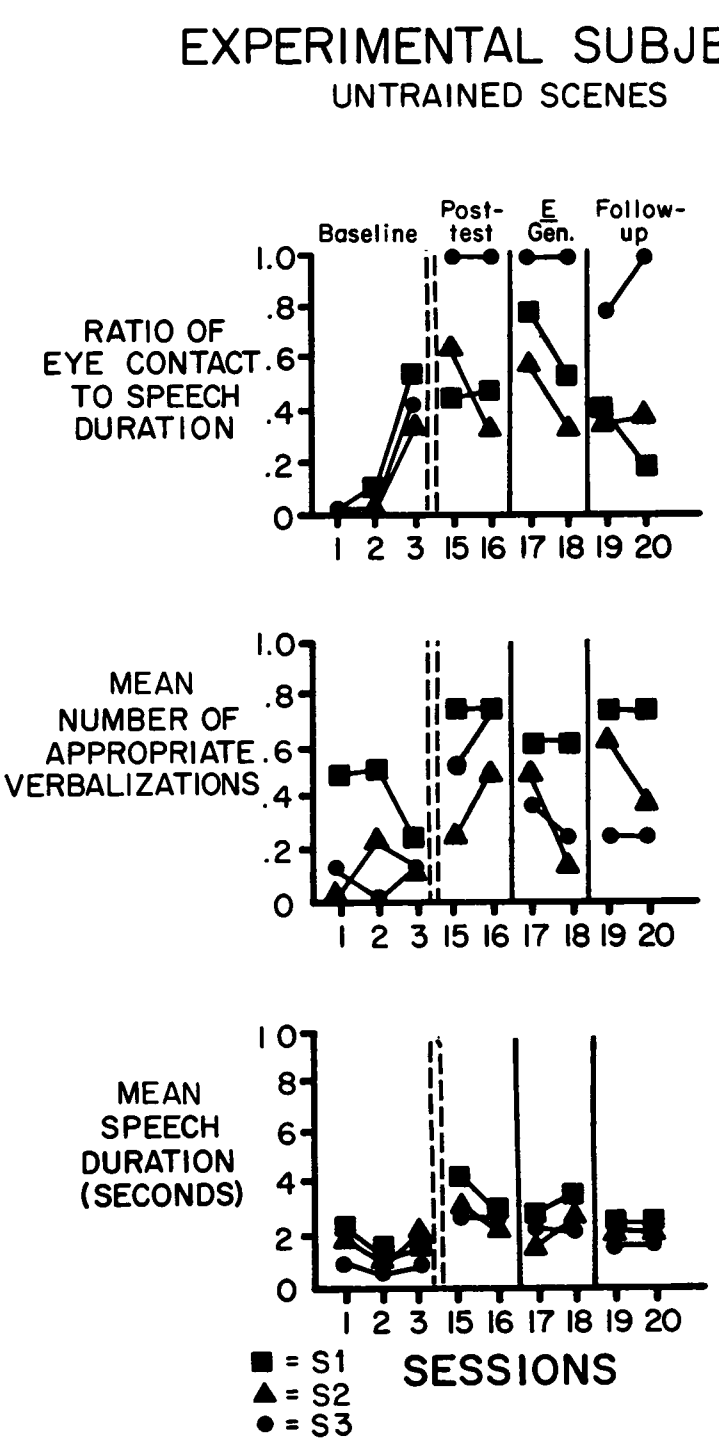

Fig. 3. Performance of three experimental subjects on three components of social skills (eye contact and appropriate verbalizations were targeted during training; duration of speech was a nontargeted behavior) during testing on untrained role-play scenes. Testing was conducted during baseline; posttreatment (posttest); with novel experimenters (experimenter generalization); and at 1-mo follow-up.

Table 1

Mean percentage of behavioral categories during free play observations for experimental and control subjects.

	Verbalizations to Individual			*Verbalizations to Group*			*Verbalizations Received from Peers*			*Play Behavior*		
Student	*Base*[a]	*Post*[b]	*FU*[c]	*Base*	*Post*	*FU*	*Base*	*Post*	*FU*	*Base*	*Post*	*FU*
Experimental												
S1	49.6	29.5	37.3	1.3	31.2	25.3	34.3	19.5	17.3	60.0	100.0	98.6
S2	17.6	17.5	23.3	9.6	21.0	1.6	18.8	29.7	31.6	37.2	96.7	96.6
S3	31.5	34.2	35.0	11.5	21.7	13.3	27.5	31.7	33.3	41.7	85.5	83.3
Mean	32.9	27.0	31.9	7.5	24.6	13.4	26.9	27.0	27.4	46.3	94.1	92.8
Control												
S4	11.6	31.2	20.0	7.5	29.5	25.3	11.6	26.2	14.6	62.6	97.2	90.3
S5	16.8	18.2	25.0	4.2	17.3	6.6	15.4	18.5	15.0	60.2	99.0	98.3
S6	24.5	0	7.5	0	0	0	4.5	0	15.0	32.0	30.0	15.0
Mean	17.6	16.5	17.5	3.9	15.6	10.6	10.5	14.9	14.9	51.6	75.4	67.9

[a]Base = Baseline
[b]Post = Posttest
[c]FU = Follow-up

play performance of three learning disabled children identified as socially unskilled on the basis of peer sociometric ratings. A moderate degree of generalization was demonstrated on untrained role-play scenes as well as when testing was conducted by novel experimenters who approximated the age of the subjects. In addition, the subjects' performance was generally maintained at 1-mo follow-up. Thus, the findings on the role-play test showed that, following training, the children were able to use the target behaviors within a structured situation.

These results confirm the findings of a similar study (Bornstein et al., 1977) which demonstrated improved role-play performance of four socially unskilled children following skills training. However, in contrast to the Bornstein et al. (1977) study, the present research also attempted to assess generalization and validate the improvement shown on the role-play tests by measuring the children's social competence on a number of criterion variables, including overt behavior in a naturalistic free play setting and peer sociometric ratings. Improved social behavior in the school environment was not supported on the basis of these generalization measures. Thus, in comparison to three socially unskilled learning disabled children who did not receive training, the experimental subjects in the present study showed no treatment-related changes in their social status or frequency of verbal and play interactions with peers.

Table 2

Mean sociometric ratings for experimental and control subjects.

Student	*Baseline*	*Posttest*	*Follow-up*
Experimental			
S1	5.3	9.1	7.1
S2	6.5	7.1	5.8
S3	5.3	5.1	5.8
Mean	5.7	7.1	6.2
Control			
S4	3.9	6.9	4.7
S5	6.1	6.9	7.2
S6	7.3	8.2	8.4
Mean	5.8	7.3	6.7

The lack of setting generalization found in the present study was somewhat surprising given the attempt to use procedures that would be likely to enhance generalization (cf. Stokes & Baer, 1977), including the use of multiple exemplars, stimuli (i.e., peers and teacher) common to the training and natural environments, and the involvement of the children in the de-

velopment and rehearsal of role-play scenes relevant to their own interpersonal experiences. Possibly, those procedures were not powerful enough to ensure generalization. Unfortunately, the teachers did not comply with the procedure that may have potentially been the most powerful. Based on self-report and the absence of self-recording, the teachers apparently made no attempt to provide specific feedback to the experimental or control subjects about the quality or quantity of their social interactions with peers.

Further research is needed on the use of teacher feedback and other procedures that are likely to increase the probability of generalization. The inconsistent findings on generalization measures in the social skills literature and the lack of systematic training procedures designed to enhance generalization (Cooke & Apolloni, 1976; Gottman et al., 1976; Oden & Asher, 1977) suggest the need for substantial increases in the amount of attention that this area receives.

In the present study, the lack of generalization in the free play setting could have feasibly been due to the use of broadly defined behavioral categories (e.g., frequency of verbal interaction and play behavior) rather than the behaviors targeted during training. Thus, qualitative as opposed to quantitative changes may have occurred. However, subjective observations and verbal reports by the teachers did not support this. In addition, the findings of the sociometric questionnaires supported the lack of generalization in the free play setting. Another plausible explanation for the lack of generalization may be that the learning disabled children represent a different population than subjects in previous studies (e.g., Gottman et al., 1976; LaGreca & Santogrossi, 1980) and may thereby need specialized training. This seems unlikely however, given the comparability of the children's performance on the trained and untrained role-play scenes to previous findings in the literature (Bornstein et al., 1977).

An alternative explanation for the lack of generalization in the present study, as indicated by the free play and sociometric measures, concerns the selection of target behaviors on the basis of a role-play test. The poor correspondence found in previous studies (Bellack et al., 1979; Bellack et al., 1978) between performance on role-play tests and measures obtained in naturalistic settings, suggests that the selection of target behaviors based on performance in the natural environment may be more relevant to a child's daily social interactions than would behaviors based on performance deficits in role-play situations. Furthermore, target behaviors that have an empirically demonstrated relationship with a criterion measure of social competence (such as sociometric ratings) may be the most valid and relevant skills to be focused on during training. The few studies (Gottman et al., 1976; LaGreca & Santogrossi, 1980; Oden & Asher, 1977) that have included behaviors with an empirical foundation based on earlier studies have found at least moderate support for improved social skills in the natural environment.

A conclusion of major importance that can be made on the basis of the present findings and past research (Cooke & Apolloni, 1976; Gottman et al., 1976; Hymel & Asher, Note 1) is that social skills training has not consistently been shown to be a valid procedure for the treatment of social skills deficits in children. Although the results are certainly encouraging, researchers and clinicians engaging in such training with children must proceed with great caution until we learn more about ways to improve a child's social competence in settings relevant to that child. Social skills training programs that do not show generalization to the natural environment should be looked upon critically and should not be considered to be effective until proven otherwise.

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