*STACKING THE DECK: TEACHING SOCIAL SKILLS TO
RETARDED ADULTS WITH A MODIFIED TABLE GAME*

R. M. FOXX, MARTIN J. MCMORROW, AND CYNTHIA N. SCHLOSS

ANNA MENTAL HEALTH AND DEVELOPMENTAL CENTER AND
SOUTHERN ILLINOIS UNIVERSITY AT CARBONDALE

This study developed and evaluated a social skills training program for institutionalized mildly or moderately retarded and dually diagnosed individuals. Social skills were conceptualized as requiring an action or reaction within six skill areas: compliments, social interactions, politeness, criticism, social confrontation, and questions/answers. The program taught social skills using a commercially available table game, *Sorry*, and a specially designed card deck. Each card represented one of the skill areas and was designed to train either an actor or reactor response. The program featured response specific feedback, self-monitoring, individualized reinforcers, and individualized performance criterion levels. A multiple baseline across two groups ($N = 3$ per group) revealed that the game contingencies increased social skills in all targeted areas. After training, the subjects displayed their newly learned skills at or above their trained levels in two different settings with novel persons present. Although untargeted, the complexity of the subjects' responses increased across conditions, since there was a steady increase in the number of words they used per response. The program appears to be a viable means of training social skills since it uses standardized training procedures, requires only one facilitator, and is in itself a social situation that may encourage interactions with peers, cooperation, competition, and politeness.

DESCRIPTORS: social skills, educational game, mentally retarded, generalization, multiple baseline, social validation

Research designed to teach social skills to the mentally retarded has typically used training methods that are effective with other populations, i.e., combinations of instructions, modeling, role playing, informational feedback, and social reinforcement (Bates, 1980; Berler, Gross, & Drabman, 1982; Kelly, Furman, Phillips, Hathorn, & Wilson, 1979; Matson, 1980; Senatore, Matson, & Kazdin, 1982).

Although these studies demonstrated that social skills can be acquired, there are two reasons

why they may not be easily replicated. First, there has been a lack of procedural specificity. Consider, for example, that Berler et al. (1982) reported that "leaders coached the children, modeled appropriate responses, and gave feedback and praise," (p. 44) with no further specification of these procedures. Second, there has been a lack of specificity regarding the facilitator or trainer's behavior. As a result, it is difficult to determine how, when, and why the various procedural components were used. The absence of such specifications leads to the assumption that the procedures were successful because the facilitators were specially trained individuals who had good behavioral skills. Yet, even when a skilled trainer is employed, it appears that some ongoing trainer "coaching" may be necessary in order to ensure a training effect. For example, Senatore et al. (1982) reported that "therapist training continued during treatment"

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(p. 315). Thus, it is left to the consumer to determine what constitutes effective use of the procedures (e.g., what type of feedback was given and how), as well as the optimal point in training to implement them (e.g., when to give feedback and why).

There is an additional problem that is tangentially related to the issue of replicability. All the above studies included the simultaneous use of two or more trainers. Although the use of multiple trainers may be necessary during role playing and possibly facilitate generalization, it may be impractical in contemporary treatment settings such as workshops and community living facilities where the number of staff available to conduct the training may be limited. In such settings, the program may be less effective if implemented by a single facilitator or simply not selected if two facilitators are not available.

The purpose of the present study was to develop a social skills training program that would continue the successful tradition of earlier studies yet possibly enhance replicability. Accordingly, we sought to develop well-specified procedures that could be conducted by a single facilitator with no behavioral expertise. Thus, the program was intended to be potentially applicable to a wide variety of treatment settings.

The program was designed to teach interpersonal skills to mentally retarded adults within a board game format. It featured: (a) the use of standardized procedures on a daily basis, e.g., the game; (b) the simultaneous training of several individuals exhibiting a variety of skill deficits (training has usually been conducted with one individual at a time rather than with a group of individuals); and (c) the involvement of a single trainer/facilitator who had no behavioral background. The evaluation of the program included: (a) an in-depth analysis of whether the skills were acquired in the game situation; (b) individual analyses of a number of social skill competency areas; and (c) whether the trained skills were displayed in untrained settings.

METHOD

Subjects

Unit staff of a coeducational institutional ward that housed high functioning retarded and dually diagnosed adults who were behavior problems were asked to refer residents in need of social skills training. Of the ten persons referred, six players were chosen on the basis of their availability to participate and familiarity with the board game and its rules. Additional evidence that the referred individuals needed social skills training was obtained from a review of their hospital records. Five of the six players had been regularly involved in a "Social Adjustment Training Program" that was conducted daily within a small group format. The sixth player was scheduled to receive such training, but frequently did not because of his aggressive behavior on the unit. The players' individualized training goals indicated they were deficient in the social skill areas that we had targeted to teach. In fact, some of the players did not display even the most basic social interaction skills. For example, the primary training goal for one of the players was to learn to say "please" and "thank you," while for another the goal was to teach the individual to be courteous and use appropriate greetings. The records further indicated that the players had made little progress after months of this training, since each month the same goals had been written in the monthly training summaries. In fact, in one case the trainer had written in three consecutive monthly reports that the player "did not benefit from the class."

Players were assigned to one of two groups with each containing two males and one female. Group One's mean age was 27; Group Two's was 30; the overall age range was 20-47. The subjects' primary diagnosis was mild or moderate mental retardation, although one subject in each group had the secondary psychiatric diagnosis of schizophrenia (S2, Group One) or personality disorder (S1, Group Two). The mean I.Q. was 47 for Group One and 53 for Group Two. The

long-range treatment goal for all subjects except S2 in Group Two was community placement. The unit's long-range treatment goal for S2 was the development of "temper control." During training, this subject was excluded from three games (sessions) because he was in time-out for displaying aggressive behavior on the living unit. However, he never became aggressive in any phase of the social skills program.

Materials

A commercially available table game ("Sorry," Parker Brothers, Salem, Mass.), with which all subjects had previous experience, was used as the format by which the targeted social skills were trained and practiced. The game is similar to Parcheesi in that it is typically played by four persons and involves the movement of four identically colored pieces around a game board. The number of spaces moved each turn is determined by drawing a numbered card from a deck. The only modification of the game materials was the substitution of a special card deck. Whereas the 45 regular game cards simply specify the number of spaces a player may move, each revised card included this number and a social situation designed to elicit a complex verbal response from the player before his or her game piece could be moved. A 48-card deck was used because it permitted an equal number of responses from the six skill areas to be trained during each game (i.e., eight cards per area) and four players each game (i.e., three subjects and the facilitator). For the three additional cards, the numbers that indicated how many spaces a player could move on a game turn were determined by randomly drawing three cards from the regular 45-card deck.

Experimental Design and Control Procedures

A multiple baseline design across groups was used. Other control procedures included (a) randomizing the cards by shuffling them prior to the baseline, (b) staggering the starting card on a game by game basis, e.g., beginning with card 13

one game and card 25 in the next game, and (c) having a different player take the first turn each game. These procedures also ensured that the players would not be able to predict the sequential presentation of the cards (situations). After four games each player had been exposed to all 48 game cards (i.e., 12 situations daily for 4 days). During baseline, Group One played four games while Group Two played eight games or two complete four-game series.

Settings

All games were played in a large, barren room located in the basement of one of the institutional buildings. The room was designed with a one-way vision glass along one of its walls so that videotaping could be conducted from an adjacent room. The training room contained a table and four chairs. None of the players had ever been in the room. The two assessments in untrained settings were conducted in: (a) a large lounge area on the players' living unit and (b) a lounge area in the basement. The living unit assessment was audiotaped. Players were aware that they were being videotaped or audiotaped. The facilitator in all games was a female graduate student intern in Vocational Education (the third author) who had no previous interactive history with the players or experience in training social skills. She also had no training in behavior analysis.

Data Collection

Target behaviors. The skills to be trained were determined by reviewing the literature, consulting with unit staff, and observing players' general social competence on their living unit, in the institutional cafeteria, and in a social and vocational setting. Based on these preassessments, six social skill component areas were identified: compliments, social interaction, politeness, criticism, social confrontation, and questions/answers. Eight game cards were developed for each of the six component skills. Each social skill component was further broken down into

four "actor" and "reactor" situational competencies. An actor situational competency required that a player initiate some interaction, e.g., one of the question/answer situations was "you are at a restaurant and cannot find the bathroom . . . What would you do?" A reactor situational competency required that a player respond to an interaction initiated by someone else, e.g., one of the criticism situations was "someone tells you that your drawing isn't very good . . . What would you do?" Correct responses in each component area were determined by asking 20 normal persons, not affiliated with the training, to respond in writing to each situation. From these written responses, specific criteria for correct responses in each area were developed. (A copy of the 48 social situation items can be obtained by writing the senior author.) Table 1 lists the criteria used to determine correct responses. Although these criteria served as a guide in scoring, novel responses were also scored correct when they indicated an effective or useful solution to the situation posed by the game card. In general, the first response was the one that was recorded except when players responded in a vague or incomplete manner (e.g., "tell them about it"). In such cases they were asked for clarification or more information before their response was scored.

In addition to scoring the players' responses to the situations, the number of words per response was recorded. These measures were taken from verbatim transcripts of the player responses in baseline, the game, and the on unit tests. All words were counted, with contractions being counted as a single word. Words per response was considered to be a corollary measure since it would reflect the complexity of the players' social responses, but had not been targeted in the training.

Procedures

Rule revisions. In addition to the special card deck, several revisions in the game rules were necessary. First, because the players' reading abilities were limited, the facilitator read each

Table 1
Criteria for Determining Correct Responses

<i>Skill Area</i>	<i>Category</i>	<i>Characteristics of a Correct Response</i>
Compliments	Actor	1. Tells other person what you like and/or 2. How you feel about it
	Reactor	1. Acknowledges the compliment and/or 2. Relates back to other person (e.g., your shirt is nice too)
Social Interaction	Actor	1. Initiates a conversation and/or 2. Helps keep conversation going
	Reactor	1. Lets other person know you are listening and/or 2. Helps keep conversation going
Politeness	Actor	1. Addresses the issue and/or 2. Uses appropriate language (e.g., thank you, excuse me)
	Reactor	1. Addresses the issue and/or 2. Offers an explanation
Criticism	Actor	1. Tells what it is you don't like and/or 2. Says something nice (e.g., you look better in red)
	Reactor	1. Tells other person what you think and/or 2. Says something nice
Social Confrontation	Actor	1. Tells other person what you think about the problem and/or 2. How you feel about it
	Reactor	1. Tells other person what you think about the problem and/or 2. What can be done about it
Questions/Answers	Actor	1. Asks an appropriate person (if applicable) and/or 2. States question completely
	Reactor	1. Answers the question and 2. If "no" gives an explanation

player's card at the beginning of each turn. Second, players were allowed 10 sec in which to

initiate a response to the card situation. This rule was used to limit the possibility of other players responding to a card and to encourage spontaneous responding. Third, no extra turns were allowed (In the standard Sorry game, certain numbers on a card permit the player to take an extra turn). Fourth, players were allowed to move out of "start" or into "home" regardless of whether they selected a card with the exact number required (In the standard Sorry game, a player must draw a card that contains the exact number of spaces needed in order to move his or her playing piece out of start or into home). Finally, the game ended when all cards in the deck were used instead of when one player had moved all of his or her game pieces home. The player with the most pieces home or closest to home was declared the winner, although no rewards were programmed for "winning."

Baseline. During baseline the special card deck was used and all rule revisions were in effect. Players and the facilitator took their turns, but no specific feedback followed the players' responses. A player simply picked a card from the top of the deck and handed it to the facilitator who then read it. After any response by the player, the facilitator merely requested that the player move the number of spaces designated on the card. The facilitator always gave (modeled) a correct response on her turn. All players received a snack (e.g., a large pretzel stick, a cup of coffee) following the game regardless of their performance. Thus, the baseline served to assess the players' entry levels of competency in the six social skill areas.

Social skills game. All conditions were the same as in baseline except: (a) the trainer provided specific verbal feedback; (If a correct response was given, the trainer simply stated "good answer." If a response was incorrect the trainer said "that's wrong," repeated the situation, and gave a correct response.), (b) players were only allowed to move their game pieces when they responded correctly, (c) players self-monitored by recording their number of correct

responses on index cards placed in front of them, and (d) although all players received a snack following the game (same as baseline), only players who met their individualized performance criterion received a special daily reward that they had selected from a group of items prior to the start of the game (e.g., 25¢, a bottle of soda, homemade cookies). The individualized criteria for special rewards were established on the basis of each player's mean correct responses during baseline. Each player's criterion began at 30% above his or her mean baseline score. Whenever a player reached this criterion, it was increased to 60% above baseline and finally to 90% correct. (Thus, all players would be eventually required to correctly respond in 11 of the 12 situations each game in order to achieve criterion). The next higher criterion was in effect the following game. In order to maximize the effectiveness of the performance criteria, the facilitator frequently asked players during the game how many correct responses they needed in order to "win" their special reward. To aid them in this determination, each player's criterion number was circled on his or her index card. Immediately following the game, players were assisted in plotting their number of correct responses on graphs that were posted on the wall of the game room and received feedback from the facilitator regarding their overall progress. They then received their individual rewards for having achieved criterion or a small snack (similar to baseline) for having participated if they had not met criterion. A player's training was completed if he or she had reached the 90% correct criterion during three consecutive games and completed a game series (i.e., exposure to all 48 game cards) or when 12 games were completed. If a player did not participate, e.g., because of having met the exit criteria or because of uncontrollable circumstances, that player's response cards were answered by the facilitator. Games were conducted daily (except for weekends) and lasted between 45 and 75 min each.

Generalization. One week following the completion of a group's last training game, the

second author, who had not been involved in the training, met individually with each player for four consecutive days. Twelve game cards were used each day to assess each player's responses in interviews conducted in the lounge on their living unit. Situations were presented in the context of an informal conversation and scored on the basis of the aforementioned criteria. However, no response specific feedback or reinforcers were provided. A second assessment involved the use of a social simulation exercise. The simulation was conducted in a novel setting, i.e., the basement lounge area, and was designed to approximate social situations as they might occur in the players' natural environment. The simulation involved the game facilitator, an institutional employee confederate who was unknown by the players, and a peer confederate from their living unit. Thirty-one of the 48 game situations were scripted into the simulation such that the sequence and presentation of situations were different from training. For example, situation #12 in the simulation corresponded to situation #6 in the game which read "Someone asks you if you like the picture they drew. You think it isn't very good. What would you say?" In the simulation, situation #12 involved a confederate the player had met only minutes before who showed the player a distorted picture and said, "I did this one this morning, how do you like it?" The simulation was developed so that motor responses (e.g., taking a cup from the table, approaching a person to make a request) would accompany the verbal responses that were required of the players. (A copy of the simulation script can be obtained by writing the senior author.) To enhance the realism of the simulation, several props were used including a television set, stereo, coffee pot, coke machine, and pictures. The players received no response feedback during the simulation. They were debriefed and praised following the simulation regardless of their performance.

Recording and reliability. During a game, each response to a game card was scored by the facilitator and an observer (the second author)

according to a dichotomous, i.e., correct/incorrect, scale (cf. McFall, 1982). The observer was located in the videotaping room. Reliability was calculated on a game by game basis by dividing agreements by agreements plus disagreements, times 100. In addition, after the training two randomly selected baseline and training games for each group were independently scored by four mental health professionals who were unfamiliar with the design and intent of the study. To score the responses, the four raters read verbatim transcripts from the games.

During the baseline and training games, the mean interobserver reliability between the facilitator and observer for Group One was 96% (range 88.9 to 100%) and 98.1% for Group Two (range 94.4 to 100%). Comparisons between the observer and each of the four independent raters across the four games yielded respective mean reliability figures for Group One of 88.5, 84.9, 85.4, and 84.9% and 87.5, 81.3, 88.0, and 84.3% for Group Two. Comparisons between the observer and the four independent raters on each game and across the four raters yielded mean interobserver reliability scores for Group One of baseline game one, 88.0%; baseline game four, 88.1%; Training game two, 86.4%; and training game six, 81.2% and for Group Two of baseline game six, 79.1%; baseline game eight, 84.4%; training game two, 91.1%; and training game four, 86.5%. A question by question analysis of the 1,536 responses involved in the reliability assessment between the observer and the four independent raters revealed that all four disagreed with the observer on the average of only 2 out of every 48 responses in a given game. This average rate of disagreement was unaffected by condition since 2.5 disagreements occurred in the baseline sessions whereas 1.8 occurred in the training sessions.

Reliability between the observer and facilitator in the generalization tests on the unit ranged between 94.4 and 100%, while their mean reliability across all six players in the simulation was 85.9%. Responses from the on

unit generalization test and the simulation were independently scored by four different mental health professionals who were unfamiliar with the design and intent of the study. Comparisons between the observer and each of the four raters across the four on unit generalization tests yielded respective mean reliability figures for Group One of 78.5, 79.8, 80.3, and 81.2% and 84.7, 81.9, 88.9, and 87.5% for Group Two. Comparisons between the observer and raters on each test and across the four raters yielded mean interobserver reliability scores for Group One of 80.5, 75.0, 79.0, and 85.3%, and for Group Two of 86.1, 86.8, 86.1, and 84.0%. As mentioned earlier, the simulation contained 31 of the 48 situations. The mean interobserver reliability scores between the observer and each of the four raters were respectively: Group One, 74.8, 77.1, 75.0, and 68.4% and Group Two, 76.3, 77.4, 80.6, and 78.2%.

The reliability scores between the observer and facilitator were always higher than between the observer and the eight independent raters. The most plausible explanation for this difference may be that the independent raters were not provided any specific criteria by which to determine response correctness. Rather, they were simply asked to evaluate whether or not, in their opinion, the subjects' responses were socially appropriate.

RESULTS

Training. Figure 1 shows that during the baseline Group One averaged 26.4% correct or about one correct response for every four game cards. During the last series of four training games, Group One was averaging 75% correct. Group Two averaged 40.2% correct in baseline and about 78% during training.

A close examination of Figure 1 suggests that the groups' performance fluctuated during training, e.g., both had a lower mean percent correct in training game three than game two. Recall, however, that each player received a sequence of 12 cards per game—thus four games were

required before a player had been exposed to all four card sequences or the 48 situations. Thus, the first four training games represent each player's first exposure to a particular card sequence under training conditions. Figure 2 shows each player's performance curves on each card sequence over exposures to that sequence. It reveals that the players improved on 22 of 24 of their first training exposures to each particular card sequence. Two players (S2 in both groups) achieved the same score in their first training exposure to the "B" sequence of questions as they had during baseline. The individual graphs in Figure 2 also show that the players' performance generally improved as they were reexposed to the various card sequences. The notable exception was S3 in Group One, whose performance deteriorated from the second to the third exposure on three of the four card sequences.

Of interest were the gains achieved in the six social skill component areas. Figure 3 shows that both groups improved over baseline in every skill area. In general, these gains accelerated throughout training within each area with the last training exposure showing the greatest improvement in five of the six areas for Group One and four of the six areas for Group Two.

As mentioned earlier, the game cards posed situations that were not only differentiated by skill area, but by whether an "action" or "reaction" was required, i.e., four of the eight cards in a given skill area required an action and four a reaction. Table 2 shows that both groups achieved gains in both categories. The groups performed consistently better on the actor situations in each respective training series than on the reactor situations. This same effect occurred in the baseline series with the exception of the second baseline series for Group Two.

As noted previously, all games were videotaped. Our review of the tapes revealed that there were correlated increases in nontargeted social skills during the training. For example, players displayed more spontaneous conversa-

tion and eye contact, offered to move another player's piece when it was difficult for that person to reach, asked another player to move a piece for them, and frequently assisted in counting another player's spaces or in tallying the number of correct responses made. The most reasonable explanation for these results was that the game itself represented a social situation wherein cooperative and interactive behaviors were primed and mutually socially reinforced.

Generalization. Generalization was examined in two settings. In one setting, the unit lounge, players were asked to respond to the 48 game situations within an informal interview. The situations were presented for 4 days, i.e., 12 per day, but with no response specific feedback or reinforcement in effect. Figure 1 shows that Group One's responding improved slightly above their training average whereas Group Two was slightly below its training average. Although individual responding was more variable over sequences of questions than during training (see Figure 2), Figure 3 and Table 2 show that training gains were apparent in all skill areas as well as in the actor/reactor categories.

Table 2
Group Performance on Actor/Reactor Skill Categories

<i>Exposure</i>	<i>Percent Correct</i>	
	<i>Actor</i>	<i>Reactor</i>
<i>Group One (N = 3)</i>		
Baseline Series 1	29.2	23.6
Training Series 1	61.1	59.7
Training Series 2	72.2	55.5
Training Series 3	80.5	70.8
On Unit Generalization Test	84.7	63.9
<i>Group Two (N = 3)</i>		
Baseline Series 1	52.8	38.9
Baseline Series 2	30.5	38.9
Training Series 1	73.6	70.8
Training Series 2	80.0	73.6 ^a
Training Series 3	91.7	79.2 ^b
On Unit Generalization Test	83.3	69.4

^aSubject 2 missing during part of this series.

^bSubject 3 met criterion in Training Series 2 and thus was not required to participate in the last training series.

The second setting was used to evaluate player performance in an environment that very closely approximated a natural situation. Thirty-one responses, derived from all the trained skill areas, were incorporated into a simulated social situation in a setting and with persons not previously associated with the training. Figure 1 shows that both groups averaged above 75% correct during the simulation which was above their mean performance levels during training. As noted earlier, three individuals were involved in the simulation. The facilitator presented 32% of the situations, the employee confederate 52%, and the peer confederate 10%. Of interest were the players' scores in response to situations posed by each of these individuals. The percent correct scores for the combined groups were facilitator 84.4%, employee confederate 76.0%, and peer confederate 70.8%, respectively.

Number of Words per Response:

A Corollary Measure

Data were collected on the number of words players used in forming each response to a situation during baseline, training, and the on unit generalization test. Comparisons were made by sequence, i.e., each player's responses to the same situation across conditions. For example, player responses in baseline game one were compared with training games one, five, and nine, and on unit generalization test one. Table 3 shows that in every case the number of words per response increased during the players' first exposure to situations in the training condition and, in general, continued to increase as training progressed. At the end of training, the players' responses usually contained twice as many words as their corresponding responses in baseline. Group 2 responded with nearly the same number of words per response during baseline series two as in the first baseline series, thereby indicating that it was the game contingencies that had affected their subsequent increases in this nontargeted behavior. In addition, the data from the on unit generalization tests indicated that the players continued to use more complex

Fig. 2. Percentage of correct responses of each player over successive exposures to the four game card sequences. The letters indicate the player's percent correct for that sequence in the living unit generalization test.

S2, from 300 mg Mellaril to 200 mg; Group 2, S1 from 800 mg Thorazine to 200 mg; S2, 1000 mg Thorazine to 450 mg; S3, 400 mg Mellaril to 100 mg. Of this group, S2, Group 1 and S3, Group 2 were placed in the community. Third, the training programs for two of the three players who remained institutionalized were changed. Subject 1 from Group 1 was moved from a prevocational workshop to a community-based workshop. Similarly, S1 (Group 2), who had no vocational program prior to training, is now receiving training in janitorial skills. These program changes appear important since Kelly, Wildman, and Berler (1980) noted that deficits in social functioning have an adverse impact on success in competitive employment situations. To us, all of the above events could cautiously be considered as indirect evidence for generaliza-

DISCUSSION

The results showed that the program increased the social skills of all players during training and that these behaviors were later displayed in two nontrained settings in the presence of novel people. The players' gains in social skills occurred over a wide range of areas and in situations that required either an action or reaction. There was also an increase in the complexity of the subjects' responses across conditions. A nontargeted behavior, the number of words per response, increased during training and continued to do so in nontrained settings.

Several factors appear to have contributed to the program's effectiveness including the standardized use of response specific feedback, self-monitoring, individualized reinforcers, modeling, and individualized performance criteria. At

Fig. 3. Mean percentage of correct responses during baseline, the social skills game, and the living unit generalization test across the six social skill areas. Group One was exposed to a single 4-game set during baseline whereas Group Two was exposed to two 4-game sets. Both groups were exposed to three 4-game sets during the social skills game and to a single 4-game set in the living unit generalization test.

this time, we do not know which factors, either singularly or in combination, produced the training effect because no component analysis was conducted.

The results from the nontrained settings were gratifying since it is frequently reported that trained social skills do not generalize (e.g., Berler et al., 1982). Nevertheless, the simulation

results do require some qualification and discussion. Although the simulation took place in an unfamiliar setting and used confederates not previously associated with the training and unknown to the players, the facilitator was present. During the simulation, she introduced the confederates and approximately one third of the test situations. Thus, she could have had some

Table 3
Mean Number of Words per Response per Group across Exposures

Exposures:	<i>Baseline</i>		<i>Training</i>		<i>Generalization</i>	
<i>Group One (N = 3)</i>						
B1		T1	T5	T9	G1	
3.3		6.0	7.3	7.7	9.5	
B2		T2	T6	T10	G2	
5.1		7.2	8.1	8.7	10.3	
B3		T3	T7	T11	G3	
— ^a		7.3	7.9	7.5	9.4	
B4		T4	T8	T12	G4	
5.6		8.4	9.4	9.4	10.6	
Grand Mean	4.7	7.2	8.2	8.3	9.9	
<i>Group Two (N = 3)</i>						
B1	B5	T1	T5	T9	G1	
2.9	3.1	4.4	4.6	5.9 ^c	4.8	
B2	B6	T2	T6	T10	G2	
3.2	3.2	4.6	5.9 ^b	7.0 ^c	5.2	
B3	B7	T3	T7	T11	G3	
— ^a	3.1	5.6	6.0 ^b	7.3 ^c	5.2	
B4	B8	T4	T8	T12	G4	
3.2	3.4	5.4	4.4 ^b	6.3 ^c	5.9	
Grand Mean	3.1	3.2	5.0	5.1	6.6	5.3

^aResponses could not be analyzed because of A-V equipment problem.
^bSubject 2 missing during part of this series.
^cSubject 3 met criterion in Training Series 2 and thus was not required to participate in last training series.

influence on the players' behavior. However, this seems unlikely for two reasons. First, the players performed well, i.e., at or above their training mean in the on unit tests. Second, although the players scored highest in simulation situations presented by the facilitator, their mean percent correct was at or above their training mean in the situations presented by the two confederates. In addition, there is no direct basis by which to evaluate the simulation results since no preassessment of social skill performance was conducted in the simulation setting. Thus, although hospital notes, staff referrals, preobservations, and the baseline assessments indicated that the subjects had serious social skill deficits, we cannot say that their participation in the game was responsible for the social behaviors they displayed in the simulation. However, the indirect evidence for generalization cited earlier suggested that institutional staff who were responsi-

ble for the players had seen some improvement in their social functioning after they had received the training. Consider that players were discharged, had their psychotropic medications reduced, and were placed in more independent and demanding vocational programs.

The present study used several methods to ensure the social validity of the skills that were trained. First, the skill areas and situations created for those areas were developed from systematic observations of the subjects and their peers in several natural settings. Second, the criteria for correct responding were developed by compiling and synthesizing the responses to each game situation of 20 normal persons not associated with the program. Third, the validity of the trained social skills was substantiated by the acceptable levels of reliability between the observer and eight naive mental health professionals who had no criterion by which to judge

the subjects' responses other than what they deemed to be an "appropriate action or reaction" to the situation. Allowing these raters to use their own criteria, we felt, more closely approximated the "real world" since the ultimate determination of whether or not someone is socially skilled is how a majority of "normal" individuals perceive that person's behavior.

The present research differs from most social skills studies in that training results are presented. Generally, in-training results are omitted or considered secondary to the results obtained in analogue settings or simulations. Of course, the primary rationale for omitting training results is that behaviors performed in analogue settings should be more closely related to those that would be anticipated in natural settings. Other possible reasons are that in the typical social skills study, the training procedures are highly directive and conducted in settings that are clearly not comparable to those where the behavior is to be performed. For example, social skills training programs often require subjects to practice a single target behavior repeatedly in a role playing situation until some prespecified criterion is reached, e.g., two consecutive correct responses. And, this training is often conducted in the therapist's office or in specially equipped training rooms. As a result, researchers using these programs and settings have regarded reporting training results as unnecessary. The present study, however, used a program that was less directive and perhaps more importantly, conducted the training in a situation (i.e., the game) where social interaction with peers was likely to occur. In other words, the game included many of the characteristics that other studies have built into their analogue settings. For this reason, we felt that the training data were quite germane and were pleased that the videotapes revealed correlated improvements in cooperation between players, politeness and sharing. Some additional reasons for presenting the training results were that the game targeted and evaluated a wider range of social skills areas than the typical study, and the game itself may

have facilitated generalization for the reasons stated above. Perhaps the failure of many social skills studies to report greater generalization of behaviors is a result of the lack of similarity between the training and natural settings.

The social skills game appears to be quite useful for training retarded persons in social skills. There seem to be a number of practical advantages to the game format in contrast to more conventional social skills training methods. First, the game requires only one facilitator whereas most studies need two or more. Second, the use of standardized procedures to train a wide range of social responses may preclude the use of highly trained facilitators thereby permitting wider clinical application of the program. Third, setting individualized criteria for reinforcement permits the simultaneous training of a variety of skills to a number of persons with different skill deficits. Fourth, the nature of the table game simulates real life situations and may encourage peer interaction, cooperation, competition, and problem solving. Fifth, a game format appears to be highly versatile, such that the trainer can concentrate on ameliorating one skill deficit or a number of deficits according to the needs of the individual(s) receiving training. Sixth, the use of individualized criteria and reinforcers permits all the players to be winners since achieving their specific criterion results in the opportunity to select their preferred reinforcer. Seventh, the game could possibly be used as an assessment tool to pinpoint social skill deficits prior to training. With this information, the game's situation cards could then be uniquely designed for a given individual or group of individuals displaying similar deficits.

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