THE EFFECTIVENESS OF A SHORT-TERM
INTERPERSONAL PROBLEM-SOLVING PROGRAM
FOR AGGRESSIVE PRESCHOOL CHILDREN WITH
LOW ACCEPTANCE AMONG PEERS

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BY

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A thesis submitted to the School of Graduate

Studies in partial fulfillment of the

requirements for the degree of

Master of Science

Department of Psychology

Memorial University of Newfoundland

February 1995

St. John's   Newfoundland

Abstract

The purpose of the present study was to evaluate the effectiveness of a short-term interpersonal problem-solving program for preschool children who are perceived by teachers as aggressive and have low social acceptance among their peers. Thirty-four preschool children identified as rejected (5 females, 11 males) or average (10 females, 8 males) based on ratings of peer acceptance and teacher ratings of behavior in the preschool setting were assigned to either treatment or attention control groups. Results indicated that children in the treatment group demonstrated significant improvement in problem-solving skills following 13 training sessions and gains were maintained at a 4 week follow-up. Children in the treatment group also showed a significant decrease in aggressive behavior at follow-up. Training was not found to be differentially effective for rejected and average children. There were no significant changes in ratings of peer acceptance. The implications of these findings and suggestions for future research are discussed.

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Introduction

In recent years, both the importance of children's peer relations in the development of social competence and the effectiveness of interventions aimed at improving poor peer relations have received considerable attention. Concern about the quality of children's peer relations has been motivated in large part by findings from studies suggesting that poor peer relations are associated with adjustment problems later in childhood or adulthood (for reviews, see Kupersmidt, Coie, & Dodge, 1990; Parker & Asher, 1987). Poor peer relations have been shown to be related to school dropouts (Ollendick, Weist, Borden, & Greene, 1992), behavioral problems and psychopathology in adolescence (Coie, Lochman, Terry, & Hyman, 1992; Kupersmidt & Coie, 1990; Morison & Masten, 1991; Ollendick et al., 1992), externalizing problems in middle childhood (Hymel, Rubin, Rowden, & LeMare, 1990), criminal behavior and delinquency (Kupersmidt & Patterson, 1991; Ollendick et al., 1992; Roff, 1961; Roff & Sells, 1968), academic difficulties (Bonney, 1971; Li, 1985; Ollendick et al., 1992), young adult psychosis (Roff, 1963), and psychiatric problems during adulthood (Cowen, Pederson, Babigian, Izzo, & Trost, 1973).

As will be discussed in the literature review that follows, children's peer relations have typically been assessed by determining a child's social status or level of social standing relative to other children in a peer group. There is a growing body of evidence to suggest that the types of behaviors children display among peers play an important role in determining their social status. One finding that has emerged consistently from studies examining the behavioral correlates of social status is that rejected children, across a wide age range, are described by peers, teachers, and independent observers as more aggressive, disruptive and uncooperative than their more accepted peers. A predominant link between aggression and peer rejection suggests that reducing the frequency of these behaviors should be considered an essential feature of intervention programs designed to improve the peer relations of children identified to be at risk.

One approach to reducing the frequency of aggressive behavior is direct behavioral intervention where discrete observable behaviors are targeted. An alternative approach is to target interpersonal problem-solving skills by teaching children skills such as alternative

thinking and consequential thinking, as research suggests that poorly adjusted children are deficient in problem-solving skills. For example, poorly adjusted children have been found to generate fewer, more aggressive solutions to interpersonal problems than do their more adjusted peers. Research suggests that through training in interpersonal problem-solving, a child learns to generate a wider range of more appropriate, nonaggressive solutions to interpersonal problems, thus strengthening the relationship between problem-solving abilities and behavioral adjustment.

In the present study, aggressive preschool children with low acceptance among peers were selected and trained in interpersonal problem-solving skills. Specifically, the study was designed to examine the following research questions with respect to this population:

1. Is there a significant relationship between social status and problem-solving skills?

2. Will there be significant improvement in the problem-solving skills as a result of the present problem-solving training program?

3. If there are improvements in problem-solving skills as a result of the present training program, what are the effects, if any, on aggressive behavior?

4. If there are improvements in problem-solving skills, what are the effects, if any, on peer group acceptance?

Review of the Literature

Assessment of Social Status

Behavioral observation strategies, exemplified by the rate-of-interaction approach, define social status in terms of the frequency of peer interaction as opposed to other more qualitative aspects of the interaction. Children whose total rate of interaction is considerably below average for the group are referred to as socially withdrawn or socially isolated. This rate-of-interaction approach has been criticized because of a lack of predictive and concurrent validity (Asher, Markell, & Hymel, 1981; Gottman, 1977; Gottman, Gonso, & Schuler, 1976; Li, 1985).

As an alternative, sociometric measures have been used extensively as a means of assessing a child's social status, relative to that of the other children in a peer group (for reviews, see Bullock, Ironsmith, & Poteat, 1988; Hymel, 1983). Sociometric measures provide an evaluation of a child's peer relations from the perspective of the peers themselves, rather than relying on external, adult sources of information (Hymel, 1983). The two most commonly used sociometric measures are the peer nomination and rating-scale procedures.

The peer nomination measure developed by Moreno (1934, as described in Bullock et al.; 1988 and Hymel; 1983) was the most frequently used procedure to assess social status in early research. This procedure requires children to nominate a predetermined number of classmates according to specified criteria such as most preferred or least preferred playmate or workmate. Sociometric scores of peer acceptance or rejection are derived from the number of positive and negative nominations received in each category. In an attempt to simplify the procedure for preschool children, McCandless and Marshall (1957) suggested using photographs of peers. This procedure requires children to select pictures of peers from a

display of all classmates, rather than asking for verbal or written nominations.

Nomination procedures are attractive because of their ease of administration. Although peer nomination acceptance and rejection scores can be considered separately, they can also be combined into social impact and social preference scores which allows for the classification of individuals into rejected, average, popular, neglected, and controversial social status groups (Coie, Dodge, & Coppotelli, 1982; Newcomb & Bukowski, 1983; Peery, 1979), each of which has been found to be associated with distinct behavioral characteristics. Of particular interest is the distinction between two groups of unpopular children, those of rejected and neglected status. Often, however, nomination methods produce a skewed distribution of votes and very little or no information on many group members. Nominations are prone to biases resulting from peer friendship or other possible halo effects (Asher & Hymel, 1981; Gresham, 1981; Schofield & Whitley, 1983).

The rating-scale procedure has become increasingly popular in the literature as a means of assessing social status. Developed by Roistacher (1974), the rating-scale

method requires children to rate classmates according to some specified interpersonal criteria, such as how much they like to play with or work with each one. With older children, this usually takes the form of a 5-point, Likert-type scale (Singleton & Asher, 1977). A simplified version where children have to rate peers on a 3-point scale by assigning photographs of classmates to one of three boxes identified by smiling, neutral, or frowning faces has been described for use with preschool children (Asher, Singleton, Tinsley, & Hymel, 1979). Ratings received from all classmates are averaged for each child to obtain a rating-scale score.

An advantage of the rating-scale method is that it allows every child to be rated by each of his or her peers thus providing an index of each child's overall acceptability in the peer group (Asher & Hymel, 1981; Gresham, 1981; Schofield & Whitley, 1983). As well, with the use of the rating-scale procedure, children's ratings are unaffected by group size (Foster & Ritchey, 1979), a problem inherent in the peer nomination procedure. Rating-scale scores appear to be more sensitive indices of treatment effectiveness than nominations (Oden & Asher, 1977). A final advantage of the rating-scale

procedure is that children are not required to indicate
anyone as particularly disliked (Asher & Dodge, 1986).
The primary disadvantage of the procedure is that rating-
scale scores cannot be used to distinguish between
rejected and neglected children (Asher & Dodge, 1986;
Asher & Hymel, 1981; Dorval & Begin, 1985; Hymel, 1983;
Olson & Lifgren, 1988).

Assessment of social status with preschool children.

A review of the research evaluating the psychometric
properties of sociometric procedures with preschool
children suggests the use of the rating-scale as the
assessment tool of choice. The rating-scale has been
found to provide a more reliable index of preschool
children's sociometric status than the peer nomination
procedure (Asher et al., 1979; Dorval & Begin, 1985;
Olson & Lifgren, 1988). Asher et al. found a test-retest
correlation of .81 for the rating-scale measure over a 4-
week interval. In comparison, they found a correlation of
.56 for positive nominations and .42 for negative
nominations. Similarly, Olson and Lifgren (1988) reported

test-retest coefficients of .52 for positive nominations, .48 for negative nominations, and .81 for the rating-scale procedure over a 3 week interval. Hymel (1983) suggested that the greater instability of nomination scores among preschool children may be due to the fact that younger children's friendships fluctuate more than do those of older children and that nomination scores are more sensitive to this fluctuation since they are based on only a few responses by each child.

Concurrent validity of the rating-scale procedure with preschool children has been demonstrated in terms of correlations with measures of observed behavior and peer interaction (Olson & Lifgren, 1988; Rubin & Clark, 1983; Rubin, Daniels-Beirness, & Hayvren, 1982). Rubin et al. (1982) found consistent positive correlations between peer rejection as determined by sociometric ratings and indices of agonistic behavior. Behavioral observations of rough-and-tumble play and negative peer interchanges were positively correlated with negative sociometric ratings. They also reported that preschool teachers' ratings of aggressive-hostile and hyperactive behaviors on the Preschool Behavior Questionnaire (PBQ) correlated positively with negative ratings. In a similar study,

Rubin and Clark (1983) found rating-scale scores to be modestly correlated with teachers' ratings of maladjustment on the PBQ. Olson and Lifgren (1988) found that rating-scale scores were modestly positively correlated with teachers' ratings of positive peer interaction, and modestly negatively correlated with teachers' ratings of aggression.

Dorval and Begin (1985) reported convergent validity of the rating-scale procedure with preschool children in terms of high correlations with various aspects of group structure. In terms of predictive validity, Olson and Lifgren (1988) found that rating-scale scores were predictive of children's ability to generate relevant solutions to hypothetical social problem situations on the Preschool Interpersonal Problem Solving (PIPS) test at a 1 year follow-up. Ironsmith and Poteat (1990) found that peer ratings obtained in preschool significantly predicted teacher ratings of behavior on the PBQ 1 year later when the children were in kindergarten.

Ethical concerns have been raised about the consequences of administering sociometric procedures to children (Bell-Dolan & Wessler, 1994). Surprisingly, however, few published studies have addressed this issue.

In a study with fifth grade children, Bell-Dolan, Foster and Sikora (1989) found that the administration of positive and negative nomination procedures had no effects on the children's social interactions or on their reports of mood or loneliness. Hayvren and Hymel (1984) evaluated the potential negative impact of using sociometric procedures with preschool children. They found that the administration of neither the positive nomination, negative nomination, or rating-scale sociometric measures had an immediate or a long-term effect on preschool children's peer interactions. Behavioral observations of peer interactions obtained immediately following testing provided no indication that children made negative verbalizations to or about their peers. Although children made more positive and neutral initiations and responses to positive peer nominees and high-rated peers than to negative peer nominees and low-rated peers, they did not differ in the frequency of negative initiations or responses as a result of testing either immediately after or several weeks following completion of testing.

Summary

Sociometric measures have been used extensively in the literature to assess social status, as an alternative to behavioral observation strategies. Although peer nomination and rating-scale procedures have both been used to identify children of low and high status, they appear to measure different dimensions of social status. Rating-scales measure a child's overall acceptability in a peer group and tend to have less potential for bias, compared with the nomination procedure. With regard to psychometric properties, the literature suggests that the rating-scale procedure, as compared with the peer nomination procedure, is a more reliable and valid measure to assess the peer relations among preschool age children.

Social Status and Aggression

In a recent meta-analysis, Newcomb, Bukowski, and Pattee (1993) found that children from different social status groups have distinct behavioral and social-

cognitive profiles that influence the quality of their social relations. Compared with other social status groups, rejected children were found to be more aggressive, less sociable and cognitively skilled. Newcomb et al. (1993) concluded that rejected children are at risk in their social development and that the aggression, withdrawal, and social deficits of these children represent potential antecedents for psychological disturbance.

There has been a wealth of studies examining the behavioral correlates of children's social status (for a review, see Coie, Dodge, & Kupersmidt, 1990). Using differing methodologies, the behavioral correlates of peer acceptance and rejection have been examined across a wide age range. Studies involving preschool children (e.g., Olson, 1992; Olson & Brodfeld, 1991; Rubin & Clark, 1983; Spence, 1987), kindergarten children (e.g., Rubin & Daniels-Beirness, 1983; Rubin et al., 1982; Vitaro, Tremblay, Gagnon, & Boivin, 1992; Wasik, 1987), elementary children (e.g., Chen, Rubin, & Sun, 1992; Dodge, 1983; Dodge, Coie, Pettit, & Price, 1990; Dygdon, Conger, & Keane, 1987; Erhardt & Hinshaw, 1994; Hymel et al., 1990; Taylor, 1989; Vitaro et al., 1992) and

adolescents (Ollendick et al., 1992) are available in the literature. One finding that consistently emerges from these studies is that rejected children are perceived by teachers, peers, and independent observers to be more disruptive, aggressive, inattentive, uncooperative, and socially inappropriate than their more socially accepted peers. In addition, aggression appears to be a more significant factor in the rejection of boys than of girls.

Consistent with research on older children, studies examining the relationship between peer rejection and aggression in preschool children indicate that aggressive and disruptive preschoolers tend to be disliked by their peers (e.g., Hayes, 1978; Ladd & Mars, 1986; Milich, Landau, Kilby, & Whitten, 1982; Olson, 1992; Olson & Brodfeld, 1991; Rubin & Clark, 1983; Rubin et al., 1982; Spence, 1987). Both peer and teacher assessments of externalizing behaviors such as aggression, disruptiveness, and impulsivity have been found to be significantly correlated with peer rejection in preschool children (Olson, 1992; Olson & Brodfeld, 1991; Spence, 1987). Indices of prosocial behavior have been found to be significantly related to likability (Denham & Holt,

1993; Denham, McKinley, Couchoud, & Holt, 1990; Ladd, Price, & Hart, 1988). Friendlier, more cooperative and less aggressive preschool children were found to be liked more.

Although there is strong support to indicate a relationship between peer rejection and aggressive behavior across a wide age range, recent research with both older and younger children suggests that there may be considerable heterogeneity among the group of rejected children (Bierman, Smoot, & Aumiller, 1993; Cillessen, van IJzendoorn, van Lieshout, & Hartup, 1992; French, 1988; Hodges & McCloy, 1989). French (1988) examined the possibility that subtypes exist within a population of peer-rejected 8-10 year old boys in two studies, one using the peer nomination procedure as the method of selection and one using the rating-scale procedure. In both studies, it was found that approximately 50% of the rejected group exhibited an aggressive behavior profile while the remainder of children in this group were rejected for other reasons. Similarly, in a study with a younger population of 5-7 year old boys, Cillessen et al. (1992) found that about 50% of the boys identified as rejected were of the aggressive, impulsive, disruptive,

and noncooperative subtype. Cillessen et al. also
examined the relation between rejection subtype and
sociometric stability and found that 57% of the boys
identified as rejected-aggressive continued to be
rejected by their peers 1 year later as compared with
only 34% of the rejected-nonaggressive boys, suggesting
that peer rejection involving aggression is more stable
than rejection that does not involve aggression. These
studies provide support for heterogeneity among children
identified as rejected and suggest that aggression is a
meaningful dimension on which to distinguish them.

Stability of social status and aggression.

Social status, particularly rejected social status,
appears to be a relatively stable phenomenon. Rejected
status has been found to be stable across time (Bukowski
& Newcomb, 1984; Coie & Dodge, 1983; Howes, 1990; Hymel
et al., 1990; Rubin & Daniels-Beirness, 1983; Taylor,
1989; Vitaro, Gagnon, & Tremblay 1990; Wasik, 1987),
across social situations (Luftig, 1987), and across new
social groups of unfamiliar peers (Coie & Kupersmidt,
1983; Dodge et al., 1990).

The stability of rejected status has been demonstrated with preschool age children (Denham et al., 1990; Olson, 1992; Olson & Brodfeld, 1991). Olson and Brodfeld (1991) found that peer rejection in preschool boys was moderately stable over a 6 month period. Olson (1992) found that preschool boys identified as rejected and aggressive at the beginning of the year tended to remain so at the end of the year. Denham et al. found preschoolers' sociometric ratings, particularly negative ones, to be stable over both a 1 and a 9 month time period.

Aggressive behavior has also been found to be a relatively stable phenomenon across a wide age range. Ladd and Mars (1986) found preschoolers' perceptions of peer aggression and cooperative play to be the most stable of the behaviors assessed. Both peer and teacher measures of aggressive-disruptive behavior were found to be highly stable over the course of the preschool year (Olson, 1992; Olson & Brodfeld, 1991). Cummings, Iannotti, and Zahn-Waxler (1989) found aggressive behavior to be stable from toddler to late preschool age and to be more stable for boys than girls. Rusher, Ware, and Cross (1994) reported stability of disruptive

behavioral characteristics for 2 year old children over a period of 4 weeks.

Summary

The link between peer rejection and aggressive behavior has been well established and both peer rejection and aggressive behavior have been found to be relatively stable in children as young as the preschool age. Given that researchers have recently recognized the heterogeneous nature of rejected children and the fact that aggression may only be characteristic of some children, an increased focus on aggressive-disruptive behaviors as targets for change is likely. As suggested by Bullock et al. (1988), there is a need to not only identify and target for intervention those children who are rejected by their peers, but also to determine the specific behaviors that are associated with difficulties in their peer relations.

Interpersonal Problem-Solving

Research has suggested that interpersonal cognitive problem-solving (ICPS) skills are one subset of socially

competent behavior which is positively correlated with, and predictive of, emotional and behavioral adjustment. Interpersonal problem-solving skills have been found to be associated with social competence in a wide variety of populations and across a wide age-span (for a review, see Tisdelle & St. Lawrence, 1986). In a meta-analysis, Denham and Almeida (1987) found that ICPS measures significantly differentiated between adjusted and nonadjusted children.

Spivack, Shure, and their colleagues have described several ICPS skills as important in the relationship to behavioral adjustment, independent of intelligence (Spivack, Platt, & Shure, 1976; Spivack & Shure, 1974). These skills include problem sensitivity, or the ability to perceive problem situations and to focus on the aspects of interpersonal confrontation that create problems; alternative thinking, or the ability to conceptualize alternative solutions to typical age-relevant interpersonal problems; consequential thinking, or the ability to conceptualize the potential consequences of an interpersonal act; causal thinking, or the ability to relate one event to another over time with regard to the "why" that might have precipitated the act;

and means-end thinking, or the ability to articulate step-by-step means to a problem solution. The significance of the relationship of each skill with behavioral adjustment appears to differ as a function of age and developmental level of a child.

Interpersonal problem-solving skills of preschool children.

Initial work examining the relationship between ICPS skills and behavioral adjustment in preschool children was carried out by Shure, Spivack, and colleagues in several early studies. Shure and Spivack (1970, as cited in Spivack & Shure, 1974) identified a relationship between alternative thinking and both behavioral adjustment as rated by teachers and socioeconomic level. They found that lower-class children as a group and less well-adjusted children within both the lower and middle class groups offered fewer solutions and a narrower range of solutions to problems on the PIPS. Lower class children also produced an increased proportion of forceful solutions.

Shure, Spivack, and Jaeger (1971) examined the relationship between behavioral adjustment and alternative, consequential, and causal thinking in low socioeconomic preschoolers. Children were classified as aberrant or adjusted based on seven items describing inability to delay, emotionality, and aggression factors. The aberrant group consisted of children who acted out and children who were considered inhibited or withdrawn. Results indicated that alternative thinking was the only measure related to behavioral adjustment. Children classified by teachers as less well adjusted offered significantly fewer relevant solutions to peer and authority problems on the PIPS and gave a narrower range of types of solutions than did better adjusted children. Results also indicated that those with lower problem-solving scores gave a higher ratio of forceful solutions (e.g., grab it) to peer problems. These results were found independent of receptive vocabulary as measured by the Peabody Picture Vocabulary Test (PPVT). There were no overall gender differences and no relationship was found between behavioral adjustment and either consequential or causal thinking.

Consistent with the earlier studies, Shure, Newman, and Silver (1973, as cited in Spivack & Shure, 1974) found a relationship between alternative thinking and behavioral adjustment as assessed by the Hahnemann Preschool Behavior Rating (HPSB) Scale. However, they also found a relationship between consequential thinking and behavioral adjustment. Adjusted children provided a greater number of consequences to problems than children rated as either impulsive or inhibited. Results were found independent of language ability, general intelligence, and willingness to talk. There were no gender differences.

The relationship demonstrated by Shure, Spivack and colleagues between ICPS skills and the behavioral adjustment of preschool children was not substantiated by Rickel and Burgio (1982). In the first phase of a project carried out at Wayne State University, Rickel and Burgio attempted to replicate the work of Shure et al. (1971) with low income preschool children. Children were classified as impulsive, inhibited, or adjusted using the HPSB rating scale. In order to replicate Shure et al.'s procedure, inhibited and impulsive children were combined to form one aberrant group. No significant differences

were found between aberrant and adjusted groups on either the PIPS or What Happens Next Game (WHNG) measures of problem-solving ability. However, children rated by teachers as adjusted had significantly higher achievement scores on the Caldwell Preschool Inventory than children rated as aberrant. Observation by independent raters using the Sharp Behavior Identification Checklist indicated that aberrant children engaged in more verbal and physical aggression than did adjusted children. In addition, aberrant males exhibited significantly higher levels of aggression than aberrant females. Gouze (1987) also failed to find a relationship between the number of alternative solutions generated by preschool boys on the PIPS and adaptive behavior in the classroom. Differences in these studies may have been due to the selection of children with more extreme behavioral adjustment problems in the Shure et al. study.

Summary.

Shure, Spivack and their colleagues have demonstrated a relationship between problem-solving skills and adjustment in preschool children. They found

that alternative thinking, or the ability to conceptualize alternative solutions to interpersonal problems, is the problem-solving skill most strongly related to behavioral adjustment in preschool children. Children rated by teachers as poorly adjusted tended to generate fewer, more aggressive solutions to interpersonal problems than their more adjusted peers. The relationship between behavioral adjustment and consequential thinking was found to be less significant. In contrast, Rickel and Burgio (1982) failed to find support for a relationship between problem-solving skills and adjustment in preschool children. The results of a meta-analysis by Denham and Almeida (1987) however, found strong support for the relationship between ICPS skills and behavioral adjustment in children.

Problem-solving intervention with preschool children.

Given the results of studies indicating a significant relationship between problem-solving skills and behavioral adjustment, Shure and Spivack predicted that it should be possible to enhance the behavioral

adjustment of young children by improving those problem-solving skills related to adjustment (Spivack & Shure, 1989). In an early pilot study, Shure, Spivack, and Gordon (1972) examined the effect of problem-solving training on behavioral adjustment with low socioeconomic preschoolers. Training consisted of fifty, 20 minute sessions. Initial sessions involved training of specific linguistic concepts associated with problem-solving while later sessions involved training in problem-solving skills. In addition to the training group, attention control and no treatment groups were also included.

Prior to training there were no significant differences between the three groups on either the PIPS or the PPVT. All children who received training gave a significantly higher number of relevant solutions to both peer and authority problems, a greater number of solution categories, and fewer irrelevant responses than did the two control groups. Within the training group, those children who had the lowest PIPS scores prior to training received the greatest benefit from the program. Although not statistically significant, only the delay of gratification factor on the Devereux Child Behavior Rating Scale showed a positive change as a result of

training. There was no change on the emotionality or
dominance-aggression dimensions. At a 7 week follow-up,
trained children continued to show improvement on delay
of gratification and were also rated as less aggressive.
Trained children who improved most in problem-solving
also improved more behaviorally, particularly those who
were most poorly adjusted initially.

Shure and Spivack (Shure, 1993; Shure & Spivack,
1979, 1980, 1982) examined the impact of problem-solving
training on the behavioral adjustment of 219 low income
preschool and kindergarten children over a 2 year period.
Children received training during the preschool year, the
kindergarten year, both years, or neither year. Format of
the training program was determined by a script developed
by Spivack and Shure (1974) to be used by preschool
teachers for instructing children in problem-solving
skills. The program included dialogues, games, and
activities for the teacher to use with the children in a
series of forty-six, 20 minute sessions. Early sessions
focused on developing the language skills which Spivack
and Shure (1974) believed to be prerequisites for
effective problem-solving and later sessions were
designed to teach alternative, consequential, and causal

thinking skills through a series of real-life problems. Training included dialoging which involved teachers following through with problem-solving training when actual problems arose in the classroom.

Prior to intervention, there were no significant differences between training and control groups on measures of intelligence, problem-solving skills, or behavioral adjustment as assessed by the Hahnemann Preschool Behavior Rating Scale. Results indicated that children trained in either year showed significant improvement in both the ability to conceptualize alternative solutions to problems and the ability to conceptualize consequences of problems. Trained children also showed a decrease in the number of coercive or forceful solutions given and this was most significant for those children classified as impulsive. Children trained in the preschool year also showed an improved tendency to conceptualize cause-and-effect when presented with an interpersonal event. Children who received no training showed some improvement over time on both alternative and consequential thinking.

In both years, those children who showed improvement in behavioral adjustment were also those who improved in

alternative and consequential thinking skills. This relationship was strongest for alternative thinking and the relationship with consequential thinking was stronger for the kindergarten year. At 6 month and 1 year follow-ups, trained children remained ahead of controls on both problem-solving and behavioral measures. Control children showed some improvement on PIPS scores at the 6 month follow-up but did not catch up to trained children.

Attempts to replicate Shure and Spivack's findings with preschool children have met with conflicting results. In the second phase of the project at Wayne State University, Sharp (1981) assessed the impact of the Spivack and Shure (1974) training program with low income preschoolers. However, unlike Shure and Spivack's work, the program trainers were unfamiliar with the children, classroom teachers were unaware of group assignment and of the context of the training program, training did not involve dialoging, and an attention control group rather than a no treatment control group was included. In addition to the regular training program, Sharp also included a modified training group which followed the Spivack and Shure (1974) script with the exclusion of the first 12 sessions on prerequisite language skills.

Analyses at posttest revealed that the aberrant children who received training increased significantly more in PIPS scores compared with both children in the control group and the adjusted children in each of the three conditions. The difference in gains between the complete and modified training groups was not significant. No significant training effects were found for consequential thinking. Improvements in alternative thinking, however, did not mediate improvement in behavioral adjustment. In fact, both adjusted and impulsive groups showed an increase in aggression and dominance from pretest to posttest.

In phase three of the project at Wayne State University, Rickel, Eshelman, and Loigman (1983) conducted a 6 month follow-up of the children who participated in the Sharp (1981) study. Although aberrant children who were trained gained significantly in their ability to generate alternative solutions from pretest to posttest, there was no significant change from posttest to follow-up. In fact, all groups showed significant improvement from pretest to follow-up on the PIPS and WHNG measures and in achievement. No relationship was found between problem-solving measures and behavioral

adjustment at follow-up. However, there was a decrease in aggression from posttest to follow-up in both the control groups and the treated adjusted group.

Feis and Simons (1985) replicated the training program of Spivack and Shure (1974) with low income preschool children over a 3 year period. Children were randomly assigned to either training or control groups. There were no significant differences between the groups at pretest in the number of solutions generated or the number of solution categories on the PIPS. In all 3 years of the study, trained children showed a significant improvement in the number of solutions and number of solution categories on the PIPS from pretest to posttest as compared with the control group. In the third year, trained children also showed significantly fewer behavioral problems on the Preschool Behavior Questionnaire at posttest compared with the control group. Specifically, training was found to have a significant moderating effect on children's anxious-fearful and hyperactive-distractible behaviors but not on aggressive behavior.

Ridley and Vaughn (Ridley & Vaughn, 1982; Vaughn & Ridley, 1983; Vaughn, Ridley, & Bullock, 1984) have

evaluated the effectiveness of problem-solving training with middle class preschool children. Ridley and Vaughn (1982) evaluated a program that included training in problem-solving skills and the utilization of an empathic communication mode. Training consisted of forty, 15-20 minute sessions and classroom teachers were unaware of the content of the training program. The components of the program were also used to solve problems that occurred during training (e.g. a child wanting to sit on another child's mat).

Relative to the control group, Ridley and Vaughn (1982) found that the training group showed a significant increase in the number of solutions generated to peer problems on the PIPS at posttest and at a 3 month follow-up. While there were no significant differences between the groups in the number of solutions given to mother-related problems on the PIPS at posttesting, there were significant differences at follow-up, suggesting generalization of the program effects from problem-solving with peers to that with an adult. No significant differences were found between the groups on the relevancy ratio at either posttest or follow-up. The Behavioral Preschool Interpersonal Problem Solving

(BPIPS) test, a modified version of the PIPS, was administered to assess the children's ability to generate alternatives to interpersonal problems with a peer in simulated real-life situations. A significant difference was found between the two groups on both the number of solutions given to peer problems and the relevancy ratio at both posttesting and follow-up.

Vaughn and Ridley (1983) evaluated the effects of training on the behavior of preschool children in the classroom setting. The training program involved 50 sessions and was based on the same concepts as the Ridley and Vaughn (1982) program. Results indicated that the training group, compared with an attention control group showed a significant increase in the frequency of both positive verbal interaction with peers from pretest to posttest. The increase in positive verbal interactions reflected an increase in such positive verbalizations as praise, positive regard of another, and engaging others in activity while the increase in nonverbal interactions reflected an increase in behaviors such as cooperative play, sharing, and helping. Vaughn and Ridley (1983) suggested that skills taught in training generalized to

the child's interactions with other children. There were no significant effects on interactions with adults.

In a final study, Vaughn, Ridley, and Bullock (1984) evaluated the effects of training on the problem-solving skills of aggressive preschool children. Of 165 children screened using the Hahnemann Preschool Behavior Rating Scale, 24 children (19 males, 5 females) were identified as aggressive and randomly assigned to either a training group that utilized the Ridley and Vaughn (1982) program or an attention control group. Results indicated that the training group showed a significant increase in the number of relevant solutions to peer problems and relevancy ratio as measured by the BPIPS at both posttest and a 3 month follow-up. Unfortunately, Vaughn et al. (1984) did not evaluate the effects of training on the aggressive behavior of the children in the preschool setting.

Denham and Almeida (1987) examined the effects of training on ICPS skills in a meta-analysis and found that trained children exhibited significantly higher scores on measures assessing ICPS skills at posttest compared with control children. A link was found between gains in ICPS skills and improvements in adjustment, and this

relationship appeared to be stronger for younger children. They found that programs that included dialoguing obtained higher posttest scores on ICPS measures. Denham and Almeida (1987) recommended that ICPS training studies need to include groups of children that are at risk or deviant in their behavior such as aggressive children and that sociometric measures be used to evaluate the effects of training.

In recent meta-analyses, both Schneider (1992) and Beelmann, Pfingsten, and Losel (1994) reported moderate effectiveness of training. Although not statistically significant, Schneider (1992) found stronger treatment effects for younger children. Beelmann et al. (1994) reported a trend in the literature towards complex, multimodal training programs but indicated that monomodal programs appear to be more effective with preschool-age children while multimodal programs appear more effective with older children. They recommended the need for future social competence programs to fit the specific social deficits of the children and bring about not only narrowly defined, short-term modification but also more comprehensive, long-term follow-up effects. Schneider (1992) also recommended follow-up of a longer duration.

Summary.

The effectiveness of programs designed to teach problem-solving skills to preschool children and to enhance their behavioral adjustment have met with conflicting results. Shure and Spivack have found that preschool children can be taught to generate alternative solutions and consequences to interpersonal problems and that gains, particularly in alternative thinking, were associated with improvement in behavioral adjustment. Sharp (1981) found that preschool children can be taught to generate alternative solutions to problem situations but failed to find support for a relationship between gains in problem-solving skills and improvement in behavioral adjustment. Although Ridley and Vaughn have demonstrated improvements in the problem-solving skills of preschool children as a result of training, they have provided little information on the effects of training on the behavior of the children.

Following meta-analyses, both Schneider (1992) and Beelmann et al. (1994) reported moderate effectiveness of training programs. Denham and Almeida (1987) found that children who received training showed significant gains

in ICPS skills. They also provided support for the relationship between gains in ICPS skills and improvements in behavior, and indicated that the relationship appeared stronger for younger children. Although not statistically significant, Schneider (1992) also found stronger treatment effects for younger children.

The Present Study

The present study was designed to address the needs of preschool children identified as having low acceptance among their peers and perceived by teachers as aggressive. This stems from research suggesting that children with poor peer relations are more likely to develop later adjustment problems and therefore, should be considered a group of children who are at risk and consequently in need of intervention. In addition to the rating-scale which appears to be the most reliable and valid measure of assessing peer status in preschool children, a measure of aggressive behavior was also included in the present study. This enabled a distinction between those children with low peer acceptance who were

aggressive and those children with low peer acceptance who were not aggressive.

Given that early identification and intervention is essential for the prevention of potential problems, the relatively high stability of poor peer relations, the fact that it becomes increasingly difficult to modify the social reputation of children as they get older and that behavioral repertoires may be more amenable to intervention at an earlier point in development (Rogosch & Newcomb, 1989), preschool children were selected as the target population. Providing intervention for preschool children identified to be at risk in their peer relations may reduce the potential for adjustment difficulties later in life.

The present intervention focused on training the selected population in interpersonal problem-solving skills. Since the work by Shure and Spivack demonstrating a relationship between improvement in behavioral adjustment and gains in problem-solving skills, interventions have met with conflicting results. The present study was a further attempt to define the relationship between ICPS skills and behavioral adjustment. Training sessions were based on the script

developed by Spivack and Shure (1974). However, in order to reduce the significant length of the Spivack and Shure (1974) program, children received only 13 training sessions. In contrast to the Spivack and Shure (1974) training program which involved the presentation of both peer and adult problems during training, only peer problems were utilized in this study, as peer relations were the primary focus of attention. As well, in order to foster generalization, relevant, as opposed to hypothetical, social situations were targeted during training. This was accomplished by requesting the directors from each of the participating preschools to describe those situations which they found most problematic among the children in their preschool. From this a set of common problems was selected.

In contrast to work by Shure and Spivack who tended to define adjustment broadly, often combining inhibited and impulsive children into an aberrant group, the present study utilized specific criteria for inclusion into the adjustment groups. As well the present study included an attention control group to determine whether there was any improvement in problem-solving skills as a result of normal maturational processes. The absence of

an attention control group in the work by Shure and Spivack, particularly given the length of their training program, makes it difficult to rule out alternative explanations of change. Finally, preschool teachers who completed the behavioral ratings in the present study were blind to the treatment status of the children.

In order to conduct the intervention in ways that did not stigmatize children with low peer acceptance, a group of adjusted children was also selected to participate in the study. The inclusion of a normative standard provided an obtainable target range for improvement. The present program also served as a preventive measure for children with higher peer acceptance by further building and reinforcing healthy behavior and thus reducing the risk of future difficulties (Rickel & Burgio, 1982).

The following hypotheses were made in the present study:

1. It was hypothesized that prior to training the rejected group would have significantly lower scores on both the PIPS and WHNG measures of problem-solving ability than would the average group.

2. It was hypothesized that the treatment group, relative to the attention control group, would show significant improvements in problem-solving skills as reflected by an increase in the number of solutions given to peer problems on the PIPS and number of consequences given to peer problems on the WHNG. It was predicted that improvement would be significantly greater for the rejected treatment group than the average treatment group. No increase in solutions to mother problems was expected. No significant improvements were expected for the attention control group.

3. It was hypothesized that the treatment group, relative to the attention control group would show a significant improvement in overall behavior and a significant decrease in aggressive behavior as reflected by their ratings on the Preschool Behavior Questionnaire. It was expected that the improvement would be significantly greater for the rejected treatment group as opposed to the average treatment group. No significant changes were expected for the attention control group.

4. Finally, it was hypothesized that the treatment group, as compared with the attention control group, would show a significant improvement in peer acceptance

as reflected by their scores on the rating scale. It was expected that the improvement would be significantly greater for the rejected treatment group compared with the average treatment group. No significant changes in peer acceptance were expected for the attention control group.

Method

Participants

Participants were selected from five preschools in an urban area in eastern Newfoundland (population 130,000). All of the participants were Caucasian and they represented a wide range of socioeconomic backgrounds. Letters describing the study and asking for parental consent for the child to participate were distributed to all parents of children between the ages of 4 and 5 within each of the preschools (see Appendix A). Of 71 consent forms distributed, permission to participate was received for all but two children.

Following assessment, children were assigned to a group designated as rejected based on the following criteria:

1. The children were below the average peer-rating score obtained for their respective school.

2. The children's receptive vocabulary was within average limits (standard score of 85 or above on the PPVT-R).

3. The children obtained a total scale score above the ninetieth percentile (a score of 17 or above) on the Preschool Behavior Questionnaire.

4. The children obtained a score above the ninetieth percentile (a score of seven or above) on the Hostile-Aggressive subscale of the Preschool Behavior Questionnaire.

Children were assigned to a group designated as average based on the following criteria:

1. The children were above the average peer-rating score obtained for their respective preschool.

2. The children's receptive vocabulary was within average limits (standard score of 85 or above on the PPVT-R).

3. The children obtained a total scale score below the sixty-fifth percentile (a score of nine or below) on the Preschool Behavior Questionnaire.

4. The children obtained scores below the sixty-fifth percentile (a score of three or below) on each of the three subscales of the Preschool Behavior Questionnaire.

Based on the above criteria, 34 children were selected to participate in this study. Sixteen or 23% met the inclusion criteria of the rejected group (5 females and 11 males) and 18 or 25% met the inclusion criteria of the average group (10 females and 8 males). All participants were between the ages of 49 and 59 months with a mean age of 53.44 months. The mean age of the rejected group was 54.06 months while the mean age of the average group was 52.89 months. The mean receptive vocabulary score of the rejected group was 102.25 and 107.11 for the average group.

Participants meeting the inclusion criteria for the rejected and average groups were then randomly assigned to either treatment or attention control conditions so that there were eight rejected and nine average children in each condition. For the purposes of administering the program, four treatment and four attention control groups were then formed. These groups consisted of between three to five children depending on the number of rejected and

average children that were identified within each preschool. There were three groups of five, four groups of four, and one group of three children.

Measures

Participants were evaluated on the following measures:

1. The Peabody Picture Vocabulary Test-Revised (PPVT-R) was administered to ensure that for both normative and comparison purposes all children were of average ability on a measure of receptive vocabulary.

2. Sociometric acceptance was assessed by administering the rating-scale procedure described by Asher et al. (1979). Each child was individually presented with colour photographs of each of his/her classmates. The children were asked to name each child and then assign each picture to one of three boxes on which were drawn either a happy face (children you like), a neutral face (children you like sometimes), or a sad face (children you don't like). If a child was unable to name a child in a picture they were not asked to rate that particular child. Positive ratings were accorded a score of three, neutral ratings a score of two, and

negative ratings a score of one. Each child's total score
was divided by the number of children in each preschool
who rated that child in order to obtain an average peer
rating since the number of children participating in each
preschool differed. This scale has been shown to
demonstrate both acceptable reliability (Asher et al.,
1979; Boivin & Begin, 1986; Dorval & Begin, 1985) and
validity (Rubin, Daniels-Beirness & Hayvren, 1982) with
preschool children.

3. The Preschool Behavior Questionnaire (PBQ) was
developed by Behar and Stringfield (1974a) and represents
a modification of the Children's Behavior Questionnaire
(Rutter, 1967), developed for use with elementary school-
aged children. The PBQ is a 30 item rating-scale using a
3-point scaling system, for use by preschool teachers to
rate children, ages 3-6, in the context of a peer group.
It yields a total score reflecting overall level of
adjustment and three subscale scores labelled (a)
Hostile-Aggressive, (b) Anxious-Fearful, and (c)
Hyperactive-Distractible obtained by adding raw scores
for selected items. For a description of test
administration and scoring, see Behar and Stringfield
(1974b).

Behar and Stringfield (1974a) and Behar (1977) reported interrater and test-retest reliabilities of the PBQ based on ratings provided by preschool teachers and teacher aides. A mean interrater reliability coefficient of .84 was obtained for the total scale, with means of .81, .71, and .67 reported for the Hostile-Aggressive, Anxious-Fearful, and Hyperactive-Distractible subscales, respectively. A mean test-retest reliability coefficient of .87 was reported for the total score with means of .93, .60, and .94 for the three subscales after a 3-4 month interval. Behar and Stringfield (1974a) and Behar (1977) have also reported data on the criterion-related validity of the measure. The total score and each of the three subscales have been shown to discriminate significantly between groups of normal and deviant preschool children. The mean total score for the normal population was 8.007 compared with a mean of 21.324 for the deviant population. Hoge, Meginbir, Khan, and Weatherall (1985) found evidence for the construct validity of the PBQ as well as strong support for the convergent and discriminant validity of the Hostile-Aggressive and Anxious-Fearful subscales. Rubin and Clark

(1983) also provided support for the construct validity of the PBQ.

4. Cognitive Measures of Problem-Solving.

(a) The Preschool Interpersonal Problem-Solving Test (PIPS) measures a preschool child's ability to think of alternative solutions to two life-related types of problems: (a) ways for one child to obtain a toy that another child is playing with, and (b) ways for a child to avert his/her mother's anger as a result of damage to property. Shure and Spivack (1974a) established a test-retest reliability of .73. Validity is claimed for the PIPS on the basis that the measure consistently discriminates between groups of children who differ in level of behavioral adjustment exhibited in the classroom. The script used for the PIPS in this study is presented in Appendix B.

In the peer-type problem, the subject was shown three pictures, two of an age-relevant child (presented on 12.5 cm x 20.5 cm cards) and one of a toy (presented on 7.5 cm x 12.5 cm card). Characters presented were of the same sex as the child being tested. After a series of memory cues to identify the characters, the child was asked what one child could do to get to play with the toy

that the other child has. Memory cues were given to
ensure that the child understood the story being
presented. The examiner judged the point at which memory
cues were no longer needed.

In an effort to elicit as many different solutions
as possible from each child, the experimenter repeated
the same story plot, but substituted pictures of new
characters and a new toy. The child was presented with a
minimum of seven similar peer-toy situations, but if
seven different, relevant solutions were given, the
experimenter continued with additional situations until
the child no longer offered new ideas. In order to
encourage a different solution, any response not offering
a new relevant solution was probed. A maximum of three
probes were made for each story.

In the adult-type problem, the subject was presented
with three pictures, one of a mother (presented on 12.5
cm x 20.5 cm card), one of a child (presented on 12.5 cm
x 20.5 cm card), and one of an object that was broken
(presented on 7.5 cm x 12.5 cm card), and was asked what
the child in the story could do to avoid his/her mother's
anger. Characters presented were of the same sex as the
child being tested. New characters and a new object were

presented until a minimum of five stories were completed. If five different, relevant responses were given, the experimenter continued with additional objects until the child no longer offered new ideas. Three probes were made for each problem. Pictures of broken objects were not presented to avoid visual stimuli that might suggest possible solutions (e.g., put it back together).

The number of solutions given by a child to part 1 (peer problems) and part 2 (mother problems) are determined and then combined into a total PIPS score. Scores for the peer and mother problems have been found to be significantly correlated (Shure, Spivack & Jaeger, 1971). For a description of test administration and scoring, see Shure and Spivack (1974a).

(b) The What Happens Next? Game (WHNG) measures a child's ability to think of the consequences to peer and adult problems. Each story ends with a child grabbing a toy away from another child or having done something without asking permission from an adult. The child is asked "What might happen next in the story?" The script used for the WHNG in this study is presented in Appendix C.

In the peer problems, the subject was presented with three pictures, two of an age-relevant child (presented on 12.5 cm x 20.5 cm cards) and one of a toy (presented on 7.5 cm x 12.5 cm card). In the adult problems, the subject was presented with three pictures, one of a mother (presented on 12.5 cm x 20.5 cm card), one of a child (presented on 12.5 cm x 20.5 cm card), and one of an item belonging to the mother (presented on 7.5 cm x 12.5 cm card). There are a minimum of five basic peer stories and five basic stories involving an adult. If five different, relevant consequences were given, the experimenter continued until the child no longer offered new ideas. The same probing procedure is used as with the PIPS. A child's scores on part 1 (peer problems) and part 2 (adult problems) are then combined into a total WHNG score. For a description of test administration and scoring, see Shure and Spivack (1974b).

Procedure

Pretreatment assessment.

All preschools were visited several times before pretesting to promote a degree of familiarity with the

children. All children in each preschool for whom
parental consent to participate had been obtained were
administered the rating-scale measure of social status
and the PPVT-R. As well, the PBQ was completed for all
children by the preschool teacher most familiar with each
child. Using the information obtained from these
measures, the rejected and average groups were selected
according to the previously stated criteria. The selected
children were then administered the PIPS and WHNG
measures of problem-solving ability. All tests were
administered individually to each child by the examiner
in separate sessions.

Treatment.

Participants in the treatment group received
thirteen, 20 minute training sessions (see Appendix D).
All sessions were based on the script developed by
Spivack and Shure (1974). The initial three sessions
focused on developing specific language concepts to be
utilized during the remaining training sessions. Sessions
four to eight involved training in alternative thinking
skills and were designed to encourage the children to
think of different ways to solve real-life interpersonal

problems. Sessions 9-13 involved training in consequential thinking skills and were designed to encourage the children to think of the consequences of interpersonal acts. During each training session, a different problem was presented and a poster displaying each problem was used to aid the participants in understanding the situation and to maintain interest. For each training session, all ideas suggested by the children were recorded on a sheet of brisol board for the children to see.

Participants in the attention control group took part in various activities for 13 sessions (see Appendix E). These activities did not involve problem-solving skills but were designed to stimulate mutual adult-child interaction similar to the training sessions. All sessions were 20 minutes in length in order to equate the amount of attention the group received with that of the treatment group.

Each of the treatment and attention control sessions were conducted on a separate day. For each respective session, the groups were removed from the regular preschool classroom and taken to a nearby room to be as free of distractions as possible. For treatment sessions,

children sat on chairs in a semicircle while for
attention control sessions the children sat around a
table. When problems arose during the sessions, they were
handled by removing the child from the group until the
behavior ceased. Preschool teachers were blind to group
assignment as well as to the content of the treatment and
attention control sessions.

Posttreatment and follow-up assessment.

Following the completion of training and at a 4 week
follow-up, each subject was re-administered the rating-
scale, and the PIPS and WHNG measures of problem-solving
ability. Those teachers who completed the PBQ for each
child at pretest were asked to complete the questionnaire
at both posttest and follow-up.

Results

Pretreatment Analyses

Preliminary analyses were carried out to establish
equivalence of the rejected and average groups with
respect to age and receptive vocabulary, and to determine
pretreatment differences between the groups on the
dependent measures of Social Status, Preschool Behavior
Questionnaire (total), and Factor 1 (aggression) of the

Preschool Behavior Questionnaire. A one-way multivariate analysis of variance with group as the independent variable was applied to the pretreatment measures. Results revealed a significant group effect (Wilks = .06, approximate $F(15, 72) = 8.18$, $p<.01$). Univariate analyses of variance carried out to determine the source of the effect revealed significant between group effects for Social Status, $F(3, 30) = 21.84$, $p<.01$; PBQ (total), $F(3, 30) = 58.98$, $p<.01$; and Factor 1 (aggression), $F(3, 30) = 41.34$, $p<.01$. These analyses are summarized in Table 1.

As expected based on the selection criteria, the rejected group received significantly lower social status ratings and were perceived by preschool teachers as less well adjusted overall and as being more aggressive than children in the average group. Post hoc analyses using Scheffee tests revealed no significant differences on any of the three dependent measures between rejected treatment and rejected attention control groups or between average treatment and average attention control groups. Age and receptive vocabulary did not significantly discriminate the rejected and average groups. Means and standard deviations for the pretreatment measures are presented in Table 2.

Table 1

Summary of Analyses of Variance on Age, Receptive
Vocabulary, Social Status, PBQ (Total), and Factor 1
(Aggression) at Pretreatment

Source	SS	DF	MS	F
Age	75.73	3	25.24	2.84
Error	266.65	30	8.89	
Receptive Vocabulary	339.30	3	113.10	.82
Error	4141.64	30	138.05	
Social Status	2.28	3	.76	21.84*
Error	1.05	30	.03	
PBQ (Total)	3376.08	3	1125.36	58.98*
Error	572.39	30	19.08	
Factor 1 (Aggression)	861.21	3	287.07	41.34*
Error	208.32	30	6.94	

*p < .01.

Table 2

Means and Standard Deviations on Pretreatment Measures

for Treatment and Attention Control Groups

Group		Treatment		Attention Control	
		Rejected	Average	Rejected	Average
Age	M	55.00	54.56	53.13	51.22
	SD	3.12	3.50	3.14	1.99
Receptive Vocabulary	M	102.13	109.89	102.38	104.33
	SD	15.94	10.20	7.07	12.15
Social Status	M	1.83	2.49	1.73	2.33
	SD	0.27	0.15	0.20	0.18
PBQ (Total)	M	20.50	2.33	25.25	4.11
	SD	5.37	2.87	5.90	2.76
Factor 1 (Aggression)	M	8.63	0.56	12.00	0.44
	SD	3.02	1.01	4.34	0.73

Treatment and Follow-up Analyses

A 2 x 2 x 3 (Group x Treatment x Trial) multivariate analysis of variance with repeated measures was used to examine the effects of training on the five independent measures of Social Status, PBQ (total), Factor 1 (aggression), and the Preschool Interpersonal Problem -Solving Test and What Happens Next? Game measures of -problem-solving ability. Using Wilk's criterion, the Manova yielded significant main effects for Group, $F(5, 21) = 26.31$, $p<.01$; Treatment, $F(5, 21) = 17.44$, $p<.01$; and Trial, $F(10, 16) = 10.89$, $p<.01$. The two-way interactions for Group x Trial, $F(10, 16) = 5.03$, $p<.01$, and Treatment x Trial, $F(10, 16) = 8.72$, $p<.01$ were significant. The two-way interaction for Group x Treatment and the three-way interaction for Group x Treatment x Trial were nonsignificant ($p>.05$). Significant multivariate effects were followed by univariate analyses. These analyses are summarized in Tables 3 to 11.

Table 3

Summary of Analysis of Variance on Social Status Over

Time

Source	SS	DF	MS	F
Group	5.48	1	5.48	44.65*
Treatment	.01	1	.01	.08
Group x Treatment	.13	1	.13	1.06
Error	3.07	25	.12	
Trial	.002	2	.001	1.00
Group x Trial	.0022	2	.0011	1.10
Treatment x Trial	.0048	2	.0024	2.39
Group x Treatment x Trial	.005	2	.0025	2.50
Error	.05	50	.001	

*$p < .01$.

Table 4

Summary of Analysis of Variance on PBQ (Total) Over Time

Source	SS	DF	MS	F
Group	5281.35	1	5281.35	62.12**
Treatment	744.26	1	744.26	8.75**
Group x Treatment	3.76	1	3.76	.04
Error	2125.35	25	85.01	
Trial	34.49	2	17.24	1.07
Group x Trial	138.30	2	69.15	4.29*
Treatment x Trial	94.24	2	47.12	2.92
Group x Treatment x Trial	11.11	2	5.56	.34
Error	805.64	50	16.11	

*p < .05   **p < .01.

Table 5

Summary of Analysis of Variance on Factor 1 (Aggression)

Over Time

Source	SS	DF	MS	F
Group	1345.50	1	1345.50	73.35**
Treatment	181.95	1	181.95	9.92**
Group x Treatment	36.33	1	36.33	1.98
Error	458.56	25	18.34	
Trial	4.11	2	2.06	.56
Group x Trial	37.80	2	18.90	5.17**
Treatment x Trial	27.86	2	13.93	3.81*
Group x Treatment x Trial	5.26	2	2.63	.72
Error	182.85	50	3.66	

*$p < .05$. **$p < .01$.

Table 6

Summary   of   Analysis   of   Variance   on   Preschool
Interpersonal Problem-Solving Test Over Time

Source	SS	DF	MS	F
Group	46.74	1	46.74	32.88*
Treatment	73.97	1	73.97	52.04*
Group x Treatment	3.41	1	3.41	2.40
Error	35.54	25	1.42	
Trial	21.30	2	10.65	35.27*
Group x Trial	.64	2	.32	1.06
Treatment x Trial	18.47	2	9.23	30.59*
Group x Treatment x Trial	.75	2	.37	1.23
Error	15.10	50	.30	

*p < .01.

Table 7

Summary   of   Analysis   of   Variance   on   Preschool
Interpersonal Problem-Solving Test (Part 1) Over Time

Source	SS	DF	MS	F
Group	14.68	1	14.68	18.00*
Treatment	33.83	1	33.83	41.47*
Group x Treatment	.98	1	.98	1.21
Error	20.39	25	.82	
Trial	15.39	2	7.69	27.29*
Group x Trial	.59	2	.30	1.05
Treatment x Trial	12.15	2	6.07	21.54*
Group x Treatment x Trial	.39	2	.19	.68
Error	14.10	50	.28	

*p < .01.

Table 8

Summary   of   Analysis   of   Variance   on   Preschool
Interpersonal Problem-Solving Test (Part 2) Over Time

Source	SS	DF	MS	F
Group	9.03	1	9.03	14.00*
Treatment	7.75	1	7.75	12.02*
Group x Treatment	.73	1	.73	1.13
Error	16.12	25	.64	
Trial	.68	2	.34	2.10
Group x Trial	.04	2	.02	.11
Treatment x Trial	.93	2	.47	2.87
Group x Treatment x Trial	.21	2	.11	.66
Error	8.10	50	.16	

*$\underline{p}$ < .01.

Table 9

Summary of Analysis of Variance on What Happens Next?
Game Over Time

Source	SS	DF	MS	F
Group	23.90	1	23.90	19.10*
Treatment	44.75	1	44.75	35.77*
Group x Treatment	.02	1	.02	.01
Error	31.28	25	1.25	
Trial	14.64	2	7.32	28.57*
Group x Trial	5.90	2	2.95	11.52*
Treatment x Trial	19.65	2	9.82	38.35
Group x Treatment x Trial	.41	2	.20	.80
Error	12.81	50	.26	

*p < .01.

Table 10

Summary of Analysis of Variance on What Happens Next?
Game (Part 1) Over Time

Source	SS	DF	MS	F
Group	5.43	1	5.43	9.41*
Treatment	19.57	1	19.57	33.96*
Group x Treatment	.04	1	.04	.07
Error	14.41	25	.58	
Trial	8.15	2	4.07	18.94*
Group x Trial	3.43	2	1.72	7.98*
Treatment x Trial	14.43	2	7.22	33.57*
Group x Treatment x Trial	.17	2	.08	.39
Error	10.75	50	.22	

*$p < .01$.

Table 11

Summary of Analysis of Variance on What Happens Next?

Game (Part 2) Over Time

Source	SS	DF	MS	F
Group	6.55	1	6.55	16.61*
Treatment	5.13	1	5.13	13.01*
Group x Treatment	.01	1	.01	.02
Error	9.86	25	.39	
Trial	.56	2	.28	2.55
Group x Trial	.58	2	.29	2.64
Treatment x Trial	.70	2	.35	3.18
Group x Treatment x Trial	.06	2	.03	.26
Error	5.53	50	.11	

*p < .01.

Assessment of social status.

Univariate analysis of Social Status revealed a significant main effect for Group, $F(1, 25) = 44.65$, $p<.01$. No other significant main or interaction effects were obtained. The rejected group received significantly lower social status ratings than did the average group.

Assessment of behavioral adjustment.

Analysis of PBQ (total) scores found significant main effects for Group, $F(1, 25) = 62.12$, $p<.01$; Treatment, $F(1, 25) = 8.75$, $p<.01$; and a significant Group x Trial interaction, $F(2, 50) = 4.29$, $p<.05$. Children in the rejected group were rated as less well adjusted than children in the average group while children in the treatment group were rated as better adjusted than children in the attention control group.

An examination of Figure 1 indicates that the rejected group showed an improvement in behavioral adjustment across trials as reflected by a decrease in PBQ (total) scores, whereas the average group increased slightly. Post hoc analyses using Tukey's Test indicated that PBQ (total) scores for the rejected group were significantly decreased at follow-up compared with
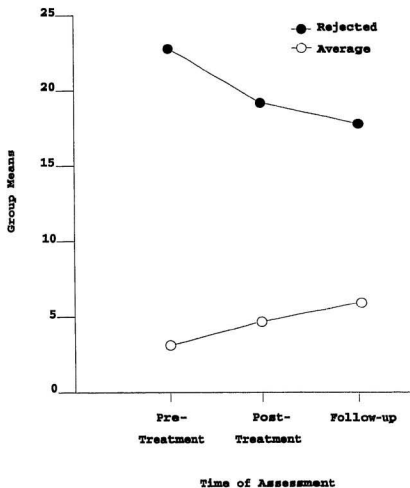
Figure 1. Group means over time on the preschool behavior questionnaire (total)

pretest (p<.01). There was no significant difference between pretest and posttest or between posttest and follow-up. For the average group, PBQ (total) scores did not differ significantly across assessment periods.

Analysis of Factor 1 (aggression) revealed significant main effects for Group, $F(1, 25) = 73.35$, p<.01 and Treatment, $F(1, 25) = 9.92$, p<.01. Significant interactions were found for Group x Trial, $F(2, 50) = 5.17$, p<.05, and Treatment x Trial $F(2, 50) = 3.81$, p<.05. Children in the rejected group were rated as more aggressive than children in the average group. Overall, children in the treatment group were rated as less aggressive than children in the attention control group.

An examination of Figure 2 indicates that the rejected group showed a decrease in aggressive behavior across assessment periods, whereas the average group showed a slight increase. For the rejected group, the mean level of aggressive behavior was significantly lower at follow-up (p<.01) than at pretest. The differences between pretest and posttest and posttest and follow-up means were nonsignificant. Comparisons for the average group revealed no significant differences across trials.
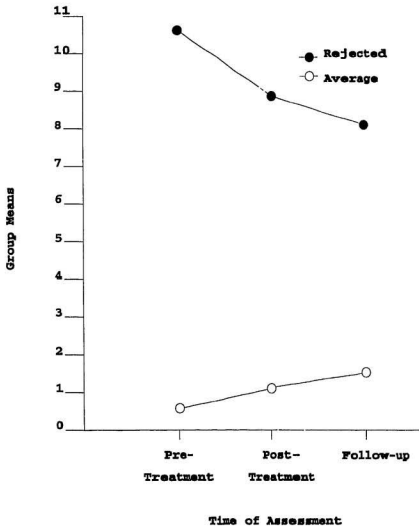
Figure 2. Group means over time on factor 1 (aggression) of the preschool behavior questionnaire

An examination of Figure 3 indicates that the treatment group showed a decrease in aggressive behavior, while the attention control group increased slightly. Analysis using Tukey's Test indicated that the mean level of aggressive behavior for the treatment group was significantly lower at follow-up ($p<.01$), relative to pretest. The differences between pretest and posttest and posttest and follow-up were nonsignificant. There were no significant differences across trials for the attention control group.

Assessment of problem-solving skills.

With respect to the PIPS measure of problem-solving ability, there were significant main effects for Group, $F_{(1, 25)} = 32.88$, $p<.01$; Treatment, $F_{(1, 25)} = 52.04$, $p<.01$; Trial, $F_{(2, 50)} = 35.27$, $p<.01$, and a significant interaction for Treatment x Trial, $F_{(2, 50)} = 30.59$, $p<.01$. The rejected group gave significantly fewer relevant alternative solutions to problems on the PIPS than did the average group. Overall, the treatment group gave a significantly greater number of relevant solutions to problems compared with the attention control group. All participants showed improvement over trials in the
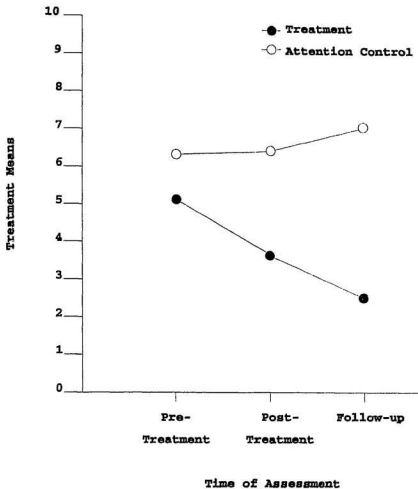
Figure 3. Treatment means over time on factor 1
(aggression) of the preschool behavior questionnaire

number of solutions given to peer problems. This effect was confirmed in post hoc analyses between pretest to posttest and from posttest to follow-up ($p<.01$). There was a significant decrease from posttest to follow-up ($p<.01$).

As can be seen in Figure 4, the treatment group showed an increase in solutions to problems on the PIPS and then declined, whereas the attention control group remained relatively unchanged. Post hoc analyses indicated that means for the treatment group were significantly higher at posttest and follow-up as compared with pretest ($p<.01$). The difference between posttest and follow-up was also significant ($p<.01$) in that PIPS scores decreased. There were no significant differences across trials for the attention control group.

Analysis of part 1 (peer problems) of the PIPS found significant main effects for Group, $F_{(1, 25)} = 18.00$, $p<.01$; Treatment $F_{(1, 25)} = 41.47$, $p<.01$; Trial $F_{(2, 50)} = 27.29$, $p<.01$; and a significant Treatment x Trial interaction, $F_{(2, 50)} = 21.54$, $p<.01$. The rejected group gave fewer relevant alternative solutions to peer problems than did the average group while the treatment
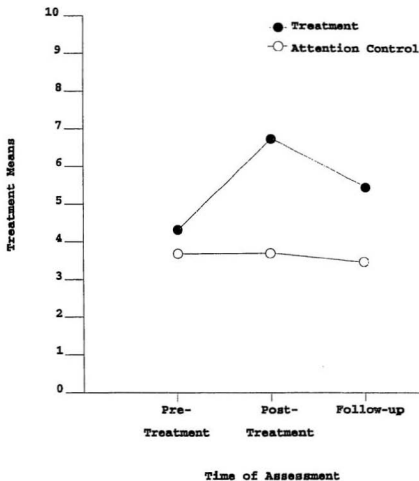
Figure 4. Treatment means over time on the preschool interpersonal problem-solving test (total)

group, relative to the attention control group, gave significantly more relevant solutions to peer problems. A significant trial effect suggests improvement for all participants over time. Post hoc analyses indicated a significant increase at both posttest and follow-up as compared with pretest (p<.01). There was a significant decrease from posttest to follow-up (p<.01).

Examination of Figure 5 indicates that the treatment group, relative to the attention control group, showed a significant increase in solutions to peer problems whereas the attention control group remained relatively stable. Post hoc analyses revealed a significant increase in scores on part 1 (peer problems) at posttest and follow-up for the treatment group compared with pretest (p<.01). There was a significant decrease in scores between posttest and follow-up (p<.01). No significant changes were found across trials for the attention control group.

Analyses of part 2 (adult problems) of the PIPS revealed significant main effects for Group, F(1, 25) = 14.00, p<.01, and Treatment, F(1, 25) = 12.02, p<.01. No significant interactions were found. The rejected group gave significantly fewer solutions to adult problems than
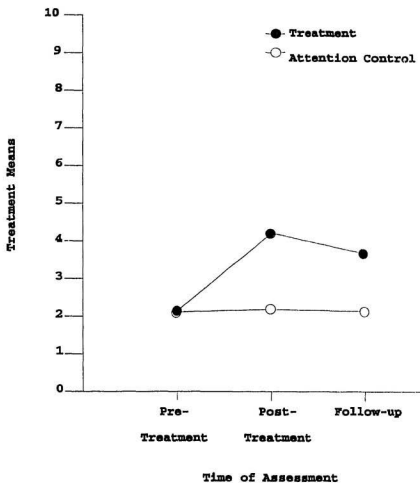
Figure 5. Treatment means over time on part 1 (peer problems) of the preschool interpersonal problem-solving test

did the average group. In comparison, the treatment group
gave significantly more solutions to adult problems than
did the attention control group.

With respect to the WHNG measure of problem-solving
ability, analysis revealed significant main effects for
Group, $F(1, 25) = 19.10$, $p < .01$; Treatment $F(1, 25) = 35.77$, $p < .01$; and Trial, $F(2, 50) = 28.57$, $p < .01$. There
were significant interactions for Group x Trial, $F(2, 50) = 11.52$, $p < .01$, and Treatment x Trial, $F(2, 50) = 38.35$,
$p < .01$. The rejected group suggested significantly fewer
consequences to problems on the WHNG than did the average
group whereas the treatment group suggested significantly
more consequences than the attention control group. All
children showed improvement over time. Post hoc analyses
revealed significant increases between pretest and
posttest ($p < .01$) and between pretest and follow-up
($p < .05$). There was a significant decrease in scores
between posttest and follow-up ($p < .01$).

An examination of Figure 6 reveals that the rejected
group, relative to the average group, showed an increase
in number of relevant consequences given on the WHNG.
Post hoc comparisons revealed that mean scores for the
rejected group were significantly increased at both
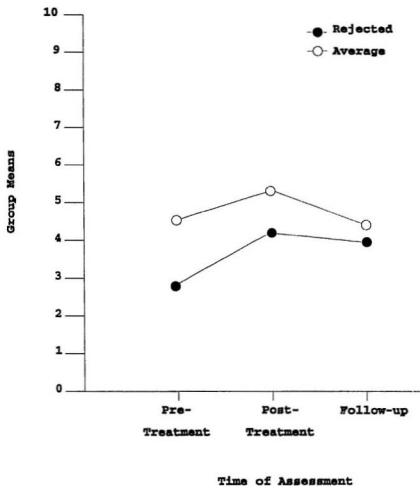
Figure 6. Group means over time on the what happens next? game (total)

posttest and follow-up as compared with the pretest ($p<.01$). There was no difference between posttest and follow-up. For the average group, there was a significant increase from pretest to posttest ($p<.01$) and a significant decrease from posttest to follow-up ($p<.01$). The difference between pretest and follow-up was nonsignificant.

An examination of Figure 7 indicates that WHNG scores for the treatment group increased over time whereas those for the attention control group showed little change. For the treatment group, post hoc comparisons indicated that posttest and follow-up means were significantly higher than the pretest mean ($p<.01$). A significant decrease was found between posttest and follow-up ($p<.01$). There were no significant changes across trials for the attention control group.

Analyses of part 1 (peer problems) of the WHNG revealed significant effects for Group, $F_{(1, 25)} = 9.41$, $p<.01$; Treatment, $F_{(1, 25)} = 33.96$, $p<.01$; and Trial, $F_{(2, 50)} = 18.94$, $p<.01$. Significant interactions were found for Group x Trial, $F_{(2, 50)} = 7.98$, $p<.01$, and Treatment x Trial, $F_{(2, 50)} = 33.57$, $p<.01$. The rejected group suggested fewer consequences to peer problems than
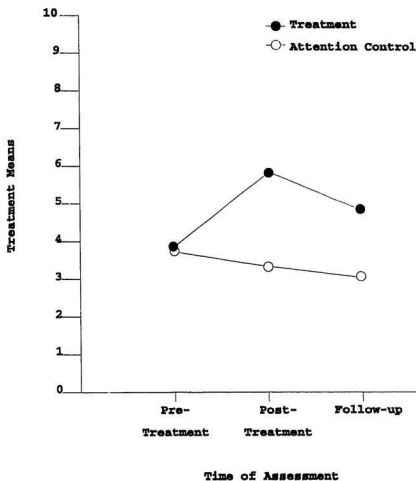
Figure 7. Treatment means over time on the what happens next? game (total)

did the average group. Relative to the attention control group, the treatment group suggested significantly more consequences to peer problems. All children showed an improvement over time. Post hoc analyses revealed significant increases between pretest and posttest ($p<.01$) and between pretest and follow-up ($p<.05$). A significant decrease was found between posttest and follow-up ($p<.01$).

An examination of Figure 8 indicates that the rejected group showed an increase in the number of consequences given to peer problems relative to the average group. Post hoc analyses revealed a significant increase between pretest and both posttest and follow-up for the rejected group ($p<.01$). The difference between posttest and follow-up was not significant. For the average group, there was a significant increase from pretest to posttest ($p<.01$) and a significant decrease from posttest to follow-up ($p<.01$). The difference between pretest and follow-up was nonsignificant.

An examination of Figure 9 shows that the treatment group showed an increase in number of consequences given to the peer problems as compared with the attention control group which remained relatively the same. Post
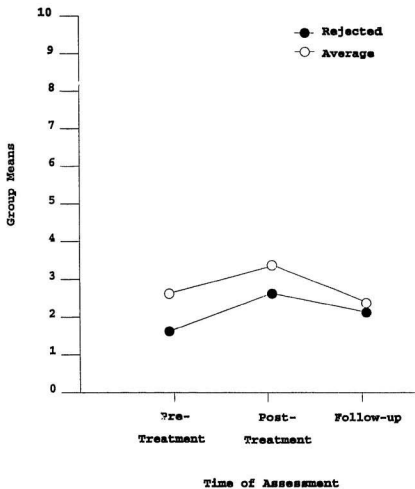
Figure 8. Group means over time on part 1 (peer problems) of the what happens next? game
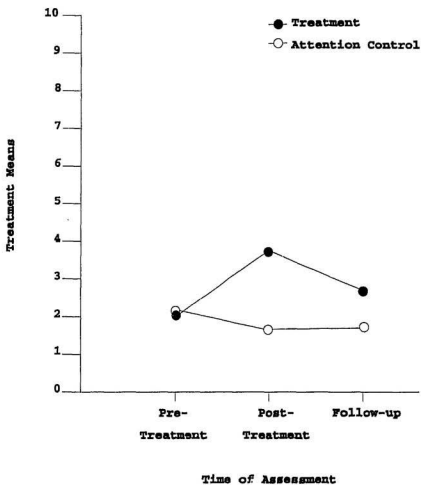
Figure 9. Treatment means over time on part 1 (peer problems) of the what happens next? game

hoc analyses revealed a significant increase for the treatment group between pretest and both posttest and follow-up trials ($p<.01$). There was a significant decrease between posttest and follow-up ($p<.01$). No significant differences were found for the attention control group.

Analysis of part 2 (adult problems) of the WHNG revealed significant effects for Group, $F(1, 25) = 16.61$, $p<.01$), and Treatment, $F(1, 25) = 13.01$, $p<.01$. No significant interactions were found. A significant group effect indicated that the rejected group gave significantly fewer solutions to the adult problems than did the attention control group. Overall, the treatment group gave significantly more solutions to the adult problems than the attention control group.

Discussion

Of initial interest is the finding that a significantly higher number of males as opposed to females were assigned to the rejected group. Eleven of the 16 children who met the criteria for inclusion in the rejected group were males as opposed to only five

females. Given that aggression has been found to be more prevalent among males who are rejected (Coie et al., 1990), it is not surprising that there were significantly more males assigned to the rejected group.

The first hypothesis in the present study was that prior to training the rejected group would have significantly lower scores on both the PIPS and WHNG measures of problem-solving ability compared with the average group. As expected, at pretest, the rejected group gave significantly fewer relevant solutions to problems on the PIPS and suggested significantly fewer consequences to problem situations on the WHNG than did the average group. Differences were evident on both part 1 (peer problems) and part 2 (adult problems) of the PIPS and WHNG.

These findings suggest that the target population, preschool children with low social acceptance among peers who are perceived by teachers as aggressive, are deficient in specific problem-solving skills. The present study provides support for the relationship between adjustment and both alternative thinking and consequential thinking demonstrated by Shure, Spivack, and colleagues. These findings are consistent with the

meta-analysis by Denham and Almeida (1987) who found a significant relationship between behavioral adjustment and ICPS skills.

Effectiveness of Treatment

Effects on problem-solving skills.

With respect to treatment effectiveness, it was hypothesized that the treatment group would show significant improvement on part 1 (peer problems) of both the PIPS and WHNG measures of problem-solving ability. Improvement was expected to be significantly greater for the rejected treatment group than for the average treatment group. No change was expected on part 2 (adult problems) of either measure.

As hypothesized, children who participated in the treatment program showed a significant increase in both the number of alternative solutions suggested on the PIPS and the number of consequences given to problems on the WHNG following completion of the program. Although there was a significant decrease in gains on both measures at a 4 week follow-up, children in the treatment group

maintained their improved ability to generate alternative solutions and conceptualize consequences. These findings are consistent with those of Shure and Spivack (Shure & Spivack, 1979, 1980; 1982a; Shure, 1993) who found that preschool children improved in both alternative thinking and consequential thinking as a result of training. Results are also consistent with those of Sharp (1981) and Feis and Simons (1985) who found significant gains in alternative thinking for preschool children as a result of training. Similarly, Denham and Almeida (1987) found that children who received training showed improvement in ICPS skills.

With regard to specific findings on the PIPS and WHNG, children who received training showed significant improvement only on part 1 (peer problems) of the PIPS and WHNG measures. As predicted, they showed no significant change on part 2 (adult problems) of either measure. This finding is not surprising given that the present training program focused on resolution of problems with other children and not adults. The finding is consistent with that of Vaughn and Ridley (1983) who found no effect of training on children's interactions with adults.

Contrary to expectations, the rejected group did not benefit significantly more from intervention than did the average group. The lack of a significant Group x Treatment x Trial interaction indicates that treatment was not differentially effective for rejected and average children. Although the rejected group did show significant improvements in problem-solving skills as a result of training, the training program may not have been of sufficient duration or intensity to differentially alter the problem-solving deficits of this population. These results are consistent with those of Stiefvater, Kurdek, and Allik (1986) who found a short-term problem-solving program to be equally effective for fourth graders of differing social status.

Effects on behavioral adjustment.

With respect to behavior, it was hypothesized that the treatment group would show a significant improvement in overall behavior and a significant decrease in aggressive behavior as reflected on the PBQ. Improvement was also expected to be significantly greater for the

rejected treatment group than for the average treatment group.

Contrary to expectations, the treatment group did not show significant improvement in overall behavior compared with the attention control group. However, all children who participated in training were rated as less aggressive. This decrease became evident only at the 4 week follow-up, suggesting that positive changes in behavior were not immediate but took some time before they became evident. Contrary to expectations however, the rejected treatment group did not show a greater decrease in aggression than did the average treatment group. A lack of significant behavioral change for the rejected treatment group suggests that behavioral change may not be mediated through a strictly cognitive intervention, and may require an integration of behavioral and cognitive techniques.

Effects on social status.

The final hypothesis was that the treatment group would show a significant improvement in peer acceptance as reflected by their rating-scale scores and that improvement would be significantly greater for the

rejected treatment group than for the average treatment group. Contrary to expectations, however, there was no improvement in children's acceptance by peers. Children in the rejected who were selected on the basis of low peer acceptance continued to have lower ratings of peer acceptance than did the average children. As recommended by both Schneider (1992) and Beelmann et al. (1994), longer follow-up is needed to determine whether improvements that have occurred will be maintained and whether there are any treatment effects that may become evident only after a longer follow-up period.

Despite positive changes in the behavior of the rejected children, these changes may not have been sufficient to alter their peer status. Even with significant improvement in behavior, there may be little effect on peer status because of the difficulty in altering peer reputation (Hymel, Wagner, & Butler, 1990; Rogosch & Newcomb, 1989). According to Hymel et al. (1990), low social status may be established as a result of poor social skills or inappropriate social behavior. However, once social status has been established, social reputation and expectations within a peer group serve to maintain peer rejection. Even with improvements in

children's behavior, peers are resistant to altering
their stance toward rejected children.

Other effects.

With the exception of part 2 (adult problems) of
both the PIPS and the WHNG, all participants showed some
improvement over time on the remaining problem-solving
measures. These changes may be attributed to the effects
of maturation as a part of normal development. While the
rejected group showed a significant improvement in
overall behavioral adjustment and a decrease in
aggression at the 4 week follow-up, the average group did
not show a significant change. This change may represent
a regression towards the mean for the rejected group.

Summary

In summary, the present program, shortened
significantly in length from the Spivack and Shure (1974)
program, was successful in teaching problem-solving
skills to preschool children. Although rejected children
were more deficient than average children in selected

problem-solving skills prior to the implementation of the training program, the present program was not found to be differentially effective for the two selected groups.

Future Research

The need for effective intervention with rejected children is highlighted when one considers the long-term, adverse social consequences associated with peer rejection. With an increasing number of children attending preschool in the future, the preschool environment will have an important role to play in the prevention of social difficulties. Perhaps training preschool teachers to incorporate problem-solving skills within their daily routine would be beneficial, particularly for children with low peer status. In addition to focusing intervention on the social skills of rejected children, future efforts should consider the role of the peer group and the impact of social reputation in maintaining negative peer status.

Although focusing on peer relations is important, recent research has suggested that difficulties with peer relations may be influenced by children's experiences

within the family context. Consistent with studies of
older children (e.g., Putallaz, 1987), Travillion and
Snyder (1993) found that socialization in the family had
an effect on the peer relations of preschool children.
They reported that poor maternal discipline, as evidenced
by behavioral expectations below the child's
developmental status and by the use of harsh verbal and
physical punishment (Kennedy, 1990), was associated with
aggressive behavior and ultimately with rejection in the
peer setting. Similarly, Miller, Cowan, Cowan,
Hetherington, and Clingempeel (1993) found that parents'
individual and marital adjustment had a strong effect on
the quality of parenting style, which in turn, affected
the behavior of both preschoolers and early adolescents.
Children socially rejected among peers in kindergarten
were found to have experienced greater frequencies of
adult aggression, either parental or spousal, in the
preschool years (Strassberg, Dodge, Bates, & Pettit,
1992).

     If children's social behavior is learned, at least
in part, through early family interactions, it should be
possible to develop preventive family-based interventions
that can be implemented before children experience the

significant negative consequences of peer rejection (Putallaz, 1987). The probability of obtaining therapeutic gains may be increased when interventions include multiple systems with whom the children interact. Early intervention programs focusing on both home and school settings may have stronger and more durable effects than those focusing on either setting alone.

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Appendix A

<u>Consent Letter Sent to Parents</u>

Dear Parents:

I am a graduate student in clinical psychology at
Memorial University. I am currently preparing my Masters
Thesis and am interested in carrying out a program
designed to increase positive social interaction among
preschool children. This program is adapted from a
program found to be effective with somewhat older
children. Attention will be placed upon helping preschool
children deal with problems that commonly arise with
their peers. Such a situation, for example, may involve
two children wanting to play with the same toy. The focus
of the program will be on helping the children solve such
problems so as to maintain positive social relations
between the peers. In particular, children will be helped
to think of different ways of solving a problem (e.g.,
sharing a toy, taking turns), instead of fighting over
the toy as well as looking ahead to the consequences of
their particular action.

In any preschool, there are some children that each child prefers to play with and others whom they do not prefer to play with. It has been found that children others prefer to play with are those who tend to share and are cooperative rather than aggressive or dominating. Children in the preschool will be asked how much they like each of their classmates. Some children who are popular with their peers and others who are less popular will be selected to participate in the study. The main objective of the program as stated above is to increase the positive social interaction among these groups.

The program will involve 13 sessions of 20 minutes a day. All sessions will be carried out in the form of games so as to make the sessions as enjoyable as possible for the children. In a typical session, small groups of children will be presented with a problem that will be displayed on posters. As a group, the children and myself will attempt to come up with different ways of handling the problem as well as the consequences of handling the problem in a particular way. The more effectively children handle problems, the better they will get along with one another.

The preschool your child is enrolled in is interested in having the program implemented in their preschool. It is necessary to obtain your permission for your child to participate. Should your child be selected after you have given your permission, all results of the study will be made readily available to you upon completion of the program. This information is of interest to myself only and all information will be kept strictly confidential.

Sincerely,

Donna Bennett
Graduate Student

Christine Arlett, Ph.D.
Supervisor
Clinical Psychologist

_____ Yes, I give permission for my child to
participate.

_____ No, I do not give permission for my child to
participate.

Signature: _____

Appendix B

Preschool Interpersonal Problem-Solving (PIPS) Test

The PIPS is presented with the following introduction: We want to know how children think about things. I've got some pictures and I'm going to tell you some stories about children. I'm going to tell you the first part of the story, and I want you to make up the rest of the story. I want you to tell me what you think the child could do in the story. Pretend all the children are four years old just like you. Okay? Here is the first story.

1. Here's Billy (Helen) *(point to child)* and here's Johnny (Kelly) *(point to child)*. Can you tell me what this toy is? *(point to toy)*. *Let child respond, and correctly identify toy if need be.*

Billy (Helen) is playing with this boat and he/she has been playing with it for a long time. Johnny (Kelly) wants a chance to play with the boat, but Billy (Helen) keeps on playing with it.

Who's been playing with the boat for a long time? *You can point. Let child respond.* That's right, Billy

(Helen) *(point to child)*. Who wants to play with it? *Let child respond.* That's right, Johnny (Kelly) *(point to child)*.

What can Johnny (Kelly) *(point to child)* do so he/she can have a chance to play with the boat? *(point to toy)*.

2. Now let's pretend that Kevin (Beverly) has been playing with this kite for a long time, and Eddie (Cathy) wants to have a chance to play with it. But Kevin (Beverly) keeps on playing with it.

What can Eddie (Cathy) do so he/she can have a chance to play with the kite?

3. Now let's pretend that Donald (Joanne) has been playing with this cash register for a long time, and Michael (Erin) wants to have a chance to play with it. Donald (Joanne) keeps on playing with it.

What can Michael (Erin) do so he/she can have a chance to play with the cash register?

4. Douglas (Jessica) is playing with this drum and has been playing with it for a long time. Now Kenny (Michelle) wants a chance to play with it. But Douglas (Jessica) keeps on playing with it.

What can Kenny (Michelle) do so he/she can have a chance to play with the drum?

5. Now let's pretend that Mark (Angela) has been playing with this truck (doll) for a long time and Steven (Karla) wants to have a chance to play with it. But Mark (Angela) keeps on playing with it.

What can Steven (Karla) do so he/she can have a chance to play with the truck (doll)?

6. Christopher (Megan) has been playing with this shovel for a long time, and David (Krista) wants a chance to play with it. But Christopher (Megan) keeps on playing with it.

What can David (Krista) do so he/she can have a chance to play with the shovel?

7. Gregory (Lorraine) has been playing with this farmhouse for a long time, and Scott (Lisa) wants to have a chance to play with it. But Gregory (Lorraine) keeps on playing with it.

What can Scott (Lisa) do so he/she can have a chance to play with the farmhouse?

8. Paul (Ashley) has been playing with this telephone for a long time, and Matthew (Rebecca) wants to

have a chance to play with it. But Paul (Ashley) keeps on
playing with it.

What can Matthew (Rebecca) do so he/she can have a
chance to play with the telephone.

Now we're going to change the story. We're going to
make up some stories about children and their mommies.
These are just pretend (make-believe) stories, okay?
Here's the first one.

1. Here's Kenny (Jennifer) *(point to child)* and
this is Kenny's (Jennifer's) mommy *(point to mother)*.

Let's pretend that Kenny (Jennifer) just broke
his/her mommy's favorite flower pot *(point to object)* and
he/she is afraid his/her mommy might be mad at him/her.

What did Kenny (Jennifer) do? *Let children respond.*
Yes, he/she broke her favorite flower pot.

What can Kenny (Jennifer) do so his/her mommy will
not be mad at him/her?

2. Now let's pretend that Jeffrey (Heather)
scratched his/her mommy's wooden table, and made a big
scratch or mark on the table. His/her mommy might be mad
about that.

What can Jeffrey (Heather) do so his/her mommy will not be mad at him/her because he/she scratched the table?

3. Dean (Ann) broke his/her mommy's favorite plate and he/she is afraid his/her mommy might be mad at him/her.

What can Dean (Ann) do so his/her mommy won't be mad at him/her?

4. One day Derek (Ellen) tore some pages in his/her mommy's favorite book and he/she is afraid his/her mommy might be mad.

What can Derek (Ellen) do so his/her mommy won't be mad?

5. Barry (Karen) was playing ball and the ball hit a window and the window broke. He/she is afraid that his/her mommy might be mad.

What can Barry (Karen) do so his/her mommy will not be mad at him/her?

6. Wayne (Denise) broke his/her mommy's favorite candy dish and he/she is afraid his/her mommy might be mad at him/her.

What can Wayne (Denise) do so his/her mommy won't be mad?

Appendix C

What Happens Next? Game (WHNG)

The WHNG is presented with the following
introduction: We're going to play the "What happens
next?" game. We're going to tell stories together. I'm
going to begin this story and I want you to tell me what
happens next. Here is the first story.

1. William (Susan) had a spintop and he/she was
playing with it *(point to child and point to toy)*.

Wayne (Corrine) wanted to play with that spintop
(point to other child).

So Wayne (Corrine) grabbed--you know, snatched that
spintop.

Tell me what happens next.

2. Now we're going to make up a new story, different
from the first one. Okay?

Shane (Katie) was playing with this puzzle.

Johnny (Betty) wanted to play with the puzzle.

So Johnny (Betty) grabbed it--snatched it from
him/her.

Tell me what happens next.

3. Now we're going to tell another different story. Can you make up a third ending?

Ronnie (Brenda) was playing with this telephone.

Craig (Janice) wanted to play with the telephone.

So Craig (Janice) grabbed it--snatched it from him/her.

Tell me what happens next.

4. Now let's see if you can think of an even different--new ending.

Ray (Kelly) was playing with this jack-in-the box.

Michael (Judy) wanted to play with it.

So Michael (Judy) grabbed it--snatched it from him/her.

Can you finish the story. Tell me what happens next.

5. Let's have another new ending.

Sean (Joanne) was playing with this puppet.

Glenn (Heather) wanted a chance to play with it.

So Glenn (Heather) grabbed it--snatched it from him/her.

You finish the story. Tell me what happens next.

6. Now let's see if you can think of an even different ending?

Dean (Chris) was playing with this boat.

Philip (Nicole) wanted to play with the boat.

So Philip (Nicole) grabbed it--snatched it from him/her.

Tell me what happens next.

The child was then presented with the following five adult stories:

1. Here's Billy (Helen) and this is Mrs. Smith *(point to child and point to mother)*. Billy (Helen) saw Mrs. Smith's little dog on her porch, and took it for a walk *(point to dog)*. But Billy (Helen) did not ask Mrs. Smith if he/she could take it. What might happen next in the story?

2. Here's Richard (Cathy) and this is Mrs. Brown. Richard (Cathy) took Mrs. Brown's umbrella and did not ask her if he/she could use it. What might happen next in the story?

3. Here's Kevin (Michelle) and this is Mrs. Hill. Kevin (Michelle) was in her house and saw a small wooden statue of a horse on the table. He/she took it home to show someone, but he/she didn't ask Mrs. Hill if he/she could take it. What might happen next in the story?

4. Here's Christopher (Beverly) and this is Mrs. Green. Christopher (Beverly) was at her house and saw a beautiful dish, and took it to use that night. But he/she did not ask Mrs. Green if he/she could take it. What might happen next in the story?

5. Here's Donald (Angela) and this is Mrs. Scott. Donald (Angela) took Mrs. Scott's flashlight and did not ask her if he/she could use it. What might happen next in the story?

6. Here's Steven (Krista) and this is Mrs. Snow. Steven (Krista) was at her house and saw a beautiful new tablecloth, and took it to use that night. But he/she didn't ask Mrs. Snow if he/she could use it. What might happen next in the story?

Appendix D

Training Sessions: Treatment Group

The treatment group sessions were as follows:

Session 1

Session one teaches the language concepts **IS**, **A-SOME**, and **NOT**.

Now we're going to play a game. Are you ready? 'kay. Watch me very carefully.

Johnny *(name boy in the group)* **IS** a boy. *Is Johnny a boy? Children reply.* Yes, Johnny **IS** a boy. *Repeat with each child in the group.*

If a child does not respond, ask him/her again and say "good" if he/she responds. If not, encourage him/her to shake his/her head in response to the question "Is Johnny a boy?" If he/she responds say "good". If the child still does not respond do not push him/her.

Now watch me carefully. When I point to someone who is **A** girl, raise your hand like this. *Examiner raises hand.* What are we going to do when I point to **A** girl? *Children reply.* That's right, raise our hand. *Examiner goes through motion.*

When I point to **A** boy, tap your knee like this. *Examiner taps knee.* What are we going to do when I point to **A** boy? *Children reply.* That's right, tap our knee. *Examiner goes through motion.*

Okay. Now watch. *Point to a child and call him/her by name.* Johnny. *Wait for children to tap.* Good, we tapped our knee because Johnny is **A** boy. *Continue with each child in the group.*

*If a child does not join the group ask him/her again. If he/she still does not respond encourage him/her to tap his/her knee with you. Say: "Let's tap our knee together". If the child responds say: "Good, we are tapping our knee because Johnny is **A** boy". If the child does not respond do not push him/her.*

Now instead of pointing to **A** boy or **A** girl we are going to point to **SOME** boys or **SOME** girls.

Now watch me carefully. When I point to **SOME** girls, raise your hand like this. *Examiner raises hand.* What are we going to do when I point to **SOME** girls? *Children reply.* That's right, raise our hand like this. *Examiner raises hand again.*

When I point to **SOME** boys, we will tap our knee like this. *Examiner taps knee.* What are we going to do when I

point to **SOME** boys? *Children reply.* That's right, we're
going to tap our knee. *Examiner goes through motion.*

Okay. Now watch. *Point to two children and call them
by name.* Johnny and Jimmy. *Children respond.* Good, we
tapped our knee because Johnny and Jimmy are **SOME** boys.
Sally and Mary. What do we do? *Children respond.* Good, we
raised our hand because Sally and Mary are **SOME** girls.
Continue alternating between pairs of boys and girls.

*If a child does not respond say, "Johnny (name
child), what do we do when we point to* **SOME** *girls?"
Encourage child to raise his/her hand with you. If the
child responds say "good". If the child does not respond,
do not push him/her.*

Now we're going to play a game with the word **NOT**.
Are we ready? Okay. Watch me very carefully.

Johnny *(point to a boy in the group)* is a boy.
Johnny is **NOT** a girl. Is Peter *(point to a boy)* a boy?
Yes *(examiner nods head)*, Peter is a boy Peter is **NOT** a
girl.

Is Sally *(point to a girl)* a boy? No *(examiner
shakes head)*, Sally is **NOT** a boy.

Sally is **NOT** a _____. *Let children respond.*

Sally is a girl.

Sally is **NOT** a boy.

Repeat with each child in the group.

If a child does not respond, encourage him/her to shake his/her head in the appropriate direction. If the child responds say "good". If the child still does not respond, do not push him/her.

Complete the session by switching to Johnny *(point to a child)* **IS** a _____. Good, Johnny **IS** a _____ *(examiner repeats response). Repeat with other children in the group.*

Session 2

Session two teaches the language concepts **OR/AND** and **SAME/DIFFERENT**.

Today, we are going to play a game with the words **OR** and **AND**.

Am I pointing to Johnny **OR** am I pointing to Jimmy? *(point to a child in group). Children reply.* Good, I am pointing to Jimmy.

Am I pointing to Sally **OR** am I pointing to Susie? *(point to a child). Children reply.* Good, I am pointing to Sally. *Repeat with other children in the group.*

Have some children in the group sitting and some standing. Is Carol *(point to a child)* standing **OR** is she sitting? *Children respond.* Yes, Carol is sitting. *Continue with the game, pointing to different children in the group.*

Is Diane standing? *(point to a child).* *Let children respond.* Is Barbara standing? *(point to another child).* *Let children respond.* Yes, Diane **AND** Barbara are standing. *Repeat with pairs of children alternating between sitting and standing.*

Is Johnny *(name a boy)* a boy? *Let children respond.* Is Jimmy *(name another boy)* a boy? *Let children respond.* Yes, Johnny **AND** Jimmy are boys. *Repeat with pairs of children alternating between boys and girls.*

Now we're going to play a game with the words **SAME** and **DIFFERENT**. Watch carefully.

I'm raising my hand. *Examiner raises hand.* Now I'm raising my hand again. *Examiner raises hand again.* I just did the **SAME** thing. I raised my hand. Watch me. Now I'm stamping my foot. *Examiner stamps foot.* Let's all do the **SAME** thing. *Let children respond.* Continue with three or four different motions, each time requesting that the children do the **SAME** thing.

Watch me while I raise my hand. *Examiner raises hand*. Now I'm going to do something **DIFFERENT**. I'm going to tap my knee. *Examiner taps knee*. See, tapping my knee is **DIFFERENT** from raising my hand. Now I'm going to roll my hands. *Examiner rolls hands*. Can you do something that is **NOT** the **SAME** as rolling your hands, something that is **DIFFERENT**. *Children respond. Continue with the game sometimes asking for something that is the **SAME** as what you are doing and sometimes asking for something that is **DIFFERENT***.

*The concepts **SAME** and **DIFFERENT** are then taught with crayons and paper.*

Give some children in the group a crayon and give some children a piece of paper. Some children have a crayon and some children have a piece of paper.

Everybody who has a crayon, hold it up high. See, some of you are holding crayons. *Name each child who has a crayon.* Now everybody who has a piece of paper hold it up high. See, some of you are holding a piece of paper. *Name each child who has a piece of paper.*

Is a crayon **DIFFERENT** from a piece of paper? *Children reply.* Yes, a crayon is **DIFFERENT** from a piece of paper. A crayon is **NOT** the **SAME** as a piece of paper.

Is a crayon the **SAME** as a piece of paper? *Children reply.* A crayon is **DIFFERENT** from a piece of paper.

Point to a child who is holding a crayon. Who is holding something that is the **SAME** as what *(name child with a crayon)* is holding? *Children respond.*

Who is holding something that is **DIFFERENT** from *(name same child)*? *Repeat with other children in the group alternating between **SAME** and **DIFFERENT**.*

Session 3

Session 3 reviews the language concepts **IS, A-SOME, NOT, OR/AND**, and **SAME/DIFFERENT**.

Today we are going to talk about all the words we talked about during the past two days.

Are you ready?

Johnny *(name a boy in the group)* **IS** a boy. Is Johnny a boy? *Children reply.* Yes, Johnny **IS** a boy. Is Sally *(name a girl)* a girl? *Children reply.* Yes, Sally **IS** a girl. *Repeat with each child in the group.*

When I point to someone who is **A** girl, raise your hand like this. *Examiner raises hand.* When I point to someone who is **A** boy, tap your knee like this. *Examiner taps knee. Point to a child and call him/her by name.*

Sally. *Wait for children to raise hand.* Good, we raised our hand because Sally is **A** girl. *Continue with other children in the group.*

When I point to **SOME** girls, we will raise our hand like this. *Examiner raises hand.* When I point to **SOME** boys, we will tap our knee like this. *Examiner taps knee. Point to two children and call them by name.* Sally and Mary. *Children respond.* Good, we raised our hand because Sally and Mary are **SOME** girls. *Continue with other pairs of boys and girls.*

Johnny *(point to a boy in the group)* is a boy. Johnny is **NOT** a girl. Is Mary *(point to a girl)* a boy? No, *(examiner shakes head)*, Sally is **NOT** a boy. *Repeat with other children in the group.*

Am I pointing to Johnny **OR** am I pointing to Jimmy? *(point to a child in the group). Children respond.* Good, I am pointing to Jimmy. *Repeat with other children in the group.*

Have some children standing and some children sitting. Is Johnny standing? *(point to a child). Children respond.* Is Jimmy standing? *(point to another child).* Yes, Johnny **AND** Jimmy are standing. *Repeat with*

pairs of children alternating between sitting and standing.

Is standing **DIFFERENT** than sitting? *Children respond.* Yes, standing is **DIFFERENT** from sitting. Standing is **NOT** the same as sitting.

Point to a child who is sitting. Who is doing the **SAME** as *(child sitting)*? *Children respond.* Who is doing something **DIFFERENT** from *(name same child)*? *Repeat with other children in the group alternating between SAME and DIFFERENT.*

Session 4

Children are presented with the following problem: **Child A wants child B to help him/her put the toys away.** Use any picture of two children playing with toys.

Let's pretend that both of these children *(point to children)* were playing with these toys *(point to toys)* and it's time to put them away. A and B *(name children)* were playing with the toys. *Have the group give names to the children.*

This child *(point to child)* wants that child *(point to child)* to help him put the toys away.

What does _____ want _____ to do? *Let children respond.*

That's right, _____ wants _____ to help him/her put the toys away.

Now let's pretend that _____ will not help _____ put the toys away.

What can _____ DO so _____ will help him/her put the toys away?

After a response is given, repeat the response and say: That's one way. The idea of this game is to think of lots of ways that _____ can get _____ to help him/her put the toys away.

I'm going to write all of your ideas on this board. Let's try to fill up the whole board. Who's got a different idea?

He/she *(name child)* could *(repeat response given)* or he/she could _____. Can anybody think of way number two? *Show two fingers. Let children respond.*

Good, Sean *(name child)* gave us an idea. That's way number two. Now we have *(repeat responses given)*. He/she can _____ or _____. What else can he/she do? *Write each new idea on the board.*

Can anybody think of way number three? *If not
already given, follow with:* What can this child *(point to
child)* SAY to this child *(point to child)* so he'll help
him put the toys away? Let's fill up the whole board.

Continue until the children no longer offer new
ideas.

Session 5

Children are presented with the following problem:
**Child A would like to have some of the popcorn that child
B is eating.** Use any picture of two children with one
child eating something.

Let's pretend that this child *(point to child)* is
eating these popcorn *(point to popcorn)* and that child
(point to child) would like to have some of them. *Have
the group give names to the children.*

This child *(point to child)* wants that child *(point
to child)* to give him/her some of the popcorn.

What does _____ want? *Let children respond.*

That's right, _____ would like to have some of the
popcorn that _____ has.

Now let's pretend that _____ will not give _____
any of the popcorn.

What can ___ ___ DO so _____ will give him/her some of the popcorn?

After a response is given, repeat the response and say: That's one way. The idea of the game is to think of lots of ways that _____ can get _____ to give him/her some of the popcorn.

Let's write all of our ideas on the board. Who's got a different idea?

She *(name child)* could *(repeat response given)* or she could _____. Can anybody think of way number two? *Show two fingers. Let children respond.*

Good, Betty *(name child)* gave us another idea. That's way number two. Now we have *(repeat responses given)*. He/she can _____ or _____. What else can he/she do? *Write all ideas on the board.*

Can anybody think of way number three? *If not already given, follow with:* What can this child *(point to child)* SAY to this child *(point to child)* so he/she will give him/her some of the popcorn?

Continue until the children no longer offer new ideas.

Session 6

Children are presented with the following problem:
**Child A is playing with this toy and child B would like
a chance to play with it**. Use any picture of two children
and a toy.

Let's pretend that this child *(point to child)* is
playing with this toy *(point to toy)* and that child
(point to child) would like to have a chance to play with
it. *Have the group give names to the boys.*

This child *(point to child)* wants that child *(point
to child)* to give him/her a chance to play with the toy.

What does _____ want _____ to do? *Let children*
respond.

That's right, _____ would like _____ to let
him/her play with the toy.

Now let's pretend that _____ will not let _____
play with the toy.

What can _____ DO so _____ will let him/her play
with the toy?

*After a response is given, repeat the response and
say:* That's one way. The idea of the game is to think of
lots of ways that _____ could get _____ him/her to let
him play with the toy.

I'm going to write all of your ideas on the board.
Can anybody think of a different way that _____ could to
play with the toy.

He/she *(name child)* could _____ *(repeat response
given)* or he/she could _____. Can anybody think of way
number two? *Show two fingers. Let children respond.*

Good, Billy *(name child)* gave us another idea. Now
we have *(repeat responses given)*. He/she can _____ or
he/she can _____. What else can he/she do?

Can anybody think of way number three? *If not say,*
What can this child *(point to child)* SAY to this child
(point to child) so he/she can have a chance to play with
the toy?

Continue until the children no longer offer new
ideas.

Session 7

Children are presented with the following problem:
**A teacher is reading a story to a group of children.
Child A is standing up so that child B can not see the
story book.** Use any picture of a teacher and a group of
children with one child standing.

Let's pretend that the teacher *(point to teacher)* is reading a story to these children *(point to children)*. This child *(point to child)* is standing up so that this child *(point to child)* can not see the story book. *Have the group give names to the children.*

This child *(point to child)* wants that child *(point to child)* to sit down so he/she can see the story book.

What does _____ want _____ to do? *Let children respond.*

That's right, _____ wants _____ to sit down so he/she can see the story book.

Now let's pretend that _____ will not sit down so _____ can see the book.

What can _____ DO so _____ will sit down?

After a the first response is given, repeat the response and say: That's one way. Now remember that the idea of this game is to think of lots of different ways that _____ can get _____ to sit down.

Let's try to fill up the whole board. Who's got a different idea?

He/she *(name child)* could *(repeat response)* or he/she could _____. Can anybody think of way number two? *Show two fingers. Let children respond.*

Good, Cathy *(name child)* gave us an idea. That's way
number two. Now we have *(repeat responses given)*. He/she
can _____ or _____. What else can he do? *Write all
ideas on the board.*

Can anybody think of way number three? *If not
already given, follow with:* What can this child *(point to
child)* SAY to this child *(point to child)* so he/she will
sit down?

Continue until the children no longer offer new
ideas.

Session 8

Children are presented with the following problem:
**Child A is showing the teacher what he/she has made and
child B would like a chance to show the teacher what
he/she has made.** Use any picture of two children and a
teacher.

Let's pretend that this child *(point to child)* is
showing the teacher *(point to teacher)* what he/she has
made and that child *(point to child)* would like to have
chance to show the teacher what he/she has made.

This child *(point to child)* would like that child *(point to child)* to give him/her a chance to show the teacher *(point to teacher)* what he/she has made.

What does _____ want? *Let children respond.*

That's right, _____ would like to show the teacher what he/she has made.

Now let's pretend that _____ will not let _____ show the teacher what he/she has made?

What can _____ DO so _____ will let him/her show the teacher what he/she has made?

After a response is given, repeat the response and say: That's one way. The idea of the game is to think of lots of ways that _____ can get _____ to let him/her show the teacher what he/she has made.

I'm going to write all of your ideas on the board. Let's think of lots of ideas. Who has a different idea?

He/she *(name child)* could *(repeat response)* or he/she could _____. Can anybody think of way number two? *Show two fingers. Let children respond.*

Good, Heather *(name child)* gave us an idea. That's way number two. Now we have *(repeat responses given)*. He/she can _____ or _____. What else can he/she do? *Write each of the ideas on the board.*

Can anybody think of way number three? *If not already given, follow with:* What can this child *(point to child)* SAY to this child *(point to child)* so he/she will let him/her show the teacher what he/she has made?

Continue until the children no longer offer new ideas.

Session 9

Children are presented with the following problem: **Child A and child B are playing together and child C would like to play with them.** Use any picture of three children and a toy.

The examiner should elicit alternative solutions in the same way as described in the alternative training sessions. Then say: Okay. Let's make up a different kind of story, a story about what might happen next. Pretend that this child *(point to child)* _____ *(repeat solution given).* What might happen next in the story? I'm going to write all the things that MIGHT happen next on this side of the board *(point to right side).* I'm going to put all of your ideas over here *(point to left side)* and all of the things that might happen next here *(point to right side).*

After the first consequence has been given, follow with: That's one thing that MIGHT happen if *(repeat alternative given)*. Can anyone think of something different that might happen if this child *(point to child)* _____ *(repeat solution)*?

After a second response is given say: Now we have two things that might happen. This child MIGHT _____ *(repeat consequence given)* or he/she might _____ *(repeat consequence)*.

When consequences are no longer offered, change the question to: What might this child *(point to child)* DO if that child *(point to child)* _____ *(repeat solution)*?

If not already offered, the next question can be: What might this child *(point to child)* SAY if that child *(point to child)* _____ *(repeat solution)*? He/she MIGHT SAY _____.

Using one solution at a time, elicit all the consequences that you can before going to a new solution.

Session 10

Children are presented with the following problem: **Child A and B are waiting to go to the bathroom. Child A is next in line but child B really needs to go ahead of**

Child A. Use any picture of two children waiting to go to a washroom.

The examiner should elicit alternative solutions in the same way as described in the alternative training sessions. Then say: Okay. Let's make up a different kind of story, a story about what might happen next. Pretend that this child *(point to child)* _____ *(repeat solution given)*. What might happen next in the story? I'm going to write all the things that MIGHT happen next on this side of the board *(point to right side)*. I'm going to put all of your ideas over here *(point to left side)* and all of the things that MIGHT happen next here *(point to right side)*.

After the first consequence has been given, follow with: That's one thing that MIGHT happen if *(repeat alternative given)*. Can anyone think of something different that MIGHT happen if this child (point to child) _____ *(repeat solution)*?

After a second response is given say: Now we have two things that might happen. This child MIGHT _____ *(repeat consequence given)* or he/she might _____ *(repeat consequence)*.

When consequences are no longer offered, change the question to: What might this child *(point to child)* DO if that child *(point to child)* _____ *(repeat solution)?*

If not already offered, the next question can be: What might this child *(point to child)* SAY if that child *(point to child)* _____ *(repeat solution)?* He/she MIGHT SAY _____.

Using one solution at a time, elicit all the consequences that you can before going to a new solution.

Session 11

Children are presented with the following problem: **Child A is sitting on the floor for story time. Child B would like to sit down but child A needs to move a little so he can sit down.** Use any picture of a group of children with one child standing.

The examiner should elicit alternative solutions in the same way as described in the alternative training sessions. Then say: Okay. Let's make up a different kind of story, a story about what MIGHT happen next. Pretend that this child *(point to child)* _____ *(repeat solution given).* What MIGHT happen next in the story? I'm going to write all the things that MIGHT happen next on this side

of the board *(point to right side)*. I'm going to put all
of your ideas over here *(point to left side)* and all of
the things that MIGHT happen next here *(point to right
side)*.

   *After the first consequence has been given, follow
with:* That's one thing that MIGHT happen if *(repeat
alternative given)*. Can anyone think of something
different that MIGHT happen if this child *(point to
child)* _____ *(repeat solution)*?

   After a second response is given say: Now we have
two things that might happen. This child MIGHT _____
(repeat consequence given) or he/she might _____ *(repeat
consequence)*.

   *When consequences are no longer offered, change the
question to:* What MIGHT this child *(point to child)* DO if
that child *(point to child)* _____ *(repeat solution)*?

   If not already offered, the next question can be:
What might this child *(point to child)* SAY if that child
(point to child) _____ *(repeat solution)*? He/she MIGHT
SAY _____.

   *Using one solution at a time, elicit all the
consequences that you can before going to a new solution.*

Session 12

Children are presented with the following problem: **Child A is at the water fountain getting a drink. Child B would like to get a drink but child A remains at the fountain**. Use any picture of two children at a water fountain.

The examiner should elicit alternative solutions in the same way as described in the alternative training sessions. Then say: Okay. Let's make up a different kind of story, a story about what MIGHT happen next. Pretend that this child *(point to child)* _____ *(repeat solution given)*. What MIGHT happen next in the story? I'm going to write all the things that MIGHT happen next on this side of the board *(point to right side)*. I'm going to put all of your ideas over here *(point to left side)* and all of the things that MIGHT happen next here *(point to right side)*.

After the first consequence has been given, follow with: That's one thing that MIGHT happen if *(repeat alternative given)*. Can anyone think of something different that MIGHT happen if this child *(point to child)* _____ *(repeat solution)*?

After a second response is given say: Now we have two things that might happen. This child MIGHT _____ *(repeat consequence given)* or he/she might _____ *(repeat consequence).*

When consequences are no longer offered, change the question to: What might this child *(point to child)* DO if that child *(point to child)* _____ *(repeat solution)?*

If not already offered, the next question can be: What might this child *(point to child)* SAY if that child *(point to child)* _____ *(repeat solution)?* He/she MIGHT SAY _____.

Using one solution at a time, elicit all the consequences that you can before going to a new solution.

Session 13

Children are presented with the following problem: **Child A is colouring a picture with crayons and child B would like to colour with him**. Use any picture of two children with one child colouring a picture.

The examiner should elicit alternative solutions in the same way as described in the alternative training sessions. Then say: Okay. Let's make up a different kind of story, a story about what might happen next. Pretend

that this child (point to child) _____ (repeat solution
given). What MIGHT happen next in the story? I'm going to
write all the things that MIGHT happen next on this side
of the board (point to right side). I'm going to put all
of your ideas over here (point to left side) and all of
the things that MIGHT happen next here (point to right
side).

*After the first consequence has been given, follow
with:* That's one thing that MIGHT happen if (repeat
alternative given). Can anyone think of something
different that might happen if this child (point to
child) _____ (repeat solution)?

After a second response is given say: Now we have
two things that might happen. This child MIGHT _____
(repeat consequence given) or he/she might _____ (repeat
consequence).

*When consequences are no longer offered, change the
question to:* What might this child (point to child) DO if
that child (point to child) _____ (repeat solution)?

If not already offered, the next question can be:
What might this child (point to child) SAY if that child
(point to child) _____ (repeat solution)? He/she MIGHT
SAY _____.

Using one solution at a time, elicit all the consequences that you can before going to a new solution.

Appendix E

Sessions: Attention Control Group

The attention control group sessions were as follows:

Session 1

Children participated in a colouring activity that involved colouring a tree, leaves, cutting the leaves out and pasting them on the tree.

Session 2

Children were read a story entitled "I Can Do It Myself" featuring the Sesame Street Muppets. Time was spent discussing the story and relating it to the children's actual experiences. The session ended by having the children draw a picture of something that they would like to do themselves.

Session 3

Session three was taken from a set of teaching pictures entitled "A Trip To The Farm" and recommended for use with preschool children. The set includes 12

teaching pictures and a corresponding resource sheet of activities to be performed with each sheet. Teaching picture #11 entitled "Other Farm Animals" was selected for session three. Included in each resource sheet are a set of questions based on the story and designed to elicit a response from the children (e.g., What is the farmer doing?), rhythmic activity (e.g., making noises of farm animals), and finally reading the children a story based on the picture.

Session 4

Session four involved a lotto game (from Galt toys) entitled "Pair It" in which related pictures must be matched in pairs (e.g., lock and key, hand and glove). Included are four baseboards each with nine pictures on them onto which the picture pair is to be placed. This game was played as a group completing each of the four boards separately.

Session 5

Session five was taken from a set of teaching pictures entitled "My Community" recommended for use with preschool children. The set includes 12 teaching pictures

and a corresponding resource sheet of activities to be performed with each sheet. Teaching picture #10 entitled "A Visit To The Fire Station" was selected for session five. Included are a set of questions based on the story and designed to elicit a response from the children (e.g., What do you think the fireman is telling the boy?), rhythmic activity (e.g., pretending to be a firetruck), and finally a story based on the picture was read to the children.

Session 6

Children were asked to draw and colour a picture of their house and family. This elicited a discussion of each child and their family and home.

Session 7

Children were given a number of materials including construction paper, crayons, glue and decorations, and were asked to follow the teacher's instructions to make an Easter Bunny.

Session 8

Children were involved in colouring a picture of Care Bears.

Session 9

Session nine involved reading nursery rhymes to the children from a book called "My Best Book of Rhymes". Each rhyme was accompanied by a picture illustrating the rhyme. As they were read, children were encouraged to read along with the teacher as much as possible.

Session 10

Teaching picture #8 entitled, "A Visit to the Airport" was selected from the teaching pictures "My Community" as in session five. This session also included a set of questions based on the story and designed to elicit a response from the children (e.g., How many planes do you see?), rhythmic activity (e.g., pretending to be an airplane), and finally, a story based on the picture was read to the children.

<u>**Session 11**</u>

Session 11 was designed to look at the concepts of colours, numbers and fine motor skills. Activities involved putting coloured beads on a string according to the colour and/or number of beads that were required.

<u>**Session 12**</u>

Session twelve involved the children making a collage as a group with the aid of the teacher. A piece of bristol board, several magazines from which to take pictures, and glue were provided.

<u>**Session 13**</u>

During session thirteen each child coloured a different picture taken from a colouring book containing pictures of Easter scenes.