SOCIAL PROBLEM SOLVING:
A COMPARISON OF TWO BRAINSTORMING APPROACHES
WITH SOCIALLY UNSKILLED CHILDREN

by

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SOCIAL PROBLEM SOLVING: A COMPARISON OF TWO BRAINSTORMING APPROACHES WITH SOCIALLY UNSKILLED CHILDREN

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ABSTRACT

In trying to increase children's behavioral adjustment through the implementation of social problem-solving intervention programs, various researchers have found that the process of brainstorming alternatives to social problems has led to an increase in the generation of inappropriate options with no significant decrease in behavioral difficulties. As yet, no research appears specifically to address alternative approaches to the traditional brainstorming process with socially unskilled children.

The purpose of the present study was to compare the relative efficacy of two social problem-solving programs, one which included traditional freewheeling brainstorming and one which incorporated the processes of generating and classifying general strategies into the brainstorming procedure. Subjects were 45 intermediate-aged (grades 4-6), passive and aggressive students selected by their classroom teachers as lacking in social skills. These subjects were assigned to either one of two sixteen-lesson intervention programs or to a no treatment control. Pre- and postprogram measures assessed changes in knowledge of problem-solving steps, generation of alternative strategies, attitudes toward passive, assertive, and aggressive behavior, perceptions of self-efficacy, assertive behavior, and global adjustment.

Children receiving intervention demonstrated superior knowledge of problem-solving steps and generated significantly more passsive and aggressive strategies to social problems when compared to the no treatment controls. There were no statistically reliable differences between the two intervention groups on either of these two measures. Although not tested

statistically, a visual inspection of the data pointed to possible postprogram differences in the proportions of aggressive and passive strategies generated by passive and aggressive subjects in the two intervention groups. The passive and aggressive subjects receiving the problem-solving program with traditional freewheeling brainstorming continued, at posttesting, to generate strategies in relatively the same proportions as at pretest. The passive children receiving the problem-solving program with the alternative brainstorming procedure appeared to increase their proportions of aggressive strategies. To a somewhat lesser degree, the aggressive children in this group appeared to increase their proportions of passive strategies. No statistically reliable pre- to posttest group differences were found on any of the other measures.

Strengths and weaknesses of the study are discussed and implications for future research and practice are presented.

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CHAPTER I

Introduction

In recent years there has been a dramatic increase in research and clinical attention focused on the development of social skills in children (Matson & Ollendick, 1988). Reasons for this increased interest in the area of children's social competence is related to a number of different factors, perhaps two of the most important being the relationship found to exist between poor social skills and peer relationship problems in childhood and between poor social functioning in childhood and adjustment problems later in life (Michelson, Sugai, Wood, & Kazdin, 1983).

Rinn and Markle (1979) point out that, for the most part, children are not referred to mental health professionals because of concern over the negative long-term effects of poor social skills, but rather are referred for problems being experienced in the here-and-now, which may be the precursors of more serious problems to come. In terms of short-term consequences within the school setting, lack of social skills in children has been found to be related to academic and peer relationship difficulties. Cartledge and Milburn (1986) feel that reciprocal relationships exist between social behavior and academic success, and between social skills and peer relationships. Those children displaying good interpersonal skills tend to elicit more positive teacher contact which, in turn, leads to increased academic success. More positive peer interactions lead to increased opportunities for social contact, which further reinforces skill development. Poor social skills have been found to relate to a variety of mental health and adjustment difficulties in childhood. Delinquent adolescents have been found to have situation-specific social skills deficits (Freedman, Rosenthal,

Donahoe, Schlundt, & McFall, 1978). Helsel and Matson (1984) found a significant negative relationship between appropriate social skills and childhood depression, and suggest that those treating childhood depression consider the enhancement of social skills as a treatment option.

Those children with poor social skills also appear to be at risk for later adjustment difficulties. A 15-year follow-up study involving parent and teacher ratings of the behavior of a large-scale sample of school children found behavioral deviation to be related to future criminality (Mitchell & Rosa, 1981). Robins' (1966), in her classic 30-year follow-up investigation of over 500 people who had been referred to a clinic for deviant behavior as children, found a strong relationship between adult psychiatric illness and the number and type of symptoms evident as children. In an 11- to 13-year follow-up study, children who had been identified by mental health workers in the first 3 years of school as being vulnerable were found to appear in disproportionately high numbers on a community psychiatric register (Cowen, Pederson, Babigian, Izzo, & Trost, 1973). The measure most predictive of later inclusion on the register was found to be the sociometric peer measures completed by the grade three classmates (Cowen et al., 1973).

Janes, Hesselbrock, Myers, and Penniman (1979) conducted a follow-up study of the adjustment of young adults who had been previously seen at a child guidance clinic 12 to 15 years earlier. They were interested in determining whether teacher-rated childhood school behavior problems were related to adjustment difficulties in young adulthood. Results of the study indicate that the item most significantly related to adjustment difficulties in adulthood was "fails to get along with other children." This variable was found

to relate to poorer functioning in a number of different areas including educational level, employment record, psychiatric hospitalizations, involvement with the law, and military service record.

Jones (1974) conducted a 4-year follow-up study of children first seen at a clinic for emotional and behavior problems during middle adolescence. He found that the outcomes for children rated as socially isolated at intake were poor, with none attaining the highest level of adaptive functioning. Jones emphasized the predictive usefulness of social competence factors. Measures of adjustment in first to fourth graders, including indices of peer sociability and adaptive assertiveness, have been found to correlate in the expected directions with composite risk and resource factors (Cowen, Lotyczewski, & Weissberg, 1984).

Gronlund and Anderson (1957), in their study of socially accepted, socially rejected, and socially neglected, seventh and eighth graders, shed some light on the personality factors related to social acceptability. They found that socially accepted girls were characterized as being good-looking, tidy, friendly, likeable, enthusiastic, cheerful, and, in general, having positive personality traits. The socially accepted boys were found to have similar traits with some exceptions, the most important of which was "being active in games," a trait important to boys but not to girls. The socially neglected boys and girls were not considered negatively or positively by their peers, and, rather than being disliked, were overlooked. The socially rejected students were rated negatively by peers. Unlike the socially neglected peers, these students attracted attention, but for "not being good-looking," being "unlikeable," "untidy," "restless," and "talkative." These researchers point out the importance of

grooming and social skills at this grade level to help students improve their social acceptance.

Percell, Berwick, and Beigel (1974) found that socially skilled, assertive individuals were more self-accepting than those less assertive, and that females who were assertive were less anxious than less assertive females. These researchers also found that, through assertion training, self-acceptance could be increased and anxiety decreased (Percell et al., 1974).

Recognition of the importance of social competence to the present functioning of the child and the later adjustment of the adult has led to research focusing on the development of effective strategies to prevent social adjustment difficulties and to remediate existing social problems. Underlying these programs is the assumption that social skills are a necessary part of social competence and that training can bring about skill acquisition (Gilbert, 1986).

The contents of social skills programs vary depending on the theoretical orientation of the researchers and the definition of social skills being used. The problem with the definition of social skills is perhaps best stated by Curran (1979) who said "everyone seems to know what good and poor social skills are but no one can define them adequately" (p. 321). Some researchers view social skills very narrowly, leading to specification of clearly-defined behaviors, while others view social skills in a broad and general way, leading to more global objectives. Cartledge and Milburn (1986) define social skills as: "socially acceptable learned behaviors that enable the person to interact with others in ways that elicit positive responses and assist in avoiding negative responses from them" (p. 7).

Rinn and Markle (1979) define social skills as:

> a repertoire of verbal and nonverbal behaviors by which children affect the responses of other individuals (e.g., peers, parents, siblings, and teachers) in the interpersonal context. This repertoire acts as a mechanism through which children influence their environment by obtaining, removing, or avoiding desirable and undesirable outcomes in the social sphere. Further, the extent to which they are successful in obtaining desirable outcomes and avoiding or escaping undesirable ones *without inflicting pain on others* is the extent to which they are considered "socially skilled." (p. 108).

Michelson and Mannarino (1986) summarized what they described as 'core truths' evident when reviewing social skills definitions. These are:

> 1. Social skills are primarily acquired through learning (e.g., observation, modeling, rehearsal, and feedback).
> 2. Social skills comprise specific and discrete verbal and nonverbal behaviors.
> 3. Social skills entail both effective and appropriate initiations and responses.
> 4. Social skills maximize social reinforcement (e.g., positive responses from one's social environment).
> 5. Social skills are interactive by nature and entail both effective and appropriate responses (e.g., reciprocity and timing of specific behaviors).
> 6. Social skill performance is influenced by the characteristics of the participants and environments in which it occurs (i.e., situational specificity). That is, factors such as age, sex, and prestige status of the recipient affects one's social performance.
> 7. Deficits and excesses in social performance can be specified and targeted for intervention.
> In addition to these definitional components of social skills, the directionality of the social deficits need to be considered. This includes both social withdrawal and social aggression. (Michelson & Mannarino, 1986, pp. 375-376)

As yet, no one definition has been generally accepted, which has become an issue in and of itself (Michelson, Sugai, et al., 1983). Curran (1979) points out that the lack of consensus on the definition of social skills is a very complicated problem, yet it is the most basic issue in the field, affecting subject selection, measure selection, program content, and data analysis.

Despite definitional problems in the field, various component processes have been postulated as being important factors in social competency. Trower (1979) describes the basic component processes as perception, cognition, and performance, whereas Cartledge and Milburn (1986) describe social skills as including affective, cognitive, and overt behavioral components. The latter suggest that each of these components are comprised of a number of skills or processes which determine the level of social functioning. This chapter will now use Cartledge and Milburn's model to review some of the skills or processes within each domain in terms of the deficits or excesses exhibited by socially maladjusted children.

Cognitive Processes

Interpersonal Cognitive Problem Solving (ICPS)

Solution Generation

Spivack and Shure (1974) hypothesized that socially maladjusted children are deficient in their ability to generate alternatives to interpersonal problem situations. Research in this area has obtained equivocal results. Deluty (1981), in a study of the alternative-thinking ability of fifth- to seventh-grade aggressive, assertive, and submissive children found that, although the three groups did not differ in the total number of alternative solutions suggested, aggressive children provided significantly more aggressive alternatives and had a higher percentage of total responses that were aggressive, as compared to the assertive or submissive subjects. Submissive children were found to generate a significantly higher proportion of submissive alternatives, as compared to their

aggressive counterparts. Children of all three response styles produced more assertive than submissive response alternatives.

In contrast to Deluty (1981), Richard and Dodge (1982) found, in their study of the problem-solving skills of cooperatively popular, aggressive, and isolated boys at two different age levels (Grades 2-3 and 4-5), that the popular boys generated significantly more solutions than did the aggressive and isolated boys, and that the aggressive and isolated boys did not differ in the number of solutions they generated. Whereas Deluty (1981) included only conflict situations for which the children were required to generate alternative courses of action, Richard and Dodge included both conflict situations and friendship-initiation situations. Subjects were found to produce more alternatives to the friendship-initiation situations than to the conflict situations.

Asarnow and Callan (1985) investigated the social cognitive skills of positive and negative status fourth- and sixth-grade boys. The negative status boys were rated by peers as significantly more aggressive, although within this group was a subgroup who were rated below the mean for their classroom on this variable. Like Richard and Dodge (1982), Asarnow and Callan found that the positive status boys produced significantly more alternative solutions than did the negative status boys. These researchers' findings also parallel those of Deluty (1981) in that the solutions generated by the positive status boys were found to be significantly more assertive, whereas the solutions generated by the negative status boys were found to be significantly more aggressive. The younger boys were found to suggest aggressive solutions that were more intense than those suggested by the older boys. The positive status boys' responses, as compared to those of the negative status boys, showed

significantly more planning that was adaptive and prosocial, and less planning that reflected aggressive or maladaptive intent.

Sequencing and Selection of Solutions

In their study, Richard and Dodge (1982) analyzed the sequencing of the solutions given by popular, aggressive, and isolated boys, and found that all subject groups tended to offer the most effective solution initially, but only the popular boys continued to do so, with aggressive and isolated boys offering subsequent solutions that were either aggressive or ineffectual. Richard and Dodge were also interested in determining whether the three groups differed in their ability to choose the best solution when given alternatives, and whether there were differences between groups with regard to the particular solutions the subjects said they were likely to try. Similar to the findings of Platt, Siegel, and Spivack (1975) with adult subjects, Richard and Dodge did not find group differences in the ability to choose the effective solution. As well, no group differences were found in selecting the effective solution as the one they would try. Richard and Dodge suggest that aggressive or isolated boys may experience behavioral difficulty when the initial solution they try is not effective.

Evaluations of Social Solutions

In order to understand more fully why some children implement appropriate alternatives and others do not, there is not only a need to evaluate the number, type, and sequencing of alternative solutions provided by socially maladjusted and adjusted children, but also to determine if there are differences in how these children evaluate various courses of action. Deluty (1983) studied the cognitive evaluations of aggressive, assertive, and submissive fourth- to sixth-grade children by having subjects rate each response alternative

(assertive, aggressive, and submissive) to conflict situations on seven semantic differential scales. These scales consisted of four "evaluative" dimensions (good-bad, wise-foolish, successful-unsuccessful, kind-cruel) and three "potency" dimensions (strong-weak, brave-cowardly, masculine-feminine). Aggressive children were found to rate aggressive responses more highly than assertive or submissive children on six of the seven dimensions. As well, they rated the assertive responses as significantly less "strong" and "brave" compared to the other two groups of children. When compared to the aggressive and submissive children, the assertive children assessed the assertive alternatives as significantly more "wise," "kind," and "good." In response to questions about which alternative "should be" exhibited, which would make "you feel best," and which would make "other(s) feel best," the aggressive children chose the aggressive alternative to all three questions significantly more often than did the assertive and submissive children. On the other hand, the submissive children chose the "should do" submissive response more often than did the aggressive children.

In Asarnow and Callan's (1985) study, when the negative and positive status boys were asked to rate solutions presented to them in terms of how much they would like to play with someone who responded in that particular way, the negative status boys gave higher ratings to the aggressive alternatives and lower ratings to the positive alternatives than did the positive status boys.

Relationship of ICPS Components

Deluty (1985) attempted to determine the relationship of a number of critical components of interpersonal cognitive problem solving to the aggressiveness, assertiveness, and submissiveness of fourth- to sixth-grade

children. He assessed the children's alternative-thinking ability, their judgments of the response alternatives of passivity, assertion, and aggression, and their consequential thinking. As well, he asked the children to evaluate which alternative they "should do," which would "make them feel best," and which would "make the other person feel the best." His findings indicate that the best predictors of levels of assertiveness, aggressiveness, and submissiveness were combinations of the cognitive mediators under investigation. In particular, the five best predictors of aggressiveness in boys were: high you feel best-aggressive scores, high total number of aggressive alternatives generated, high should do-aggressive scores, low total number of assertive alternatives generated, and favorable evaluative judgments of aggression on the potency dimension (strong-weak, brave-cowardly).

The predictor variables for aggressive girls and assertive and submissive boys and girls showed a pattern reflecting positive ratings of response alternatives consistent with their behavioral classification and negative ratings of other alternatives. The five best predictor variables of submissiveness in boys were: low you feel best-aggressive scores, low total number of aggressive alternatives generated, high should do-submissive scores, favorable evaluative judgments of submission on the potency dimension, and low others feel best-assertive scores.

Deluty suggests that social skills training for aggressive boys should focus on increasing the number of assertive alternatives generated, and on changing positive evaluations of aggressive solutions, particularly their evaluation of aggressive solutions as making them feel best. He proposes that social skills programs for submissive children should address these children's negative

evaluation of assertion as not making others feel good, and should focus on changing their positive views about how strong and brave it is to be submissive.

Faulty Cognitions

Self-Statements

Forman (1980b) was interested in determining if aggressive and nonaggressive children's self-verbalizations differed when presented with aggression-provoking scenerios. To assess this, she presented subjects with descriptions of interpersonal conflict situations and asked them what the protagonist was thinking, and what they thought of the protagonist. The responses to the question of what the protagonist was thinking were coded as irrational or rational, based on Ellis' (1962) identification of major irrational beliefs. The responses to the question of what the subject was thinking of the child in each scene was coded as negative or positive. It was found that the aggressive children produced significantly more irrational statements, judged the children in the scenes in a more negative manner, and made significantly more statements involving aggression in predictions of what the protagonist would do. Further to this, both the aggressive and nonaggressive children considered the consequences of the action taken by the protagonist, but there was evidence that the aggressive children did not feel that the negative consequences would be punishing.

Asarnow and Callan (1985) also tried to determine if there were differences between the negative and positive status boys in the types of self-statements that they made in response to interpersonal situations. The results are difficult to interpret in that, on the prosocial behavior situation, the negative status boys endorsed more negative self-statements, while on the physical

aggression and friendship situations they endorsed fewer negative self-statements as compared to the positive status boys.

Attributional Biases

Nasby, Hayden, and DePaulo (1980) suggested that aggressive children may have "a marked attributional bias to infer hostility whenever they confront interpersonal situations--a bias that not only encompasses their appraisals of aversive (negative) interpersonal situations but that also distorts their appraisals of nonaversive (positive) interpersonal situations" (p. 460). Dodge (1980) found that when aggressive grade 2, 4, and 6 boys were given clear messages about a peer's intentions (hostile or benign) in a negative outcome situation, their reactions were not significantly different from those of nonaggressive boys. If, on the other hand, the intentions of the peer in a negative outcome situation were ambiguous, the aggressive boys were more likely to retaliate aggressively as if the peer had hostile intentions.

To determine the attributions, rather than just the behavior in negative outcome ambiguous situations, Dodge (1980) conducted a study in which these same children were read stories where the action of the peer led to a negative outcome for the subject, but the intention of the peer was ambiguous. The status of the peer was either aggressive or nonaggressive. All subjects attributed more hostile intent to the aggressive peer and, in doing so, more often suggested aggressive retaliation, indicating that reputation is an important factor in terms of other children's attributions of behavior. As compared to the nonaggressive boys, the aggressive boys were more likely to attribute hostile intent to the peer's behavior.

Nasby, Hayden, and DePaulo (1980) tried to determine whether aggressive and unaggressive 10- to 16-year-old boys in residential treatment for emotional disturbance differed in their attributions of hostile action to a variety of interpersonal situations depicted in photographs. They found that content analyses of the labels given to the pictures by the aggressive boys indicated that the aggressive boys tended to more frequently label the situations as depicting negative-dominant affect than did the unaggressive boys. These researchers question whether aggressive boys may be misinterpreting social cues by attributing hostility to situations where none exists.

In a study of aggressive and nonaggressive boys in three grade groups (K-1, 2-3, and 4-5), Dodge and Frame (1982) tried to determine if attributional bias would exist in situations where the negative outcome of the ambiguous behavior of a peer was directed at another peer. These researchers found that, as in Dodge's (1980) study, when the outcome of the story was directed at the subject himself, the aggressive subjects had a bias toward attributing hostile intent to the peer, but, when the outcome of the story was directed at another peer, there were no differences between aggressive and nonaggressive subjects in attribution of hostility. The researchers suggest that this finding indicates that the aggressive boys are "paranoid," in that they have biased attributions only when they are being provoked.

Dodge and Frame (1982) conducted a second study in which they tried to determine if the biased attributions of aggressive boys were the result of selective recall of hostile cues. When shown videotaped interviews of boys making mostly benevolent, mostly hostile, or mostly neutral statements, the aggressive boys did not differ from the nonaggressive subjects in their recall of

hostile cues. Both groups were found to recall more hostile than benevolent statements. Aggressive boys were found to differ significantly from the nonaggressive boys in the number of intrusions into memory. That is, the aggressive boys recalled significantly more statements that were not made. The oldest aggressive boys were similar in this regard to the youngest nonaggressive boys. When given a number of statements, half having occurred in the interview and half having not occurred, the aggressive boys were more likely to make "false positive errors," responding that the statement had occurred when it had not, but were no more likely to produce "false negative errors." Based on the assumption that hostile attributions are "highly available" to children, Dodge and Frame postulate that the intrusions into recall and the false positives generated in the recognition task indicate that aggressive boys "fail to inhibit highly available responses" (p. 634). They feel that this may not be an unreasonable assumption given that their study showed that hostile cues are remembered more easily than benevolent cues by all children.

Dodge and Newman (1981) studied the relationship between response rate and attributional bias in aggressive and nonaggressive boys from three different grade groupings (K-1, 2-3, and 4-5). The subjects were to listen to a number of scenarios and decide, based on available clues, whether the child in question had actually committed the hostile or benevolent act. The subjects could listen to all available information or could guess at any time before they had received all the clues. It was found that the aggressive boys chose to listen to significantly fewer clues than the nonaggressive boys; in fact, the oldest aggressive boys listened to as few as the youngest nonaggressive boys. The aggressive quick responders in the middle and oldest age groups were found to

differ from the aggressive slow responders and the nonaggressive boys in erroneously attributing hostile behavior to the child in the story, despite clues to the contrary. The aggressive slow responders' decisions were not significantly different than those of the nonaggressive boys.

Control Deficiency

Dodge and Frame (1982) link their findings of an inhibition deficit to those of Camp (1977) who found that, on impersonal cognitive tasks, first and second grade aggressive boys showed a pattern of responding characterized by fast reaction times and a failure of covert self-verbalization to inhibit responding. Camp suggests that this control deficiency affects the child's behavior by making it difficult for the child to inhibit first responses on cognitive tasks. She postulates that this linguistic weakness may be related to the child's difficulty inhibiting aggressive responses in social situations. Camp's research led to the development of the Think Aloud program which is aimed at increasing self-verbalization in aggressive children.

Affective Processes

Social Perception

Empathy

Feshbach and Feshbach (1969) studied the relationship between empathy and aggression by asking boys and girls of two different age groups (4-5 year-olds and 6-7 year-olds) to respond to narrated slide picture sequences depicting children in either happy, sad, angry, or fear-provoking situations. The narration included no affective labels, and the subjects were asked how they felt after each sequence. Affective labels which matched the situation were scored

as empathic. These researchers found that, for the younger boys, high empathy scores were associated with higher aggression scores, whereas for the older boys, low empathy scores were associated with higher aggression scores. Feshbach and Feshbach suggest that the positive correlation between the younger boys' high empathy and aggression scores relates to another factor, that of maturational level. No significant differences were found in aggression scores between low or high empathy, younger or older girls. Feshbach and Feshbach postulate that empathy may serve to inhibit aggressive responses or serve to terminate aggressive encounters before the recipient of the aggression is seriously hurt. They indicate that, if more was known about how empathy develops, socialization practices could be utilized that encourage empathic responses in an effort to inhibit aggression.

Role-Taking

Gough (1948), in his theory of psychopathy, describes the psychopath as being pathologically deficient in role-playing abilities. Gough (1948) relates role-taking abilities to self-control in that:

> Learned prohibitions (and all social interdictions must be learned) may be observed by "telling one's self" not to behave in a certain way. Or speech may be editorially "reviewed" as it is emitted, and the inadmissible deleted. Role-playing, or putting one's self in another's position, enables a person to predict the other's behavior. Finally, role-playing ability makes one sensitive in advance to reactions of others; such prescience may then deter or modify the unexpressed action. (p. 363)

The psychopath cannot predict the consequences of his behavior because he cannot evaluate his behavior from another's point of view (Gough, 1948). Gough suggests that, due to role-playing deficiencies, psychopaths are socially maladjusted, and therapy should include training in role-playing.

Chandler (1973) found that, as compared to normal controls, emotionally disturbed and delinquent boys between the ages of 8 and 13 years of age showed a marked deficiency in their ability to take the role of others. He points out that not all of the disturbed or delinquent children evidenced difficulties in this regard. Based on this finding, Chandler (1973) concludes that the concept of egocentrism cannot simply be equated with the more general concept of pathology.

Chandler, Greenspan, and Barenboim (1974) conducted a preintervention assessment of 125 institutionalized emotionally disturbed 8- to 15-year old children to determine their social role-taking ability and referential communication skills. These researchers found that the emotionally disturbed children showed markedly more egocentric thought as evidenced by an inability to distinguish private priveleged information from information available to partially informed others. In terms of referential communication, the disturbed children were found to be significantly deficient in their ability to anticipate the listener's informational needs and to provide the listener with the information necessary to complete the task.

Platt, Spivack, Altman, Altman, and Peizer (1974) studied differences between adolescent psychiatric patients and normal controls on a number of interpersonal problem-solving skills. Included in the skills assessment was a measure of role-taking, which required the subjects to describe a story depicted on cards, from the perspective of each of the characters. Patients were found to differ significantly from the normal controls on this measure. Platt et al. (1974) note that, for adult problem-solving, both role-taking and means-end thinking have been found, in factor analyses, to load on the same factor. They suggest

that an intervention program for behaviorally disturbed adolescents should emphasize the generation of alternatives, the development of means-end thinking, and role-taking.

In a study of the role-taking abilities of delinquent and nondelinquent boys 13- to 17-years old, Rotenberg (1974) distinguished between cognitive role-taking, which he defines as the ability to predict another person's behavior in everyday situations without relating to the person's feelings, and affective role-taking, which he describes as the "behavioral disposition to relieve the distress of others" (p. 180). The cognitive role-taking task required the subjects to guess how their partners would respond to certain situations, with points being scored on the basis of similarity between the subject's responses and the partner's responses. Affective role-taking was measured by the amount of noxious stimulation the subject chose to give a peer in response to errors in learning. The peer was a confederate who made a predetermined number of mistakes and acted as if he had received the noxious stimulation when, in actuality, no noxious stimulation had been given. Rotenberg (1974) found that the delinquent children had significantly higher scores on the affective role-taking measure, reflecting less affective role-taking disposition, but no significant differences were found on the cognitive role-taking measure. Little and Kendall (1979) suggest that Rotenberg's (1974) distinction between affective and cognitive role-taking may be useful, particularly with regard to delinquent behavior.

Behavioral Skills

In recent years, an increasing amount of research has been directed at determining the behavioral correlates of negative peer status (Asher, 1983). Asher (1983), in a review article, emphasizes three aspects of social competence, which he labels as "relevance," "responsiveness," and "process view." Socially competent children, when joining a group, seem to be able to adjust their behavior to the prevailing mode of interaction, respond positively when approached by peers, and seem to understand the importance of a more gradual approach when trying to enter peer groups or establish friendships (Asher, 1983). Unpopular children, on the other hand, tend to be more direct, reflecting less of a process-view of social interactions (Asher, 1983).

Rate of Aggression

Asarnow (1983), in her study of fourth- and sixth-grade children with peer adjustment problems, found that negative status boys showed more playful aggressive behavior such as rough and tumble play, when compared to positive status boys. Similarly, in a study of the behavioral antecedents of social status in 7 and 8 year old boys, Dodge (1983) found that boys who became unpopular and rejected by their peer group displayed significantly higher frequencies of inappropriate play, physical aggression, exclusions of peers, and hostile verbalizations such as insults and threats. When compared to "average" children who were neither most liked nor least liked, the socially rejected children engaged in significantly less social conversation. The popular children, on the other hand, were very similar to the average children, with both groups displaying a high proportion of cooperative play and social conversation, and a low proportion of physical and verbal aggression. The

children who were neglected by their peer group were similar to the rejected children in that, as compared to the average children, they displayed more inappropriate play. Interestingly, the difference between the neglected children and the rejected children was in the rate of aggression, with the neglected children not showing the high rates displayed by the rejected children.

Coie, Dodge, and Coppotelli (1982) were interested in determining peer perceptions of the behaviors associated with social preference at a number of different age levels (grades 3, 5, and 8). Regardless of age level, children associated indirect aggression with low social preference.

Coie and Kupersmidt (1983) formed play groups of fourth grade children and observed these children weekly for six weeks. Each group was comprised of a rejected, a neglected, a popular, and an average status child. The familiar groups were comprised of children from the same classroom and the unfamiliar groups were comprised of children who did not know each other prior to the study. They found that the rejected children displayed the most aversive verbal and physical behavior, while the neglected children displayed the least. Comparison between groups on the physically aversive factor showed popular children and neglected children to be nonaggressive, while average and rejected children were found to be physically aggressive. Although the rejected and average children were equally as aggressive, the children in the unfamiliar and familiar groups blamed the rejected children for starting fights.

Social Approaches

As well as stressing the importance of aggression in the determination of peer social status, Dodge (1983) emphasizes the significance of social approach and termination patterns. He found that the popular children in his

study made social approaches less often, but were approached more often by peers. These children were able to maintain the interaction longer, the interactions were more often coded as positive, and they less frequently ended the interaction. In contrast to this, the children who were to become rejected or neglected started out initiating interaction with peers more frequently than those children who went on to become popular. The interactions were short, as they often met with rebuff, and, over time, they began to initiate less. Dodge postulates that social isolation was not a cause of these children's low status. Rather, social isolation came as a result of the nature of their interactions and their social status.

Summary

Research into differences between socially adjusted and maladjusted children suggests that socially maladjusted children are deficient in a number of different skills. They have been found to generate fewer alternatives to interpersonal conflict situations (Asarnow & Callan, 1985; Richard & Dodge, 1982). Aggressive children have been found to produce proportionately more aggressive solutions than their better-adjusted counterparts, and submissive children have been found to generate proportionately more submissive responses compared to aggressive children (Deluty, 1981). The sequencing of solutions indicates that appropriate solutions are often suggested first, but if further solutions are required, these are often inappropriate or ineffectual (Richard & Dodge, 1982).

Aggressive children evaluate aggressive solutions more positively, and submissive children rate assertive alternatives more negatively, than do socially

skilled assertive children (Deluty, 1983). Deluty (1983) found that, as compared to assertive children, aggressive children perceive aggressive acts as more wise, good, successful, kind, strong, and brave. At the same time, they rate assertive acts as less strong and brave. Submissive children rate assertive alternatives significantly more negatively on three evaluative dimensions, perceiving the assertive behavior as unwise, unkind, and bad. When a number of critical components of interpersonal cognitive problem-solving were compared to determine the best predictors of aggression in boys, aggression was found to relate most strongly to the positive feelings evoked when aggressing, to the large number of aggressive alternatives and the small number of assertive alternatives in their response repertoires, and to their positive evaluations of aggression as strong and brave and the course of action that should be followed (Deluty, 1985). The best predictors of submissiveness in boys included low aggression makes you feel best scores, low numbers of aggressive alternatives in their responses repertoires, high should do submissive scores, high ratings of submission on the potency dimension, and low ratings of assertion as making others feel best (Deluty, 1985).

Aggressive children have been found to produce more irrational statements when confronted with a conflict situation (Forman, 1980b), and to more often attribute hostile intent in negative outcome, ambiguous situations (Dodge, 1980) or in situations in which no hostility exists (Nasby, Hayden, & DePaulo, 1980). No differences in attributions of hostility were found to exist when another peer received the negative outcome (Dodge & Frame, 1982). Aggressive children also have been found to have faulty recollections of situations with intrusions into recall (Dodge & Frame, 1982). Finally, they have

been found to be more likely to attribute hostile intent if they responded quickly without availing themselves of all the possible information (Dodge & Newman, 1981).

In terms of social perceptions, high aggression scores have been related to low empathy scores (Feshbach & Feshbach, 1969). Emotionally disturbed children have been found to be deficient in social role-taking ability (Little & Kendall, 1979) and referential communication skills (Chandler, Greenspan, & Barenboim, 1973). Chandler et al. (1974) stress that emotional disorders are not always associated with developmental delays in the acquisition of role-taking and referential communication skills, and that training in these skills provides no simple answer to a complex problem.

Children with negative sociometric status have been found to demonstrate higher frequencies of physically aggressive behavior (Asarnow, 1983; Dodge, 1983) and verbally aggressive behavior (Dodge, 1983). Differences have been found in social approach patterns, with rejected and neglected children more often approaching peers initially, but with the frequency of these initiations diminishing over time (Dodge, 1983). Socially rejected children have been found to engage in less social conversation (Asarnow, 1983; Dodge, 1983) and more inappropriate play (Dodge, 1983).

CHAPTER II

Intervention Programs

Curran (1979) describes social skills training programs as differing on a number of parameters, so much so that, for research purposes, social skills training programs can not be considered a homogeneous intervention. Programs differ in the length of treatment, varying from 4 sessions to over 30 sessions, and in the types of techniques employed. Programs generally include some, but not all, of a variety of techniques such as instructions with rationale, modeling, prompting, guided rehearsal in a role play format, feedback, reinforcement, practice in the treatment setting, homework, and in vivo practice. Programs vary in format, some providing for individual work, and others providing a group-based format. Differences also exist in the number and training of the people expected to implement the program. Finally, programs differ in content, with some emphasizing discrete behaviors, while others emphasize perceptual factors or cognitive processes.

Urbain and Kendall (1980), in their review of social-cognitive problem-solving interventions, suggest that problem-solving programs can be classified as to response generality. At one extreme, are programs which emphasize the teaching of discrete skills. At the other, are programs which focus on training cognitive strategies. Durlak (1983) categorizes social problem-solving interventions into cognitive, developmental, and task-specific programs based on the theoretical orientations underlying the studies. Under this classification system, cognitive programs are those which are based primarily on the work of Spivack and Shure (1974). Developmental programs are those which consider social perception, including role-taking and social sensitivity, to be of primary

importance. Finally, task-specific programs emphasize the acquisition of discrete behaviors such as assertiveness, decision-making, and communication skills. Durlak's (1983) inclusion of task-specific programs under the broad heading of social problem solving is in direct contrast to other researchers (Michelson, Mannarino, Marchione, Stern, Figueroa, & Beck, 1983) who consider behavioral programs and social problem-solving programs to be two distinctly different training models.

For the purposes of this review, the categories of interpersonal cognitive problem-solving, developmental, and behavioral will be used to differentiate the three different types of social skills intervention programs. Programs involving training in verbally mediated self-control will be included under the heading of cognitive social problem-solving programs. The theoretical orientation of each approach will be reviewed, followed by a description of representative primary prevention programs and remedial programs for socially maladjusted/ behaviorally impaired children.

Interpersonal Cognitive Problem-Solving Programs

Theoretical Orientation

Jahoda (1958) was among the first to relate the process of problem solving to positive mental health. Prior to this, most of the work on problem solving had focused on impersonal, rather than interpersonal, problem-solving tasks. D'Zurilla and Goldfried (1971) reviewed problem-solving theory and research and proposed a model of interpersonal problem solving which delineates various stages in the problem-solving process. They defined problem solving as a process which results in the generation of a variety of "potentially effective" solutions to problem situations and which increases the likelihood of choosing

the most effective alternative from those generated. A solution to a problem is that response pattern which changes the situation so that it is no longer a problem for the individual. At the same time, the solution should maximize positive, and minimize negative, short- and long-term consequences so as to create as few additional personal and social problems as possible. D'Zurilla and Goldfried (1971) distinguish between "problem solving" and "emiting an effective response." Problem solving is a process aimed at producing a potentially effective solution, whereas actual performance of that solution may be affected by other factors such as anxiety, performance deficits, and motivation.

The two basic assumptions emphasized by D'Zurilla and Goldfried (1971) are:

> (a) that ineffectiveness in coping with problematic situations, along with its personal and social consequences, is often a necessary and sufficient condition for an emotional or behavior disorder requiring psychological treatment; and
> (b) that general effectiveness may be most efficiently facilitated by training individuals in general procedures or skills which would allow them to deal independently with the critical problematic situations that confront them in day-to-day living. (p. 109)

The authors suggest that problem-solving training results in more generalized effects than the changes brought about by discrete response training such as assertiveness or relaxation training. D'Zurilla and Goldfried (1971) describe problem solving as a form of self-control training which utilizes the behaviors the individual has under control to manage those which are not so well controlled.

According to D'Zurilla and Goldfried (1971), the problem-solving process can be divided into five stages, although they believe that the process rarely

proceeds in a stage-sequential manner. Rather, the operations interact so that developments in later stages may lead to a reformulation of earlier operations. During the first stage, that of general orientation, an attitude conducive to effective problem solving is set. This attitude reflects the acceptance of problem situations as a normal occurrence in life, the existence of feelings of self-efficacy regarding the ability to handle most problem situations, the recognition of specific problem situations as they arise, and the maintenance of an "inhibitory set" preventing impulsive responding or passive avoidance. They stress the importance of stopping to think so as to allow time to select the most appropriate course of action.

D'Zurilla and Goldfried's (1971) second stage is that of problem definition and formulation. According to these authors, the problem must be defined in specific terms, with all facts being considered and no details being overlooked. The problem solver must decide on what is relevant and what is not, gather further information if needed, delineate sources of conflict, and determine the primary goal. The groundwork is now laid for the problem solver to begin the third task, which is the generation of alternative solutions. D'Zurilla and Goldfried (1971) credit Osborn (1963) for developing the "brainstorming" process, used originally in groups to facilitate the generation of ideas, and used in the problem-solving process to facilitate the generation of alternatives to specific problem situations. They outline the four rules of this process:

> (a) *Criticism is ruled out.* Adverse judgment of ideas must be withheld until later. (b) *"Free-wheeling" is welcomed.* The wilder the idea, the better; it is easier to tame down than to think up. (c) *Quantity is wanted.* The greater the number of ideas, the greater the likelihood of useful ideas. (d) *Combination and improvement are sought.* In addition to contributing ideas of their own, participants should suggest how ideas of others can be

> turned into better ideas, or how two or more ideas can be joined into still another idea.
> (D'Zurilla and Goldfried, 1971, p.114)

D'Zurilla and Goldfried (1971) state that the two underlying principles of this process are "deferment of judgment" and "quantity breeds quality." The first assumption is that, if evaluation of the alternatives is delayed, there is a greater likelihood that the individual will produce a larger number of effective solutions. The second assumption is that the greater the number of alternatives the individual generates, the greater the likelihood that the most effective solution will be produced. The procedures involved in the brainstorming process are aimed at facilitating the production of the widest possible variety of alternative solutions to problem situations.

Relevant to the present research is D'Zurilla and Goldfried's (1971) discussion of the level of specificity of alternative responses. They suggest that response alternatives must be clearly and concretely, rather than vaguely or generally, stated. One option is to have each alternative described in terms of the specific behaviors involved, rather than in terms of general strategies. The authors suggest that a disadvantage of this approach is that it is very time-consuming. Another approach would be to begin brainstorming by producing general strategies, decide on the most effective strategy, and then go back and brainstorm the possible specific alternative courses of action consistent with the chosen strategy. The advantage of this approach, according to D'Zurilla and Goldfried (1971), is that, with an overview of general strategies, the problem solver is less likely to become mired in the same type or types of specific solutions. This becomes a particular problem if the solutions generally chosen are inappropriate alternatives. As mentioned, socially maladjusted aggressive

children often generate a disproportionate number of aggressive solutions to social problems, reflecting an over-dependency on aggressive strategies to the exclusion of other more appropriate strategies. Submissive children, on the other hand, tend to produce proportionately more submissive responses than do aggressive children. Both groups tend to give the most effective solution initially, but go on to produce more solutions in keeping with their response style.

The fourth of D'Zurilla and Goldfried's (1971) problem-solving stages is that of decision making. Because the problem solver has produced a number of alternatives to the problem situation during the generation of alternatives stage, the task is now to choose the most appropriate possible solution. They refer to the use of utility theory which involves an appraisal of the likelihood that a given alternative will have a given result together with an evaluation of the various expected consequences. A problem solver's own values help determine the utility of a certain decision. Similarly, an evaluation of the consequences involves the problem solver's subjective estimate of the payoff matrix, which includes personal and social, short-term and long-term, consequences. The last step of this stage is selecting the alternative which is considered to be the best of those generated. Each alternative must be compared to all the other alternatives, taking into account the expected consequences of that course of action, as well as the probability that the expected outcomes will actually occur. When general strategies are evaluated prior to the generation of specific alternative means for implementation of the chosen strategy, the criterion is the probability for effective resolution of the main problem or problems. Once the

general strategy has been chosen, specific behaviors are evaluated in terms of their effectiveness in strategy implementation.

The last stage in D'Zurilla and Goldfried's (1971) problem-solving process is that of verification. Verification occurs after the chosen alternative has been implemented, and involves obtaining feedback on the actual consequences of the decision to verify whether it was the optimal choice. If the decision had the desired outcome, then the problem-solving process is complete. If not, then the problem solver resumes the process by redefining the problem, generating other alternatives, and/or selecting a different course of action. D'Zurilla and Goldfried (1971) feel that, given the complexity of social problems, an individual cannot always expect to choose the best solution to a problem. They do feel, though, that use of the foregoing problem-solving process is likely to result in increased effectiveness in dealing with real-life problems.

Spivack, Platt, and Shure (1976) have been major contributors to theory and research on the development of social problem-solving skills in children. Rather than describing the stages in the process of problem solving, Spivack, Platt, and Shure (1976) proposed a theory of interpersonal cognitive problem solving which postulates the existence of a number of ICPS skills which mediate social adjustment. Improvement in these processes is expected to enhance current behavioral functioning and to prevent adjustment problems in the future. These authors suggest that the relative importance of each of the skills may change depending upon age. The first skill they delineate can best be equated with those skills D'Zurilla and Goldfried (1971) describe as occurring during the stage of general orientation. The skill involves an appreciation of the potential for problems occurring when individuals interact,

an ability to sense when an interpersonal problem exists, and a willingness to examine one's own behavior in such situations.

The second ICPS skill that Spivack, Platt, and Shure (1976) outline is the ability to generate alternatives to social problems. They note the similarity between this skill and that of brainstorming, which involves the unrestricted production of an assortment of potential solutions, and the withholding of evaluation or criticism. Of significance to the present research is Spivack, Platt, and Shure's (1976) statement regarding the expression of this skill. They state, "The individual manifests this skill when he draws from a repertoire of ideas that are not merely variations on a single theme but rather different categories of solutions to a given problem" (Spivack, Platt, & Shure, 1976, p. 5). Whereas Spivack, Platt, and Shure (1976) describe the underlying skill, D'Zurilla and Goldfried (1971) suggest a modification of the brainstorming process itself to include the generation of strategies so that problem solvers do not get stuck generating "variations on a single theme."

Spivack, Platt, and Shure (1976) describe their third ICPS skill as means-ends thinking, which includes an ability to plan out the steps necessary for solution implementation, an awareness of possible obstacles, and an ability to develop alternate strategies should obstacles occur. This skill also involves an awareness of how time-consuming and complicated the resolution of social problems may be, and an ability to perceive others' reactions to the chosen solution.

Spivack, Platt, and Shure's (1976) fourth skill is that of consequential thinking. An important aspect of this skill is whether or not the problem solver spontaneously considers the personal and social outcomes of the various

courses of action. If consequences are considered before action is taken, then the skill is reflected in the ability to generate possible consequences to each alternative course of action.

The last skill postulated by Spivack, Platt, and Shure (1976) is an understanding of motivation, both personal and social. This is an ability to see how one's feelings and actions connect to others' past behavior, and, in turn, affect one's own and others' future feelings and actions.

Spivack, Platt, and Shure (1976) believe that these skills are not merely reflective of general intelligence, nor are they personality traits, rather, they develop through social experience. Of primary importance to the development of these skills in the child is the degree to which childrearers implement these skills in resolving family problems, particularly those problems which involve the child.

Primary Prevention Programs

Spivack and Shure (1974) developed a preschool training program which they felt would improve the behavioral adjustment of young children by increasing their awareness of interpersonal problems, alternative solutions to these problems, and possible consequences of various courses of action. The program consists of 46 formal lessons presented daily in a group format over the course of nine to ten weeks. A training script is provided, and, initially, lessons last only five minutes. Within the first three to four weeks, lessons are extended to twenty minutes. The program is comprised of two main components, prerequisite skills and problem-solving skills. The prerequisite skills taught are those linguistic and cognitive concepts which are felt to provide the foundation for the development of problem-solving skills. The program

devotes 31 lessons to establishing the prerequisite skills, and the remaining 15 lessons to direct instruction on the problem-solving process.

The problem-solving section is divided into three parts: alternative solutions, consequential thinking, and solutions and consequences pairing. In terms of generation of alternative solutions, the children are encouraged to suggest as many different alternatives to the given problem as possible. Spivack and Shure (1974) differentiate between enumerations, which are said to be variations of one solution, and solutions, which are actually different ways of handling the situation. In order to prevent the children from only presenting variations of one strategy, the teacher is instructed to classify the enumerations under a common heading and ask the children to think of different ideas. Prompts are used to help elicit verbal means of resolving problems. It should be noted that these instructions represent a major departure from the two main principles of the generation of alternatives as postulated by D'Zurilla and Goldfried (1971), that is, quantity breeds quality and the initial deferment of judgment. In the consequential thinking section of the program, enumerations of consequences are handled similarly in that enumerations are classified and different consequences are elicited.

The program ends with a number of lessons which focus on the pairing of solutions and consequences. There is no reference made to specific criteria with which to judge the various consequences, although the concept of fairness is taught as a prerequisite skill. According to D'Zurilla and Goldfried's (1971) problem-solving theory, the utility of a decision is based on the problem solver's own values. Spivack and Shure's (1974) program does not attempt to address the issue of values directly, rather it is left to the children to explain to each other

why certain solutions with certain consequences are "good ideas" and others are not.

In order to investigate the efficacy of their program, Spivack and Shure conducted two preliminary studies and a larger, longer-term evaluative study. The first study found an improvement in the trained subjects' problem-solving ability with a significant number of these children showing improved behavioral adjustment scores. The second study found that the treatment group made significant gains in conceptualizing alternative solutions and in cause-and-effect thinking. In both the first and second studies, the children who improved most in problem-solving ability showed the most improvement behaviorally. In the third study, the treatment groups showed an improved ability to generate alternative solutions, with impulsive and inhibited children showing more improvement than adjusted children. Children receiving the training decreased significantly in their choice of aggressive behaviors as solutions to problems, the greatest improvement being shown by the impulsive children. As well as improving their alternative-thinking ability, the children receiving the program improved significantly in consequential-thinking and cause-and-effect thinking. The program was found to produce behavioral improvement in both impulsive and inhibited children, and this improvement was most strongly related to improvements in alternative thinking. Behavioral adjustment gains were maintained at the time of a six month follow-up. Spivack and Shure (1974) feel that the research data support their theory that behavioral adjustment is mediated by problem-solving ability.

Vaughn and Ridley (1983) studied the effects of an ICPS program consisting of 50 sessions, on the behavior of preschool-aged children in an

open classroom setting. The program was comprised of 140 lessons, with a number of lessons being taught each session. The core components of the program consisted of language concepts, social perception, goal identification, empathy, alternative thinking, consequential thinking, procedural thinking, and integration of skills. Each subject was observed in the classroom prior to, and after, training, and behavior was coded as positive or negative, verbal or nonverbal, and as directed at an adult or a peer. Treatment resulted in increased frequency of positive verbal and nonverbal peer interactions, although there were no significant decreases in negative verbal or nonverbal peer or adult interactions. No pre- and post-training problem-solving measures were administered, so it is impossible to determine if increased adjustment was directly attributable to increased problem-solving ability.

Pedro-Carroll and Cowen (1985) developed an intervention program to help fourth-, fifth-, and sixth-grade children of divorce cope with, and adjust to, parental divorce. The program consisted of 10 sessions and included an affective component, a cognitive skill-building component, and an anger management component. The affective component focused on the expression of feelings, particularly those related to divorce. The cognitive component included instruction in problem-solving, and divorce-related situations were role played. The children were taught to distinguish between problems they could solve and those over which they had no control. During the lessons on anger management, the children discussed appropriate ways to deal with anger. The group receiving the program improved significantly more than the controls on 8 of the 10 teacher ratings of classroom adjustment and competence behaviors. They were also rated as significantly more adjusted on a parent evaluation form

developed for the study. As the researchers note, further research is needed to ascertain the relationship of the various program components to increased adjustment.

Poitras-Martin and Stone (1977) trained grade-six children in problem-solving skills using either videotaped modelling and practice sessions, or film and discussion sessions. The videotape group was found to generate significantly more alternative solutions to problem situations, while all groups (including the control group) had significantly higher problem definition scores and significantly lower goal selection scores at follow-up than at the time of posttesting. No adjustment measures were administered, making it impossible to determine if increased alternative-thinking ability led to increased adjustment.

Like Poitras-Martin and Stone (1977), McClure, Chinsky, and Larcen (1978) were interested in assessing the relative effectiveness of different problem-solving training techniques. McClure et al. (1978) evaluated the use of video modeling tapes, tapes plus discussion, and tapes plus role play as compared to no treatment, in terms of problem-solving performance, dyad interaction, friendship club interaction, and locus of control. The discussion group was found to generate more solutions than the video group, while the role-play group's alternatives were significantly more effective than the control group's. Effectiveness was evaluated by raters who assessed the degree to which positive consequences were maximized and negative consequences were minimized. Dyad interaction did not reflect improved problem-solving skills. Group differences were found in the friendship club interaction. This analogue measure assessed group problem solving in two ways. First, the groups were required to generate as many answers to the given problems as

possible. Second, the groups were confronted with problems in the setting itself, such as too few chairs and too few role cards. On this measure, the role-play group proved to be superior in number of alternatives generated, and in planning solution implementation. Control subjects in the fourth grade were found to be significantly more external than any of the fourth-grade experimental groups on a measure of locus of control. The experimenters caution that the improvements in problem solving in hypothetical situations do not necessarily mean increased adjustment in real-life problem situations.

Olexa and Forman (1984) were interested in determining whether operant procedures used in conjunction with problem-solving training would enhance the acquisition of skills. They implemented either eight sessions of problem-solving training, problem-solving plus response cost procedures, response cost alone, or no treatment with economically disadvantaged urban fourth- and fifth-grade children. The children receiving the problem-solving and the combined treatment improved significantly more than the response cost group or the controls on alternative thinking ability. The problem-solving group's consequential thinking scores were better than the response cost and control groups' scores, and the combined treatment group's consequential thinking scores were better than the response cost group's scores. Teacher ratings of student behavior indicated that the groups receiving treatment had not changed over time, and behavioral observations showed no improvement in behavior on a number of factors. In fact, the problem-solving group initially rated as higher on the aggression/manipulation/resistance factor, was significantly higher than the other groups on this factor at the time of posttesting. Olexa and Forman suggest that the problem-solving process may have led to an increase in

aggressive alternatives because the children either lacked other more socially appropriate responses or did not consider the consequences of aggression as punishing. Of significance is the fact that the combined treatment group who received response cost consequences for inappropriate classroom behavior did not increase on the aggression factor. These researchers suggest that future programs emphasize and reinforce generation of nonaggressive solutions to interpersonal problems.

Weissberg, Gesten, Rapkin, et al. (1981) were interested in determining whether an ICPS program, based on the 17-lesson training package by Gesten, Flores de Apodaca, Rains, Weissberg, and Cowen (1979) and extended to 52 lessons, taught to inner-city, low-SES black grade three children and suburban, white middle-SES grade three children, would enhance the trained subjects' social problem-solving skills as well as their behavioral adjustment. Based on Spivack and Shure's (1974) findings, these researchers hypothesized that adjustment gains would be related to increased problem-solving ability. They found that children receiving the program generated significantly more alternatives to problem situations, and, paralleling the finding of McClure et al. (1978), that trained children produced more effective solutions than untrained controls. Trained children also showed improved performance on the means-end problem-solving test. On two postprogram-only measures, the problem identification/consequences test and the behavioral problem-solving test, trained children's scores exceeded those of the controls.

Similar to the finding by Elardo and Caldwell (1979), Weissberg, Gesten, Rapkin, et al.'s (1981) program did not enhance social-role-taking ability. As well, no improvement was found on measures of trait anxiety, self-esteem, or

sociometric status. In terms of adjustment measures, the trained suburban children improved more than controls on all but two of the nine teacher-rated variables. Adjustment gains, though, were not found to be related to ICPS skill acquisition. Urban children, on the other hand, did not fair as well. Their scores were found to decrease on five of these variables, indicating that the program may have affected these children adversely. The experimenters point out that the brainstorming process led to the suburban children producing creative alternatives, while the urban children generated aggressive alternatives, which, in turn, had repercussions in terms of discipline in the classroom. These observations prompted revisions in the curriculum to include methods to restrict aggressive solutions and encourage more appropriate alternatives.

In this revised program, Weissberg, Gesten, Liebenstein, Doherty Schmid, and Hutton (1980) tried to retain both main principles of the generation of alternatives. The children were taught, as an explicitly stated problem-solving step, to think of as many solutions as possible, and program instructors were encouraged to defer judgment of the alternatives presented. At the same time, these authors suggested that, if three variations of the same alternative were given, then these solution variants should be categorized and different solutions should be elicited. If program instructors found that children were producing a disproportionately large number of aggressive solutions, it was suggested that they accept only one such solution and thereafter limit the production of aggressive alternatives. Weissberg et al.'s (1980) suggestions are, in this way, similar to Spivack and Shure's (1974) . Both programs suggest limiting, by classifying and redirecting, the repetitions of variations of one strategy.

In the revised curriculum, Weissberg et al. (1980) encouraged the development of consequential thinking by having the children reflect on three questions. They were asked what would happen if a certain solution was tried, whether this was a consequence they would like to have happen, and whether the solution was good. The program introduced three additional criteria with which to evaluate given solutions, that is, whether anyone would be unhappy, whether the goal would be reached, and whether there was a better option available. As aggression may be effective in terms of short-term consequences, the long-term consequences of aggressive solutions were stressed. Other than discussion of the negative long-term consequences of aggression, the program did not focus on changing aggressive children's overly-positive evaluations of aggression. In keeping with Spivack, Platt, and Shure's (1976) view regarding the underlying problem-solving skills which mediate adjustment, Weissberg et al. (1980) encouraged the development of not only alternative-thinking ability and consequential thinking, but means-end thinking as well. Children were required to sequence the specific steps necessary to carry out their plan.

In a follow-up study, Weissberg, Gesten, Carnrike, et al. (1981) investigated the effects of this revised curriculum (Weissberg, Gesten, Liebenstein, Doherty Schmid, & Hutton, 1980) on the social problem-solving ability and behavioral adjustment of second- to fourth-grade urban and suburban children. The program was found to positively affect alternative-thinking ability and solution effectiveness on a problem-solving test, and number of solutions and variants offered on a simulated behavioral problem-solving test. Program children improved on five out of ten teacher-rated behavioral adjustment variables, but no group differences were found on peer

sociometric ratings. Whereas other researchers were either unable to produce increases in behavioral adjustment through ICPS training, or training was not beneficial to a large portion of the sample (cf. Weissberg, Gesten, Rapkin, et al., 1981), these researchers were successful in affecting behavioral change. This change, though, was again found to be unrelated to increases in social problem-solving skills. Given Spivack and Shure's (1974) findings of a relationship between interpersonal problem-solving skills and behavioral adjustment, and subsequent failures to find similar results, the exact nature of the critical factors in this relationship remains in question.

Remedial Programs

In a study by Giebink, Stover, and Fahl (1968), six emotionally disturbed 10- to 12-year-old boys in residential treatment were taught appropriate alternative solutions to frustrating situations occurring at the treatment centre by the use of a board game format. Due to the small sample size, inferential statistics were not employed, but the results did indicate that the boys were able to verbalize an increased number of appropriate alternatives, which also reflected a decrease in the number of inappropriate alternatives. Behavioral observations of the boys in the frustrating situations showed an increase in adaptive responses, although change was not as great as might be expected from the increase in verbalized responses. The experimenters point out that knowledge of a response does not guarantee that it will be performed.

In a study of the effects of teacher instructions on the behavior of aggressive preschoolers, Zahavi and Asher (1978) prepared a script emphasizing three main concepts: the short-term consequences of aggression (hurts others), the long-term consequences of aggression (engenders

resentment), and alternatives to aggression (sharing, taking turns, and playing together). Eight aggressive preschoolers were instructed individually on the three concepts by the day care teacher who attempted to get the child to formulate the ideas. Pre- and post-treatment behavioral observations indicated that the trained children became significantly less aggressive and significantly more prosocial. These results were maintained at a 2-week follow-up assessment.

Yu, Harris, Solovitz, and Franklin (1986) studied the effects of Weissberg et al.'s (1980) Rochester Social Problem Solving Program on the problem-solving ability and behavioral adjustment of 7- to 12-year-old outpatients in a psychiatric clinic. Like Weissberg et al. (1980), they also attempted to determine if gains in problem solving were related to behavioral adjustment gains. Two interesting features of this study are the inclusion of a parent group component and the use of a control group which received a range of therapeutic interventions. As compared to the controls, the children receiving social problem-solving training generated more solutions and were seen by parents as evidencing less externalizing psychopathology such as aggression or delinquency. No relationship was found between change-scores on the social problem-solving measure and the behavioral measure.

Goodwin and Mahoney (1975) conducted an exploratory study in which they investigated the effects of videotaped modeling of, and coaching and practice in, coping self-statements on the behavior of three hyperactive impulsive 6- to 11-year-old boys placed in a situation of being verbally assaulted. Due to methodological limitations such as the lack of a control group, the results were not analyzed statistically. The subjects were found to

improve, though, in ability to cope with the taunting after they had rehearsed coping self-statements, an improvement that was not noted after they had only observed a videotaped model. Subjects were also found to be less disruptive in the classroom following training.

Kendall and Finch (1976) utilized a combination of verbal self-instructions and response cost procedures to reduce a 9-year-old impulsive boy's inappropriate switching to new activities, rules, or topics of conversation without completing what had been started. This led them to conduct a follow-up group comparison study (Kendall & Finch, 1978) employing a clinical sample of emotionally disturbed children who had been assessed as being impulsive. The treatment group received training in verbal self-instructions that related to impersonal cognitive tasks and response cost procedures contingent on errors on these tasks. When compared to an attention control group of impulsive children, the treatment group significantly increased their latency and decreased their error rate on the cognitive tasks, and, at follow-up, were rated by teachers as being less impulsive. Locus of conflict ratings by teachers and unit personnel, and self-report measures of impulsivity did not change from pre- to posttesting. The researchers suggest that, had the verbal self-instructions related to interpersonal situations, generalization to other settings would more likely have been facilitated.

Camp, Blom, Hebert, and van Doorninck (1977) used a social and cognitive skills training program in an effort to enhance self-control in aggressive boys 6 to 8 years of age. Development of the "Think Aloud" program was based on the notion that verbal mediation ability is a key factor in both cognitive and social problem-solving. As noted, Camp (1977) found that first-

and second-grade aggressive boys tend not to use verbal mediation when situationally appropriate, and, if used at all, this activity fails to show control over behavior. Camp et al. (1977) state that poor school achievement and aggressive behavior may be a result of impulsivity and poor response inhibition. Camp et al.'s (1977) program integrated the approach of Meichenbaum and Goodman (1971) in teaching the use of self-instructional statements in the completion of impersonal problem-solving tasks, with Spivack and Shure's (1974) approach of teaching the use of verbalization of alternative solutions and consequences in social problem-solving situations.

At posttest, children who had received training differed from aggressive controls on some of the measures of impersonal problem solving, including the WISC-R mazes, Kagan's Matching Familiar Figures Test reaction time, and impulsivity scores. In terms of interpersonal problem-solving, the aggressive experimental group was found to produce significantly more solutions to problems than the aggressive controls or normal controls. The aggressive experimental group gave a significantly greater proportion of aggressive solutions to total number of solutions than either of the other groups. Positive gains in the number of solutions offered, therefore, appeared to be offset by the generation of proportionately more aggressive solutions. No posttest differences between the aggressive experimental subjects and the aggressive controls were found on teacher ratings of aggression, with both groups showing improvement over pretest. Group differences were found on the teacher-rated low need achievement scale. The aggressive experimental group improved significantly more than the aggressive controls, which reflects an improvement

in motivation and attitude in terms of carrying out difficult academic tasks and doing well in school.

Camp et al. (1977) suggest that the program could be considered to have negatively affected the children in the experimental group in that they ended up producing proportionately more aggressive solutions than either of the control groups. These researchers state that when aggressive solutions were suggested, these, as well as nonaggressive solutions, were considered with regard to the possible consequences without being immediately labelled "bad." They suggested that improvements to the program should include an added emphasis on the possible negative consequences of the aggressive alternatives generated.

Camp and Bash (1981) designed a revised problem-solving program which attempted to limit the variations of aggressive solutions by improving on the evaluations of both solutions and consequences. This program introduces multiple response tasks by first instructing the children on the differences between repetitive and nonrepetitive responses. Repetitive responses are defined as identical responses which have been reworded, or responses which differ in only minor ways. Nonrepetitive responses are defined as those which represent totally different concepts. Program instructions suggest that attempts be made to elicit nonrepetitive responses. Social cue cards are introduced to encourage generalization. These cards represent 14 different categories of alternatives, including "act," "don't," "earn," "favor," "give," "hurt," "ignore," "please," "share," "tell," "trade," "trick," "turns," and "wait." For each nonrepetitive suggestion, the children are given the appropriate card. If a new solution category is suggested, then a blank card is given.

As with Spivack and Shure's (1974) program, Camp and Bash (1981) also deviate from the principles of deferment of judgment and quantity breeds quality in an effort to limit the possible perseveration on a single theme. In giving the children social cue cards depicting general strategies, these researchers are helping the children to be able to categorize solutions. This is in keeping with D'Zurilla and Goldfried's (1971) suggestion that general strategies be considered. Camp and Bash (1981), however, do not take the next step of having the children articulate the strategies prior to deciding on more specific means.

In terms of the evaluation of given alternatives, Camp and Bash (1981) feel that it is important to be explicit in teaching the criteria with which to evaluate options. They state that this is particularly important with aggressive children who may evaluate aggressive or destructive solutions positively on the basis of effectiveness alone. The four criteria introduced are: safety, fairness, the feelings evoked in self and others, and the effectiveness in solving the problem without producing further problems. They do not specifically address the issue of the positive evaluations aggressive children have of aggressive solutions. The revised Think Aloud program was compared to a self-esteem building program and the results indicate that aggressive boys having received the Think Aloud program thought of significantly more solutions on an interpersonal problem-solving test than did aggressive boys having received the self-esteem building program. Unfortunately, as with the previous version of the program, the aggressive boys who received the Think Aloud produced a significantly higher percentage of aggressive alternatives as compared to those who received the self-esteem building program.

Forman (1980a) compared the efficacy of cognitive restructuring, response cost procedures, and a placebo control condition in reducing the aggressive behavior of 8- to 11- year-old aggressive children. As well as discussing thoughts which precede angry feelings and thinking of possible alternative thoughts, children in the cognitive restructuring program were asked to objectively describe anger-provoking situations, to consider the negative consequences of aggression and the positive consequences of more appropriate action, to take the perspective of the other person in the situation, to "own" their behavior and reactions, and to reinforce themselves verbally for socially acceptable behavior. The children receiving the response-cost procedures had time deducted from an activity time by the teacher for each occurrence of an aggressive act, while the placebo controls received sessions of reading tutoring. Both training programs were found to reduce aggressive behavior in comparison with the control program. The response-cost procedure was found to effect more change than the cognitive restructuring procedure on the number of incidents of aggression as rated by the classroom teachers. Forman (1980a) suggests that the teachers of the children of the response-cost group were more actively involved, in that they monitored aggression over the course of the study. Such monitoring may have led to biased ratings on the measures they completed.

Evaluation of Cognitive Programs

In Durlak's (1983) review of social problem-solving studies, he concludes that there is clear evidence that social skills training can enhance children's problem-solving skills. An assortment of problem-solving treatment approaches have been found to change children's social problem-solving abilities

(Pellegrini & Urbain, 1985). Children of varying ages and degrees of social adjustment within a wide IQ range have been found to have improved problem-solving skills following training with programs that differ in length, in format (group vs individual), in the training of the program instructor (teacher vs researcher), and in the actual content of the program materials.

Durlak (1983) questions whether improved problem-solving ability impacts behavioral adjustment. Some studies which found improvement on problem-solving measures failed to include adjustment measures (Poitras-Martin & Stone, 1977), whereas others which found post-program improvements on behavioral measures failed to administer problem-solving tests (Pedro-Carroll & Cowen, 1985; Vaughn & Ridley, 1983; Zahavi & Asher, 1978). Other studies did not obtain improvements on various measures of adjustment (Camp et al., 1977; Kendall & Finch, 1978; McClure, Chinsky, & Larcen, 1978; Olexa & Forman, 1984). Still other studies which obtained improved adjustment scores found these gains to be unrelated to increased problem-solving ability (Weissberg, Gesten, Carnrike, et al., 1981; Weissberg, Gesten, Rapkin, et al., 1981; Yu, Harris, Solovitz, & Franklin, 1986).

Pellegrini and Urbain (1985), on the other hand, state that they are encouraged by the evidence linking the behavioral gains of socially maladjusted children to cognitive problem-solving skill acquistition. Despite their optimism about ICPS training, Pellegrini and Urbain (1985) feel that the utility of such programs has yet to be proven.

Developmental Programs

Theoretical Orientation

Durlak (1983) identifies developmental programs as those which consider role taking skills or social perception to be of primary importance in terms of interpersonal adjustment. The assumption is that, to relate appropriately, the individual must be able to interpret the behavior of others, which requires social sensitivity and the ability to take another's perspective in order to understand the emotions and intentions involved in the other person's actions. The work of Flavell (1963, 1968) on the development of role-taking has stimulated research in this field. Flavell (1968) credits Mead, Piaget, and Vygotsky with providing the theoretical foundation for his research on the acquisition of role-taking skills in childhood. Flavell (1968) postulates that egocentric communication precedes nonegocentric communication developmentally. Further, he claims that the degree to which the speaker recodes the initial private coding of the message to take into account the listener's perspective will determine whether the communication is ineffective and egocentric or effective and nonegocentric. The child is hypothesized to become progressively less egocentric through social interaction, particulary conflict situations with peers, which require the child to reevaluate his or her perceptions of situations based on the presentation of the perceptions of others (Flavell, 1963). Chandler (1973) suggests that delays in the attainment of social perspective-taking skills are associated with the development of socially deviant behavior. Developmental programs, therefore, are aimed at teaching role-taking skills in an effort to enhance social adjustment.

Primary Prevention Programs

Elardo and Caldwell (1979) implemented, and studied the effects of, Project Aware, a social skills program for children in middle childhood (9- and 10-year-olds) which endeavors to promote perspective-taking and social problem-solving. Pre-and post-measures consisted of a role-taking test, a story alternatives test, and the Devereux Elementary School Behavior Rating Scale. Experimental subjects were found to improve on a number of factors of the Devereux including external reliance, disrespect-defiance, impatience, and creative-initiative, and to generate more alternatives to one of the story situations presented. No differences were found on the role-taking test.

Iannotti (1978) investigated the differential effects of role-taking training and role-switching training on the social behavior of kindergarten and third-grade boys as measured by tests of empathy, altruism, and aggression. In the role-taking procedure, each child assumed a role in a skit and explored the possible thoughts and feelings of the character they assumed. In the role-switching procedure, the same skits were used, but the children changed roles so that, in every session, all children assumed at least five roles. The same questions were asked as after the role-taking group, with the addition of questions relating to the switching of roles. Both training procedures were found to increase role-taking ability, but to have no effect on empathy or aggression scores. Significant effects were found on the altruism scores of the younger children receiving either type of training. The prediction that role taking would increase empathy which, in turn, would reduce aggression was not substantiated in this study.

Remedial Programs

As a pre-program measure, Chandler (1973) assessed the perspective-taking skills of 45 delinquent and 45 nondelinquent 11- to 13-year-old boys and found the delinquent boys to be significantly more egocentric, as demonstrated by a lack of awareness of the limits of other people's knowledge about certain situations as compared to their own. Of the delinquent subjects, one third were involved in developing skits about children their own age with the requirements that each group member have a role, that these roles be changed so that each person had a turn in every role, and that video recordings of the skits be replayed for the group. One third were involved in making films without the role-taking component, and one third received no treatment. The children who received the perspective-taking training were found to be significantly less egocentric than the placebo and control groups on the role-taking test and, at the time of the 18-month follow-up, to have become involved in significantly fewer delinquent activities than the combined placebo and control groups.

Chandler, Greenspan, and Barenboim (1974) compared role-taking training and referential communication training on the role-taking ability and the referential communication skills of institutionalized emotionally disturbed 8- to 15-year-old children who were deficient in both role-taking and referential communication skills. Children receiving either type of training improved in their role-taking ability, whereas only those children receiving referential communication training showed significant improvement in their referential communication skills. These researchers suggest that a hierarchical relationship may exist between referential communication and role taking, with role taking being one aspect of referential communication. Subjects receiving

training of either type were found to show slightly more behavioral improvement as compared to no treatment controls at the time of a 12-month follow-up, although this result only approached, but did not reach, statistical significance.

Evaluation of Developmental Programs

Inconsistent findings make it difficult to draw meaningful conclusions about the efficacy of programs designed to enhance role-taking skills. Some programs were found not to effect changes in role-taking (Elardo & Caldwell, 1979), while others were found to increase role-taking ability, but not to improve adjustment measures (Iannotti, 1978). Still other programs were found to improve both role-taking skills and adjustment (Chandler, 1973). Durlak (1983) suggests that further research should be directed at determining the relative effectiveness of social problem-solving programs as compared to developmental programs in terms of improving interpersonal adjustment.

Behavioral Programs

Theoretical Orientation

Behavioral programs differ from cognitive and developmental programs in that, rather than assuming that there are general skills or abilities that mediate adjustment, they emphasize discrete, situationally-specific skills necessary for problem resolution. Behavioral programs typically aim to teach skills which have been found to differentiate socially competent from socially incompetent individuals. Social learning theory underlies the teaching techniques and procedures generally employed by such programs. One technique, that of social modeling, has been found to have significant effects on the development and modification of behavior (Cartledge & Milburn, 1986). Bandura (1973) has found that modeling of appropriate responses to aggression-provoking

situations will reduce aggressive behavior, while modeling of assertive responses will increase assertive behavior. Other techniques include providing a task overview and instructions, behavioral rehearsal, therapist feedback, coaching, response reinforcement, self-evaluation, self-regulated reinforcement, self-instructions, and in vivo response practice (Linehan, 1979).

Alberti (1977) states that assertive behavior therapy, having its roots in behavior therapy, has an "underdeveloped theoretical base" (p. 23). First used in the treatment of anxiety, assertiveness training has incorporated aspects of humanistic-existential theory, Gestalt theory, and social learning theory (Alberti, 1977). Linehan and Egan (1979) describe three general models upon which assertiveness training programs are based, and suggest a possible fourth model. The first model postulates a skill deficit in the area of assertion. The second model postulates that the response is in the repertoire but is inhibited in certain situations due to either conditioned anxiety or faulty beliefs. The third model assumes that the skills are in the person's repertoire, but the person can not discriminate when and how to employ the skills, so these skills are eventually extinguished. The fourth model, which is presented by these authors, is the rational choice model which assumes that the person makes a rational choice not to assert in certain situations (Linehan & Egan, 1979).

Primary Prevention Programs

Michelson and Wood (1980) developed an assertiveness training program and administered one of two versions of the program, an 8 contact hour version or a 16 contact hour version, to fourth grade children within regular classroom settings. Their intent was to treat aggressive and passive children in vivo by presenting the program not only to the unassertive children, but to their more

socially skilled classmates as well. They found that both training groups improved significantly more than the control groups on self-report measures of assertiveness, with no differences between the 8 contact hour or 16 contact hour groups. Treatment effects were maintained at the time of follow-up, and at that time marginal differences were found between the two treatment groups.

La Greca and Santogrossi (1980) used behavioral treatment methods, including modeling, coaching, and role-playing with videotaped feedback, to teach eight skill areas (e. g., greetings, verbal complimenting) to third, fourth, and fifth grade children who had received low peer acceptance ratings. As compared to the attention-placebo group and the waiting-list control group, both of which were comprised of low status children, the trained group evidenced superior knowledge of social skills, demonstrated more appropriate skills in a role-play situation, and initiated more social contact at various times during the school day. The trained group, though, were not found to change in sociometric rating as a result of the program. The researchers point to the stability of this measure over time, or the possible insensitivity of the procedures employed, to account for this negative finding.

Remedial Programs

Ollendick and Hersen (1979) attempted to determine the differential effectiveness of social skills training, discussion-based treatment, and no treatment with a group of incarcerated juvenile delinquents, 13 to 16 years of age. The social skills training included instruction in, and modeling of, appropriate social behavior, as well as rehearsal, feedback, social reinforcement, and suggestions for between-session practice. The discussion group discussed social problems without utilization of the behavioral

techniques employed in the social skills training group. The control group did not attend sessions. Self-report measures indicated a significant post-program reduction in state anxiety and shift toward internal locus of control for the social skills group as compared to the two other groups. Role-play measures indicated a decrease in aggressive content and an increase in assertive content for the social skills group. Also, the adolescents receiving the social skills training earned significantly more points on their token economy system, and evidenced less disruptive behavior, although not to the point of statistical significance.

Spence and Marzillier (1981) used a social skills program to train institutionalized delinquent 10- to 16-year-old boys who had been found to be deficient in social skills. This program emphasized a variety of skills ranging from very basic interactional skills to more complex interpersonal skills. When compared to an attention placebo group and a control group, experimental subjects were found to improve on certain basic social skills and to maintain this improvement at the 3-month follow-up. In terms of the generalization of skills, disappointing results were obtained. A staff questionnaire, a social workers' questionnaire, and observer ratings of video tapes failed to show significant treatment effects. The follow-up data on self-reported offences and police convictions, although not statistically significant, showed that the social skills group had fewer convictions, despite the fact that they reported committing more offenses. The researchers discuss the importance of motivation factors in terms of the utilization of the newly-acquired skills in real-life situations.

Bornstein, Bellack, and Hersen (1980) examined the efficacy of social skills training incorporating the techniques of modeling, role play, feedback,

instructions, and rehearsal in the treatment of four severely aggressive 8- to 12-year old children who were inpatients in a psychiatric unit. These researchers hypothesized that aggressive children become aggressive out of frustration and to gain attention because they lack the social skills to be assertive and to develop and maintain positive relationships. A number of behaviors were targeted for intervention including eye contact, hostile tone, and requests for behavior change. Subjects showed improvement on all targeted behaviors as well as in overall assertiveness. Generalization data and follow-up results proved to be inconsistent in terms of both behaviors and subjects, leading the researchers to emphasize the need for an individualized assessment and treatment plan. Of relevance to the present study is Bornstein et al.'s (1980) comment on the importance of aggressive subjects' beliefs about the need for, and the effectiveness of, aggressive behavior in determining whether assertive alternatives are tried.

Michelson, Mannarino, Marchione, Stern, Figueroa, and Beck (1983) compared the relative effectiveness of behavioral social skills training and interpersonal cognitive problem-solving training with clinically-diagnosed maladjusted 8- to 12-year-old boys. The behavioral program employed in the study focused on teaching children to discriminate assertive behavior from passive and aggressive behavior in certain conflict and non-conflict social situations, such as requesting behavioral change, requesting favors, and giving compliments. As well, nonverbal communication was addressed. A variety of behavioral techniques were used including discussion, modeling, role-play, role reversal, feedback, social reinforcement, and homework. The interpersonal cognitive problem-solving training focused on the identification of interpersonal

problems, the generation of alternative solutions, and the anticipation of consequences. The whole process was then reviewed with special emphasis on consequential and means-end thinking. The problem-solving process was used in vivo when conflict arose between group members. The control group received treatment sessions aimed at increasing the expression of feelings.

At the time of the post-program assessment, no significant group differences were found on any of the self-report, teacher report, parent report, or behavioral observation measures. Within-group analyses revealed that the behavioral training and the problem-solving training both achieved significant effects on the two parent report measures. Group differences were found when the measures were readministered 12 months later, with the behavioral training group showing superiority on one subtest of the School Behavior Checklist, and both social skills training groups showing equal superiority on two others. At this time, within-group analyses showed that the problem-solving group declined on three subtests of the School Behavior Checklist, while the behavioral group did not show any declines, but, in fact, showed improvement on a number of measures. Michelson, Mannarino, et al. (1983) suggest that one possible reason the behavioral observations did not show significant effects is that "given a population of marked socially-maladjusted children these modalities may not be of sufficient potency, by themselves, to effect significant changes in actual behavior" (p. 554). These researchers go on to recommend that training be conducted within the schools to enhance effectiveness and generalization.

Evaluation of Behavioral Programs

Michelson, Mannarino, et al. (1983) state that "behavioral programs have been systematically investigated over the past decade and demonstrate potent

treatment effects across a wide variety of clinical and non-clinical populations...Overall, the behavioral programs consistently obtain significant treatment effects" (pp. 545-546).

In their review of behavioral social skills training programs, Stern and Fodor (1989) conclude that, in general, these programs are somewhat successful in imparting basic social skills, but that evidence of generalization is limited. These authors describe this type of social skills training as having made a "modest beginning" (p. 8).

Summary

Intervention programs aimed at preventing social maladjustment or remediating existing social problems have been classified as cognitive, developmental (Durlak, 1983), or behavioral (Michelson, Mannarino, et al., 1983) in orientation. Interpersonal cognitive problem-solving programs have been shown to enhance problem-solving skills (Pellegrini & Urbain, 1985), but the link to behavioral adjustment is still in question (Durlak, 1983). Developmental programs have been shown to increase role-taking ability and impact on behavioral adjustment (Chandler, 1973), but the relative effectiveness of this approach as compared to cognitive problem-solving has yet to be determined (Durlak, 1983).

Behavioral programs have been shown to be effective in imparting specific social skills to both clinical and nonclinical populations (Michelson, Mannarino, et al., 1983). Children who have received assertiveness training have increased their scores on self-report measures of assertiveness (Michelson & Wood, 1980), but those who have received specific skill training have not

necessarily increased in sociometric status (La Greca & Santogrossi, 1980). Remedial programs used with juvenile delinquents have been shown to reduce aggressive content in role-plays (Ollendick & Hersen, 1979), but inconsistent or disappointing results have been obtained on adjustment measures (Bornstein, Bellack & Hersen, 1980; Spence & Marzillier, 1981).

Finally, in a study which compared the effects of a behavioral social skills training program, a cognitive problem-solving program, and a control program aimed at encouraging the expression of feelings, on the adjustment of maladjusted boys, no between-group differences were found at posttesting. At a one year follow-up, only one subtest showed a significant difference, in favor of the behavioral group (Michelson, Mannarino, et al., 1983). Michelson, Mannarino, et al. (1983) suggest that the behavioral measures may not have shown change because the treatments used, by themselves, may not have had sufficient potency.

Future Research

According to Pellegrini and Urbain (1985), future research should address some important issues which have yet to be explored, one of which is the role brainstorming plays in ICPS training. Pellegrini and Urbain (1985) state that:

> . . .while most children may not brainstorm spontaneously in most social situations, the failure to do so may generally be of little significance for the well-adjusted child whose natural recourse is to a relatively mature and effective problem solving strategy. The same failure in an aggressive child may lead to peer conflict or goal frustration due to the type of problem solution typically relied upon. If so, the aggressive child may require initial training in brainstorming primarily to establish more mature scripts. (p. 37)

The differences between socially unskilled children and their more socially skilled counterparts have been well-documented in the literature.

Aggressive and isolated children typically generate fewer solutions (Richard & Dodge, 1982), as do negative peer status boys (Asarnow & Callan, 1985). Aggressive children produce a disproportionately large number of aggressive solutions (Deluty, 1981), while submissive children evaluate submissive alternatives more positively (Deluty, 1985) and assertive responses more negatively (Deluty, 1983). Both groups of socially unskilled children seem to be stuck in a rut, unable to get out. Osborn (1963) states that this type of rigid thinking, described as "functional fixation," "mechanization," "set," or "problem-solving rigidity," is characterized by reliance on solutions used in the past. He suggests that the use of brainstorming encourages the generation of new ideas by "de-conditioning" the habit of limiting alternatives based on past experience.

Social problem-solving intervention programs which have included brainstorming techniques in order to enhance the adjustment of socially unskilled children have been found, in some instances, to have the opposite effect. Barnett and Zucker (1990) stress that there are problems with the assumption that the theory and techniques, or modified versions of these techniques, which were originally developed for adults, are applicable to children. Olexa and Forman (1984) suggest that the urban disadvantaged children in their study either lacked appropriate alternatives when brainstorming or did not evaluate the consequences of aggressive action as punishing. Like Pellegrini and Urbain (1985), Olexa and Forman (1984) recommend greater emphasis on the production of nonaggressive alternatives. Similarly, Weissberg, Gesten, Rapkin, et al. (1981) found that the brainstorming process employed in their program resulted in the urban children creating aggressive alternatives. Camp et al.'s (1977) findings with aggressive subjects parallel

those of Weissberg, Gesten, Rapkin, et al. (1981) and of Olexa and Forman (1984), in that the children who received the program produced a significantly higher proportion of aggressive alternatives to interpersonal problem situations. They suggest that a possible way to deal with aggressive alternatives is to stress the negative outcomes of such action.

In order to limit the generation of the same type of solution, programs have deviated from the brainstorming principles of quantity breeds quality and deferment of judgment. Solution variants have been categorized under a common heading and different responses have been elicited (Spivack & Shure, 1974), or the generation of aggressive solutions has been restricted (Weissberg et al., 1980). Camp and Bash (1981) endeavor to actually teach a number of solution categories by presenting social cue cards to the children when solutions are suggested. Researchers have suggested that social skills training programs should focus on increasing the number of assertive alternatives these children generate (Deluty, 1985; Olexa & Forman, 1984).

A second approach to limiting the generation of inappropriate options is to emphasize the negative consequences of that type of behavior. Camp et al. (1977) suggest that their program's nonjudgmental acceptance of aggressive solutions and discussion of possible consequences was not a powerful enough approach to affect the social appropriateness of the aggressive children's suggestions. D'Zurilla and Goldfried (1971) stress that there are value judgments involved in deciding on the utility of an action and in the assessment of consequences. Deluty (1983) has shown that aggressive children regard aggressive behavior more positively, and submissive children evaluate assertion more negatively, on a number of different dimensions. Deluty (1983)

suggests that training programs for aggressive and submissive children should endeavor to change their overly-positive evaluations of their own response style and their overly-negative evaluations of assertion. Thus far, social problem-solving programs for children have addressed this issue by discussing the negative long-term consequences of implementing inappropriate or ineffective solutions, without addressing the underlying values. A social problem-solving program which endeavored to change children's evaluations in order to reduce the number of aggressive or ineffective solutions tried, would need to teach such children to distinguish between passivity, assertion, and aggression, would need to address the overly-positive evaluations these children have of aggression and passivity, and would need to accentuate assertive strategies.

Another issue of concern in developing a training program for socially unskilled children, is the degree to which lessons are interrupted by disruptive and unacceptable behavior. Camp et al. (1977), for instance, found that the goals of their program were adversely affected by the off-task and inappropriate behavior of the socially maladjusted children. They suggest attacking these problem behaviors directly through the use of a response-cost procedure, which has been found to be effective in reducing problem aggressive behavior in the classroom (Forman, 1980a). Also, when response-cost procedures have been paired with problem-solving, aggression has not been found to increase (Olexa & Forman, 1984). In order to benefit from the lessons presented, the socially maladjusted children must maintain an acceptable level of attention and control. The use of a response-cost procedure has been shown to be beneficial in this regard.

As yet, no social skills intervention program has combined those elements of a behavioral assertive training program which classify and evaluate behavior within a more general problem-solving process, in order to increase the behavioral adjustment of socially maladjusted children. Kendall and Wilcox (1980) tested the hypothesis that a cognitive-behavioral approach which incorporated a conceptual labeling/training procedure would be more likely to promote behavioral adjustment, and generalization of these effects, as compared to a "concrete" version of the same program. Although the treatment programs being compared were short in duration (six sessions each), some support was provided for the increased effectiveness of the conceptual labeling procedure. With regard to labeling, Trower (1979) states, "individuals employ conceptual labels to classify and categorize others. The function of this labeling process is to reduce complex information (which would otherwise be overwhelming) to simpler concepts which have predictive value" (p. 5). Assertiveness training provides labels for the classification of responses as aggressive, assertive, or passive. This training procedure also ensures that assertive strategies are practiced, and that the positive consequences of assertion, and the negative consequences of aggression and passivity, are stressed. To date, no program has incorporated the classification of general strategies as aggressive, passive, or assertive into the problem-solving process in general, and, in particular, into the generation of alternative strategies stage proposed by D'Zurilla and Goldfried (1971).

Research Questions

Briefly stated, the research conducted in this thesis attempts to test, with socially unskilled children, the efficacy of D'Zurilla and Goldfried's (1971) alternative brainstorming procedure involving the generation of general strategies before the generation of specific alternative behaviors. The generation of general strategies stage includes the classification of general strategies as aggressive, passive, and assertive, and emphasizes the negative consequences of aggression and passivity, and the positive consequences of assertion. For the purposes of the present study, aggressive strategies are defined as those which disregard the feelings, rights, or needs of the other person, and include such strategies as fighting, yelling, threatening, insulting, and tricking. Assertive strategies are defined as those which respect the needs, feelings, and rights of others in an effort to achieve a mutually satisfying solution. These include sharing, trading, asking, stating one's feelings, and taking turns. Passive strategies are defined as those which allow one's feelings, needs, rights, or opinions to go unexpressed or to be disregarded. Such strategies as ignoring, not stating one's opinion, and giving in needlessly, are included. The reasons for using the combined procedure with socially unskilled, passive and aggressive, children are twofold. First, for children who have generally used one response style to solve interpersonal problems, this procedure would teach the children three general categories of solutions, and, within these categories, to consider a variety of alternative strategies. Second, this procedure provides an opportunity, during the process of the evaluation of general strategies, to discuss the effectiveness of passive, aggressive, and assertive strategies.

The present study compares the effects of a social problem-solving program containing an assertiveness training component, a problem-solving program, and a no treatment control on the attitudes and behavior of intermediate-aged passive and aggressive mainstream children. The 16 lesson combined program begins with lessons on problem recognition, followed by lessons which define assertiveness, aggressiveness, and passivity, and introduces the general strategies involved in being assertive, aggressive, and passive. The negative short-term and long-term, personal and social consequences of aggression and passivity, and the positive consequences of assertion, are emphasized. The generation of alternatives stage begins with the generation of general strategies which are then classified as assertive, aggressive, or passive. In the decision-making stage, links are stressed between behavior and consequences, and criteria for the evaluation of strategies are introduced. This leads to appropriate strategies being decided upon in given problem situations. Further brainstorming then takes place to generate specific alternatives for strategy implementation. These are evaluated and the best solution is chosen.

The problem-solving program is based on Weissberg et al.'s (1980) program and is comprised of 16 lessons involving problem recognition, brainstorming of alternative courses of action, consideration of consequences, and selection of the solution to be implemented. The no treatment control group received the pre- and post-program measures, but no intervention.

In both treatment groups, response-cost procedures were instigated whereby inappropriate or aggressive classroom behavior was consequenced in

an effort to keep disruption at a minimum and to demonstrate, in an immediate sense, the negative consequences of such choices.

The research questions addressed in the present study are as follows:

1. Would intermediate-aged socially unskilled children be able to retain the content of either a problem-solving program or a problem-solving plus assertiveness training program equally well, as evidenced by an ability to name the problem-solving steps, and would those receiving instruction be superior to the no-treatment controls in this ability?
2. When presented with a description of problematic social situations, would socially unskilled children receiving either a social problem-solving program which focuses on the generation and classification of strategies as assertive, aggressive, and passive (PS/AT) or a problem-solving training program (PS) generate significantly more strategies than socially unskilled children not receiving training? Would the children receiving the PS/AT program generate significantly more strategies than the children receiving the PS program?
3. Would inclusion in social skills training programs bring about significant changes in socially unskilled children's attitudes about passivity, assertion, and aggression, as compared to the attitudes of socially unskilled children not receiving training? Would the children receiving the PS/AT program evidence significantly more attitude change than those receiving the PS program?
4. Would those included in the social skills programs show significant increases in self-efficacy, as compared to the no treatment controls? Would the PS/AT program be more effective than the PS program in improving the children's sense of self-efficacy?

5. Would the two treatment programs be more effective than no treatment in increasing the social appropriateness of intermediate-aged socially unskilled children as measured on self-report and teacher-report scales? Would the children in the PS/AT program improve more than the children participating in the PS program?

6. Would the children receiving treatment evidence significant improvement in behavioral adjustment as compared with similar children receiving no treatment, as measured by teachers on a global scale of adjustment? Would the children receiving the PS/AT program show significantly more improvement in adjustment than those receiving the PS program?

Hypotheses

The present study was designed with a priori planned comparisons. The first planned comparison examines treatment versus no treatment on all dependent variables. The second comparison examines the effects of receiving the PS/AT program versus the PS program. The main hypotheses for this research are:

Hypothesis 1.

The subjects receiving treatment will show significant pre- to posttest improvement at the .05 level, as compared to no treatment controls, on the following measures:

a) Problem-Solving Steps Interview to assess recall of problem-solving steps.

b) Knowledge of Interpersonal Problem-Solving Strategies to determine the number and type of strategies generated to interpersonal problem situations.

c) Children's Action Tendency Scale: Evaluative Judgments to ascertain attitudes toward passive, assertive, and aggressive responses to social problems.

d) Children's Self-Efficacy for Peer Interaction Scale to evaluate perceptions of self-efficacy.

e) Children's Assertive Behavior Scale to assess assertive and nonassertive social behavior in children, as indicated on self-report and teacher-report versions of this measure.

f) Revised Behavior Problem Checklist to determine changes in behavioral adjustment.

Hypothesis 2

The subjects receiving the PS/AT program will show significantly more improvement, at the .05 level of significance, than the subjects receiving the PS program on all dependent measures with the exception of the Problem-Solving Steps Interview. It is hypothesized that subjects learning, additionally, to classify behavior into passive, assertive, and aggressive categories, and to evaluate these behavioral responses, will be able to generate significantly greater numbers of alternative strategies, will have more favorable attitudes toward assertion, and less favorable attitudes toward aggression and passsivity, will have enhanced perceptions of self-efficacy in difficult interpersonal situations, will have an increased ability to be assertive in problematic social situations, and will show an overall increase in behavioral adjustment.

Hypothesis 3

There will be no significant difference between the PS/AT group and the PS group on recall of problem-solving steps on the Problem-Solving Steps

Interview. It is hypothesized that, since both sets of problem-solving steps are expected to be appropriate in content for intermediate-aged children, and both are reviewed repeatedly throughout the course of the programs, both sets of problem-solving steps will be retained equally well.

CHAPTER III

Method

Participants

Participants in this study were 45 Grade 4, 5, and 6 students enrolled in regular classrooms in a North Vancouver School District public school located in a lower- to middle-class urban area. Participants were of both sexes, ranged in age from 113 months to 158 months, and were enrolled in one of four different classrooms within the same school. The school was chosen on the basis of a previous assessment which had ranked it as one of the neediest schools in the District in terms of services to children. The school houses an ESL program, an intermediate behavior-disorder program, and provides some special services to a large Native population. The school administration expressed interest in, and support for, the study.

The teachers of the four intermediate classrooms in the school were contacted and all expressed a willingness to have students from their classrooms become involved in the study. They were asked to nominate those students whom they felt were socially unskilled, that is, extremely passive or extremely aggressive, and who could benefit from social skills training. This process yielded a list of 53 students. These students were then grouped into three mixed-grade groups on the basis of approximately equal representation of grade and sex. Some adjustments to the groupings were required due to classroom scheduling conflicts. Groups were randomly assigned to intervention or control conditions. Informed parental consent letters (see Appendix A) were sent home. Of those letters sent home, 49 permission slips were returned, and these children were included in the study.

Of this original sample of 49 children, 2 children did not complete the program and 1 child was not attending the school at the time of posttesting. Of the two children who did not complete the program, one was withdrawn by parental request due to concerns over the child missing the regular classroom program, and one was admitted into the behavioral adjustment classroom within the same school. One child began attending partway through the program, and since she had been selected earlier for inclusion in the study but parental permission had not been obtained at that time, it was agreed to let her participate in the program with parental permission. Since she did not attend the initial sessions, her data were not included for anaiysis. One child's data from the PS/AT group were randomly selected for exclusion in order to produce groups with equal sample sizes. The remaining 45 cases are described in Table 1 with respect to age, grade, and gender for each condition.

The principal investigator taught both of the intervention programs with the assistance of an aide who monitored the behavior of the participants and assisted in the application of the behavior management techniques. Classroom teachers were not present during any of the lessons. Teachers were informed that both treatment groups would be receiving variations of problem-solving training, but were not given specifics regarding the differences between the programs.

Measures

All participants completed a content measure, three transfer of learning measures, and one generalization measure. The classroom teachers completed two informant-report generalization measures. All measures were

Table 1

Description of Groups

Condition	Group Size	Grade 4	5	6	Age Range	Mean Age	Gender M	F
PS/AT Group		4	7	4	113-147	129.47	10	5
Aggressive	7				months	months		
Passive	8							
Total	15							
PS Group		5	6	4	113-147	129.8	10	5
Aggressive	8				months	months		
Passive	7							
Total	15							
Control		5	5	5	116-158	134.06	10	5
Aggressive	7				months	months		
Passive	8							
Total	15							
Total Sample	45	14	18	13	113-158 months	131.11 months	30	15

administered prior to, and following, the implementation of the social skills training programs.

The Problem-Solving Steps Interview, an adapted version of Gesten, de Apodaca, Rains, Weissberg, and Cowen's (1979) Problem-Solving Interview, was included to determine if participants could retain the content of the training

programs. The three transfer of learning measures assessed changes in skills, attitudes, and feelings of self-efficacy as a result of receiving social skills training. The Knowledge of Interpersonal Problem-Solving Strategies Assessment (Asarnow & Callan, 1985) was used to measure changes in the ability to generate alternative strategies to difficult interpersonal situations. The Children's Action Tendency Scale--Evaluative Judgments (Deluty, 1983, 1985) was employed in order to assess changes in attitudes toward passive, assertive, and aggressive responses. The Children's Self-Efficacy for Peer Interaction Scale (Wheeler & Ladd, 1982) was included to evaluate changes in feelings of self-efficacy.

To determine the degree to which assertive behavior generalized to social situations outside the training context, the participants completed the Children's Assertive Behavior Scale (Michelson & Wood, 1982) and the teachers completed the teacher's version of the same measure. The teachers also completed the Revised Behavior Problem Checklist (Quay & Peterson, 1983), a global measure of adjustment, to ascertain whether the intervention programs impacted on general behavioral adjustment.

Content Measure:

1. Problem-Solving Steps Interview (PSSI)

This adapted version of Gesten, de Apodaca, Rains, Weissberg, and Cowen's (1979) Problem-Solving Interview (PSI) assesses the ability to name the problem-solving steps taught in social problem-solving training. The PSI asks children to discuss how they solve problems. The PSSI asks children to name the problem-solving steps. As in the PSI, problem-solving steps mentioned are given four points each. A prompt for more information is then

given and any steps outlined are given three points each. A final prompt is given and any problem-solving steps mentioned are scored two points each. Weissberg, Gesten, Rapkin, et al. (1981) found that children trained with a social problem-solving program were able to give significantly more problem-solving steps on the problem-solving interview.

Transfer of Learning Measures:

2. Knowledge of Interpersonal Problem-Solving Strategies Assessment (KISA) (Asarnow & Callan, 1985)

This assessment was developed by Asarnow and Callan (1985) from a pilot study in which children were asked to describe the kinds of problems they have getting along with peers, to list alternative responses to the problem situations, and to describe their thoughts and feelings in these situations. This pilot study revealed that aggressive acts were considered to be most problematic and the majority of these situations involved physical or verbal aggression. Another major problem involved being asked to participate in peer activities. An interview was developed from this study which includes four situations, three involving aggression and one involving friendship initiation. After being presented with each situation, the child is asked to describe what the boy could do to solve the problem. Responses are scored as separate solutions only if they are different in significant ways from other solutions. Responses are also coded as to solution strategy using the categories of physical aggression, tattle, ignore, assertion, positive, mature, and intense aggression. Although the psychometric properties of this assessment have not been published, it is seen as valuable as a pre- and post-program measure to determine changes in the number and type of alternative solutions generated to

interpersonal problem situations. Asarnow and Callan (1985) found significant differences between positive status boys and negative status boys in terms of the number and type of solutions generated on the KISA.

3. Children's Action Tendency Scale--Evaluative Judgments (CATS--Eval.) (Deluty, 1983, 1985)

The Children's Action Tendency Scale--Evaluative Judgments is a modified version of the CATS (Deluty, 1979). The CATS (Deluty, 1979) is a self-report measure which presents 13 social conflict situations and, after each situation, three pairs of alternative responses. The paired comparison format represents all the pairings of assertive, aggressive, and submissive solutions. The CATS yields separate indices of aggression, assertion, and submission. The modified CATS measure assesses children's "evaluative judgments" of aggressive, assertive, and submissive behaviors. The CATS--Eval. presents CATS conflict situations and the three alternative solutions (aggressive, assertive, submissive) to each situation. After each alternative solution, six semantic differential scales are presented, and the children are instructed to evaluate the solution on the six seven-point scales. These scales represent "evaluative" judgments (good-bad, wise-foolish, kind-cruel), judgments of "potency" (strong-weak, brave-cowardly), and an index of consequential thinking (successful-unsucessful). After completing the semantic differential scales, the children are asked to choose the alternative solution that would make them feel best, the alternative that would make the other person feel the best, and the alternative they should do. Deluty (1983) found that, in his study of fourth- to sixth-graders, the children designated as aggressive, assertive, and submissive rated the three response styles significantly differently. He went on

to recommend treatment plans on the basis of these results. Although there has been little research on the psychometric properties of this measure, it is expected to provide valuable information regarding changes in children's evaluations of assertive, aggressive, and submissive response styles after social skills training.

4. Children's Self-Efficacy for Peer Interaction Scale (CSPI) (Wheeler & Ladd, 1982)

This 22-item self-report questionnaire measures children's perceptions of their abilities to use verbal persuasive skills in peer interaction situations. Each CSPI item describes a social situation (e.g., Some kids want to play a game). This is followed by an incomplete sentence asking the child to evaluate how difficult it is for him or her to use verbal persuasive skills (e.g., Asking them if you can play is _____ for you). The child is to circle the chosen response from four options: HARD!, hard, easy, EASY!. The questionnaire is comprised of 12 conflict situations and 10 nonconflict situations. Test-retest reliability of the CSPI was .86 over a two-week period. The CSPI was found to be positively correlated to the Piers-Harris Children's Self-Concept Scale, and to be negatively correlated to the anxiety subscale of this measure. The CSPI was also positively correlated to peer ratings, sociometric measures, and teacher ratings of self-efficacy.

Generalization Measures:

5. Children's Assertive Behavior Scale (CABS) (Michelson & Wood, 1982)

This is a forced-choice, 27-item self-report measure designed to assess assertiveness and nonassertiveness in children. Item categories cover a number of skill areas such as giving and receiving compliments and complaints,

and initiating, maintaining, and terminating conversations. For each item, the child is presented with five possible responses from which the child is asked to select the one that most accurately describes what he or she would likely do in a situation involving another child. The five choices given are very passive, passive, assertive, aggressive, or very aggressive responses to the situation. The CABS scale generates three scores, an overall score, a passive score, and an aggressive score. The CABS total score is a measure of general unassertiveness, with higher scores indicating greater unassertiveness. The total score was found to be moderately correlated to behavioral observations. Teachers' ratings on the teacher's version of the CABS (TRCABS) were found to produce variable, yet significant, correlations with the self-report CABS. Test-retest reliability over a four-week period was found to be r=.87. The CABS was found to discriminate those who had received social skills training from those who had not.

6. Revised Behavior Problem Checklist (RBPC) (Quay & Peterson, 1983)

The RBPC is an 89-item informant report which yields four major scales: Conduct Disorder, Socialized Aggression, Attention Problems-Immaturity, and Anxiety-Withdrawal, and two minor scales: Psychotic Behavior and Motor Tension-Excess. The RBPC represents a major revision of the Behavior Problem Checklist, changing the broader Conduct Problem syndrome to Conduct Disorder, Socialized Aggression, Attention Problems-Immaturity, and Motor Excess (Edelbrock, 1988). The RBPC has been found to have high internal consistency (mean=.83). Test-retest reliability over a two-month period for the six scales ranged from .49 to .83. In terms of concurrent validity, a clinical group of 6- to 12-year-olds was found to score significantly higher than

normal children on all six scales. To establish construct validity, the relationship between RBPC subscale scores and other measures was examined. RBPC was found to correlate significantly with behavioral observations. For example, peer rated aggression was found to correlate highly with Conduct Disorder, and to a lesser degree, but still significantly, with Attention Problems-Immaturity and Psychotic Behavior. Cooperation was found to be negatively correlated to Conduct Disorder and Attention Problems-Immaturity. In terms of peer nominations, likeability was found to be negatively correlated with both Conduct Disorder and Attention Problems-Immaturity.

In summary, students in the study completed five measures and their teachers completed two informant-report measures.

Procedure

Once consent letters were returned, timetabling of the groups was arranged with the teachers involved, and space sought within the school. Two weeks prior to the start of the group interventions, pre-treatment data were collected. The teachers completed the CABS (Michelson & Wood, 1982) and the RBPC (Quay & Peterson, 1983). The self-report measures were administered in the same order to all students. The Children's Assertive Behavior Scale (CABS) (Michelson & Wood, 1982) was administered on a group basis to all the students. The children were told that the investigator was interested in finding out how children act in certain situations, and they were to answer as honestly as possible. They were assured that the booklet was not a test, and that there were no right or wrong answers. The PSSI and the KISA (Asarnow & Callan, 1985) were administered individually during the second session. The CATS--Eval. (Deluty, 1985) was administered on a small group

basis, allowing the investigator to monitor whether the children were completing the form as instructed. Finally, the CSPI (Wheeler & Ladd, 1982) was administered on a large group basis. For children who had difficulty with English as a second language, the ESL teacher was available to assist with the group-administered measures.

Pre-treatment data were collected in late April, 1991, and social skills training for the Intervention groups took place over a six-week period between early May and mid-June. Post-program measures were administered during the last two weeks of school in the same order and in the same manner as the pre-program measures. Children in the Control group completed the pre-program and post-program measures concurrently with the children receiving social skills training, but did not receive any direct intervention other than the classroom management techniques being practiced by the regular classroom teachers.

The two social skills intervention groups each received 16 lessons, with two 45-minute lessons and one 35-minute lesson per week. The social problem-solving program presented was a condensed version of a longer program, The Rochester Social Problem Solving (SPS) Program by Weissberg, Gesten, Liebenstein, Doherty Schmid, and Hutton (1980). The problem-solving assertiveness training program combined elements of the Rochester problem-solving program with Michelson, Sugai, Wood, and Kazdin's (1983) assertiveness training program contained in the book entitled Social Skills Assessment and Training with Children. Unlike the Rochester program, the combined program presented problem-solving steps not included in the original program, that is, generation and selection of general strategies prior to

generation and selection of specific alternative behaviors. Although the combined program was similar to an assertiveness training program in its emphasis on the classification of behavior as assertive, aggressive, or passive, the combined program integrated this process into a more general strategy of problem solving.

The Rochester Social Problem Solving (SPS) Program (Weissberg et al.,1980) is a widely-used social problem-solving curriculum. This program consists of thirty-four 20- to 25-minute lessons which can be taught in a group format, plus six optional lessons. The activities in the original program were developed for children from second to fourth grade (i. e., 7 to 10 years of age), but the authors state that the curriculum can be adapted for older and younger children. This program consists of five major units: recognizing feelings in ourselves and others, problem sensing and identification, generation of alternative solutions, consideration of consequences, and integration of problem-solving behavior. The Rochester program utilizes a wide variety of teaching techniques including discussion, role play, competitive games, flash cards, and cartoon workbooks. For each lesson, objectives, materials, presentation and procedure, special notes and enrichment ideas are outlined and a sample script of the lesson is included.

The first unit of the social problem-solving program implemented in the present study consists of three lessons which lay the foundation for the problem-solving strategy. The objective of the first lesson is to increase the children's vocabulary of affective labels and to relate feelings to various interpersonal situations. Concepts emphasized are: everyone has feelings, situations evoke different feelings in people, some feelings are good and some

are not so good, and learning about feelings is important. The second lesson is directed at the recognition of feelings in others. Children are taught that people's feelings can be inferred by looking at their expressions, actions, and statements, and that more information can be obtained by asking the person how he or she feels. In this lesson the children are required to associate various interpersonal situations to the affective labels they feel are most appropriate, to role-play the body postures, gestures, and facial expressions associated with various feelings, and to practice inquiring about other people's feelings. The last lesson of this unit provides a review of the key concepts.

The second unit focuses on sensing when a problem exists and on beginning the formal problem-solving steps. In the first of these lessons, the definition of an interpersonal problem is introduced. The children describe problem situations as well as the feelings associated with these problems. In the next lesson, the first three problem-solving steps are presented. These steps involve defining the problem in specific terms, deciding on a goal, and stopping to think before acting. In the last lesson of this unit, the children role play various problem and positive interpersonal situations, and those observing the role play are asked to decide if a problem exists and speculate about how the protagonist and others feel in the situation. They are to define the problem, decide on a goal, and reiterate the necessity of stopping to think before acting.

Unit three presents lessons on the generation of alternative solutions to interpersonal conflict situations, which is the fourth problem-solving step. In the first of these lessons, the definition of "solution" is presented and step four is introduced. Children are divided into small groups and are asked to generate solutions to interpersonal problem situations without evaluating the

effectiveness of the given solutions. These solutions are then reviewed with the large group. In the following lesson, the children generate and role play solutions to problem situations. They also participate in a cooperative game which involves answering questions on feelings, problem identification, and the problem-solving steps outlined thus far.

The objective of the fourth unit is to teach the children to anticipate and evaluate the short-term and long-term consequences of the solutions generated in response to interpersonal conflict situations. Criteria with which to evaluate given solutions are introduced. The first lesson of this unit introduces the concept of consequential thinking and presents the next problem-solving step, "think ahead to what might happen next." The second lesson provides practice in pairing solutions with realistic consequences. In the third lesson, children are placed in small groups, asked to problem solve a number of solutions to difficult interpersonal situations, and then must decide on the most likely consequence of each solution. Each small group then role-plays for the large group three different solutions and the consequences of each solution. The last problem-solving step, that of choosing and implementing the best solution, is presented in the finai lesson of this unit. Children are asked to evaluate various solutions to interpersonal problems and to select the one to be tried.

The last unit of the program involves the integration of the problem-solving steps. The first lesson provides a review of the six steps and requires the children to develop skits depicting the resolution of a problem using these steps. In the next lesson, the children role play these skits in front of the large group and the large group offers feedback as to whether the presenters included all the problem-solving steps. The following lesson emphasizes the

need to be persistant when problems and obstacles are encountered. The children are presented with situations in which the solution chosen does not work and are encouraged to select another solution. In the last lesson of the program, there is further elaboration on the reasons why the chosen solution might fail, and all the problem-solving steps are reviewed.

The combined program was based on the Rochester program as well as the modules presented in Social Skills Assessment and Training with Children (Michelson, Sugai, Wood, & Kazdin,1983). Michelson, Sugai, Wood, and Kazdin's (1983) program is comprised of sixteen 45- to 60-minute lessons covering a wide variety of socially validated topic areas. These include: introduction to social skills, compliments, complaints, refusals, requesting favors, asking why, requesting behavior change, standing up for your rights, conversations, empathy, nonverbal social skills, status difference interactions, sex difference interactions, decision-making, group interactions, and conflict resolution. The program was developed as a group intervention for children within the 8- to 12-year old range, although the authors recommend that the group be as homogeneous as possible in terms of age. In the initial lesson, children are instructed on the differences between assertive, passive, and aggressive behavior. Thereafter, in the social situations depicted in each module, the three different response styles are presented, and the children are asked to differentiate between them. The appropriateness of behaving assertively is emphasized, and the assertive alternative is then practiced.

The assertiveness training program (Michelson, Sugai, Wood, & Kazdin, 1983) also utilizes a wide variety of teaching techniques. Included are a rationale for the trainer, a sample lecture, a rationale for skill acquisition,

modeling of the skill between trainers and between a trainer and children, behavioral rehearsal (including role play and role reversal), feedback, reinforcement, small group discussion, class discussion, and homework assignments.

The 16-lesson combined problem-solving, assertiveness training program utilized in the present study contains elements of the two programs previously described. This program is divided into four major units. The first unit introduces problem solving. The second unit explains the concept of general strategies in problem solving and discusses the general strategies considered to be aggressive, passive, and assertive. The third unit focuses on the short-term and long-term, personal and social, consequences of the three response styles. In the fourth unit, the last problem-solving steps are introduced. These include: selection of the most appropriate strategy, generation of specific behaviors for strategy implementation, and selection of specific means to be tried.

In order to ensure accurate presentation of the course content, all lessons had explicitly-stated objectives and procedures, and a detailed script of the material to be presented. A brief outline of the 16 lessons is presented.

Lesson 1. Introduction to Problems

This lesson provides a definition of an interpersonal problem and has the children practice deciding whether such a problem exists in given situations.

Lesson 2. Initial Problem-Solving Steps

In this lesson, the first three problem-solving steps are introduced:

(i) define the problem in specific terms

(ii) decide on your goal

(iii) stop to think before you act

Lesson 3. Introduction to General Strategies

The concept of general strategies is explained. The problem-solving step, "think of as many strategies as you can," is introduced. Passive, assertive, and aggressive strategies are discussed. The behavior of those using passive, assertive, and aggressive strategies is described.

Lesson 4. Aggressive Strategies

Aggression is defined and the children suggest strategies which could be classified as aggressive. Each of the aggressive strategies suggested by the children are printed on index cards and attached to the aggression (monster) poster.

Lesson 5. Passive Strategies

The concept of general strategies is reviewed. Passivity is defined and the children suggest strategies which could be classified as passive. These strategies are printed on index cards and placed on the passivity (mouse) poster. The nonverbal communication of someone using a passive strategy is role played. The children practice differentiating passive from aggressive strategies.

Lesson 6. Assertive Strategies

Aggressive and passive strategies are reviewed. The definition of assertion is given and assertive strategies are discussed. The children name assertive strategies and these strategies are printed on index cards and placed on the assertion (me) poster. The nonverbal communication of someone using an assertive strategy is role played. The differences between assertion and aggression are emphasized.

Lesson 7. Differentiating Strategies

The children practice role playing assertive strategies using appropriate nonverbal communication. They practice classifying general strategies and observing nonverbal communication.

Lesson 8. Generation and Classification of Alternative Strategies

In this lesson, practice is provided in the generation and immediate classification of general strategies to solve given interpersonal problem situations.

Lesson 9. Consequences of Aggression

This lesson introduces the next problem-solving step "think ahead to the possible consequences." The negative short-term and long-term consequences of aggression are stressed. The children discuss the motivations people have for being aggressive. This lesson addresses the overly-positive views aggressive children have of aggression.

Lesson 10. Consequences of Passivity

The negative personal and social consequences of passive behavior are emphasized in this lesson. The children present ideas on why people are passive. The relationship between passivity and anger is introduced.

Lesson 11. Consequences of Assertion

The positive outcomes of being appropriately assertive are presented. The possible difficulties people have in being assertive are discussed.

Lesson 12. Criteria for the Evaluation of Strategies

A number of criteria for the evaluation of general strategies are introduced in this lesson including: safety, fairness, feelings evoked, and effectiveness in resolving the problem without creating further problems.

Lesson 13. Practice in Evaluating Strategies

In this lesson, the children are given an opportunity to brainstorm a number of different strategies to solve an interpersonal problem and evaluate the strategies using the four criteria presented. The children are divided into small groups and given a problem situation. They generate a number of alternative strategies and then evaluate these.

Lesson 14. Role Play of the Generation and Evaluation of Strategies

The children role play in front of the large group the interpersonal problem they were given last lesson, thinking aloud, as they implement the steps. The large group gives feedback to the role play groups on their implementation of the problem-solving process.

Lesson 15. Brainstorming Specific Alternative Behaviors

In this lesson, the problem-solving step, "pick the best strategy and make plans," is introduced. The children brainstorm to generate as many specific ways to implement the strategy as possible, including deciding when, where, and how to put the strategy into effect.

Lesson 16. Evaluation of Specific Alternative Behaviors

The last problem-solving step, "try out your plans," is introduced in this lesson. This involves the evaluation of specific alternatives on the basis of their effectiveness in implementing the strategy, taking into account the obstacles that may present themselves.

In order to increase motivation and maintain control, behavioral contracts were maintained with both the problem-solving group and the combined program group. A response-cost procedure was instigated whereby any occurrence of an inappropriate classroom behavior "cost" the child one of a

given number of points. Bonus points could be earned for correctly answering "challenge" questions regarding the problem-solving process. Individual prizes were awarded when a set number of points had been earned, and a group reward was given when the group as a whole had accumulated a given number of points.

CHAPTER IV

Results

In this chapter, the reliability of the scale and subscale scores, both pre- and posttest, is reviewed. Descriptive statistics including means and standard deviations for all groups on all dependent measures are then summarized. The results of the repeated measures ANOVAs and the MANOVAs are examined next. Following this, the research questions are reviewed and addressed. Finally, a table of trends in the results is presented.

Internal Consistency Reliability Analysis

Scale and subscale scores were subjected to internal consistency reliability analysis (Cronbach's alpha) and the results are presented in Table 2. The CATS--Eval. Passive, Assertive, and Aggressive Scales all proved to have acceptable internal consistency levels, ranging from .90 to .96. The alphas of the CATS--Eval. Should Do, You Feel Best, and Others Feel Best scales were consistently lower than those for the CATS--Eval. semantic differential scales. The two scales with the lowest internal consistency, the Should Do Passive and the You Feel Best Passive scales, with alphas of .30 and .56 respectively at the time of pretest, and .58 and .55 at the time of posttest, indicate great variability in the children's assessment of whether they should be passive, and whether it made them feel best to be passive in difficult interpersonal situations. Thus, the results of the CATS--Eval. Should Do, You Feel Best, and Others Feel Best scales will be included in the descriptive statistics section, but will not be included in the inferential analyses.

The CSPI, the two versions of the CABS, and the RBPC all had alphas within acceptable ranges. Most of these scale and subscale scores increased

Table 2
Internal Consistency of Scale and Subscale Scores

Measure	Pretest	Posttest
CATS--Eval. Passive Total	0.8953	0.9384
CATS--Eval. Assertive Total	0.9267	0.9581
CATS--Eval. Aggressive Total	0.9364	0.9544
CATS--Eval. Should Do Passive	0.2976	0.5813
CATS--Eval. Should Do Assertive	0.5775	0.7589
CATS--Eval. Should Do Aggressive	0.8629	0.8708
CATS--Eval. You Feel Best Passive	0.5571	0.5516
CATS--Eval. You Feel Best Assertive	0.6910	0.7970
CATS--Eval. You Feel Best Aggressive	0.8265	0.8761
CATS--Eval. Others Feel Best Passive	0.7390	0.8193
CATS--Eval. Others Feel Best Assertive	0.6294	0.7631
CATS--Eval. Others Feel Best Aggressive	0.7357	0.8615
CSPI	0.9007	0.9153
CABS: Self-Report	0.8758	0.8854
CABS: Teacher-Report	0.8952	0.9215
RBPC Conduct Disorder	0.9591	0.9605
RBPC Socialized Aggression	0.9395	0.9208
RBPC Attention Problems-Immaturity	0.9149	0.8834
RBPC Anxiety-Withdrawal	0.8585	0.8706
RBPC Psychotic Behavior	0.6932	0.9036
RBPC Motor Excess	0.8118	0.8632

slightly from pre- to posttesting. The PSSI and the KISA were not included for reliability analysis due to their free response format.

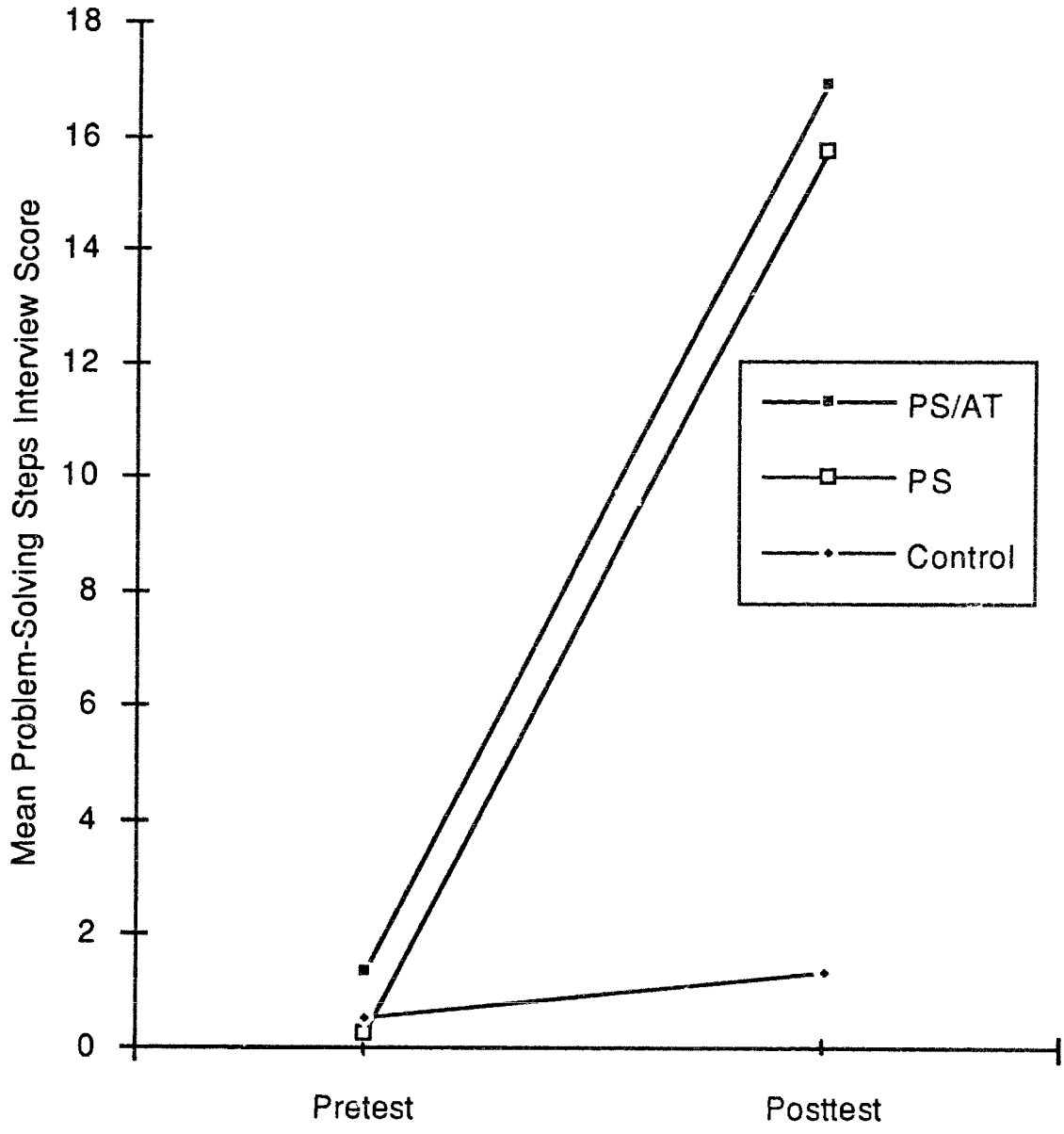
Descriptive Results

Upon completion of the group-administered self-report measures, test booklets were checked for incomplete items, and students were asked to complete any items which had been missed. This procedure resulted in very little missing data. Random missing values from the self-report and teacher-report measures were dealt with by inserting the group mean for the missing value. Tabachnick and Fidell (1989) suggest that replacing missing values with group means for that variable represents a compromise between being too liberal by taking an educated guess and too conservative by substituting overall means. The means and standard deviations of the pre- and post-treatment dependent measures for the three groups are presented in Appendix B. The pre- and post-treatment means and standard deviations of the measures for passive and aggressive subjects in each group are summarized in Appendix C.

Examination of Appendix B shows that on the content measure, the Problem-Solving Steps Interview, the means and standard deviations of both the PS/AT and the PS groups increased substantially over time as compared to the Control group, indicating retention of the content of the programs presented to the treatment groups. Figure 1 depicts this change graphically.

On the first of the transfer measures, the KISA, categories for coding responses were combined so that cumulative passive, assertive, and aggressive strategy scores resulted. "Ignore" and "tattle" categories were combined to produce the passive strategy score. "Directive assertive" and "prosocial assertive" categories, including "mature prosocial," were combined to

Figure 1:
Mean Scores on the Problem-Solving Steps Interview



yield the assertive strategy score, and "aggressive" and "intense aggressive" categories were combined to generate the aggressive strategy score. Estimates of interrater agreement were established for the classification of responses on the KISA into passive (tattle and ignore), assertive (directive and prosocial), and aggressive (verbal and physical) categories. Borg and Gall (1979) suggest that interrater agreement be established by calculating the percentage agreement between observers. Table 3 presents the percentage agreement between two raters classifying the responses into the three categories. Interrater agreement was found to range from 92.86% to 100%.

Examination of the results of the KISA on the Means and Standard Deviations Table (Appendix B) suggests a consistent pattern with respect to the mean number of passive, assertive, and aggressive strategies suggested by the two treatment groups on the KISA. The PS/AT and the PS groups showed increases in the mean number of strategies suggested, with slight increases in the standard deviations, while the Control group's mean and standard deviation decreased from pre- to posttesting. The increases in the mean number of

Table 3

Estimates of Interrater Agreement on the Responses to the KISA

Response	Range	Mean Percentage Agreement
Passive	92.86%--100%	96.49%
Assertive	96.05%--98.61%	97.14%
Aggressive	97.73%--100%	99.24%

strategies suggested by the PS/AT and the PS groups reflected increases in the mean number of passive, assertive, and aggressive strategies proposed by these two groups. The Control group, on the other hand, suggested fewer passive, assertive, and aggressive alternatives on the posttest than they had on the pretest. The mean numbers of passive, assertive, and aggressive strategies suggested by the two treatment groups and the Control group are illustrated graphically in Figures 2, 3, and 4.

The relative proportions of responses in each category given by the three groups on the KISA at pre- and posttest are summarized in Table 4. The PS/AT group decreased their percentage of assertive strategies from pre- to posttesting and increased their aggressive strategies, while the proportion of passive strategies changed only minimally. The PS group's proportion of passive strategies remained virtually unchanged, while there were slight changes in the proportion of assertive and aggressive strategies. The Control group increased their percentage of assertive strategies and decreased their percentage of aggressive strategies, while the percentage of passive strategies changed only marginally.

Changes in the mean number of passive, assertive, and aggressive strategies generated on the KISA by passive and aggressive students, are presented in Appendix C. The passive students in both intervention groups showed pre- to posttest increases in the mean number of passive, assertive, and aggressive strategies produced, with the passive PS/AT group members more than doubling the mean number of aggressive strategies generated. The passive controls showed decreases in the mean number of passive and aggressive strategies suggested, and a slight increase in the mean number of

Figure 2:
KISA--Mean Number of Passive Strategies

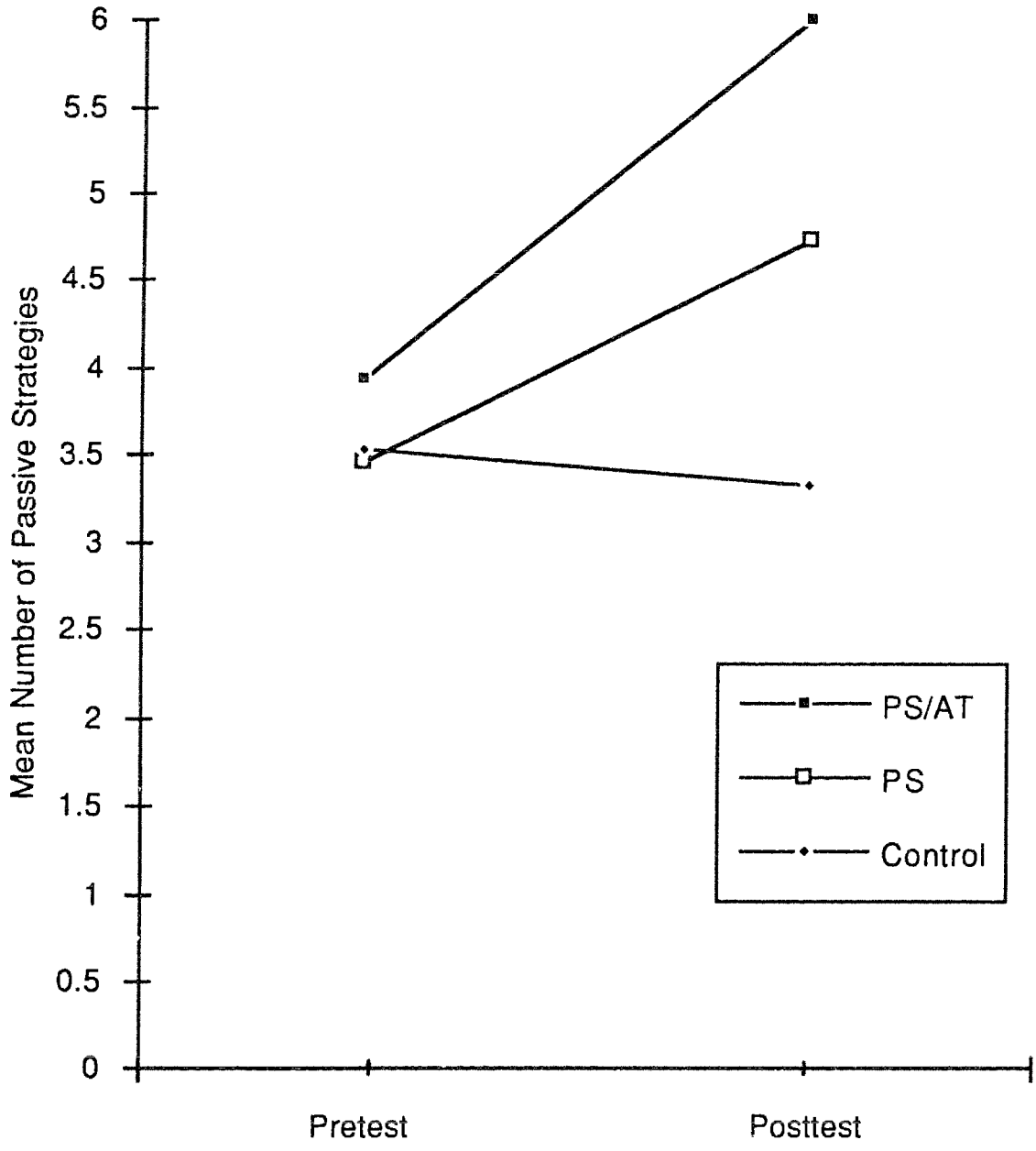


Figure 3:
KISA--Mean Number of Assertive Strategies

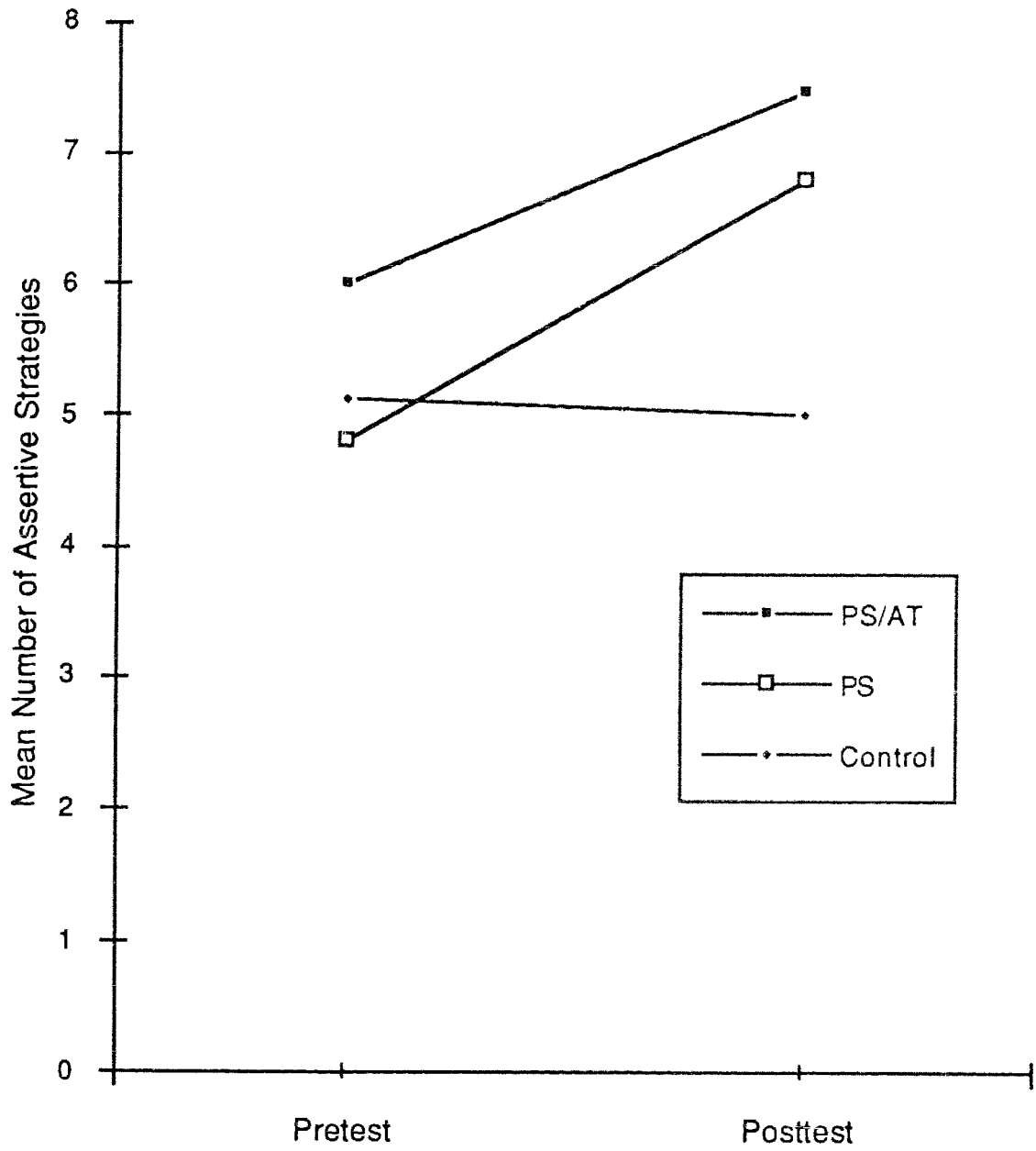


Figure 4:
KISA--Mean Number of Aggressive Strategies

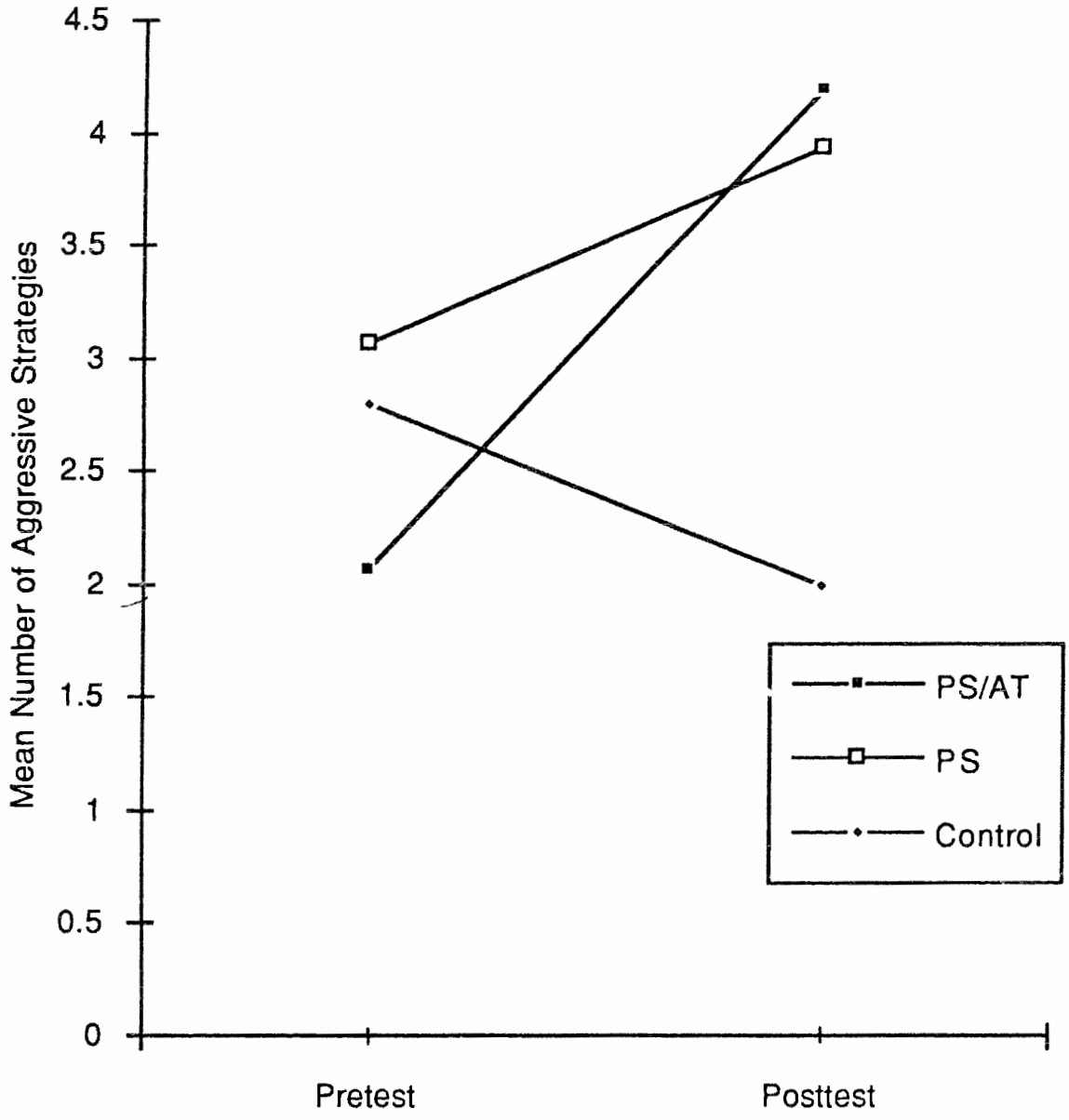


Table 4

Proportions of Passive, Assertive, and Aggressive Strategies Generated on the KISA

	Passive Strategies	Assertive Strategies	Aggressive Strategies	Grand Total
PS/AT Group:				
Pretest				
Aggressive Students	19	33	19	
Passive Students	40	57	12	
Total	59	90	31	180
% of Grand Total	32.78%	50.0%	17.22%	
Posttest				
Aggressive Students	38	42	30	
Passive Students	52	70	33	
Total	90.00	112.0	63.0	265
% of Grand Total	33.96%	42.26%	23.77%	
PS Group:				
Pretest				
Aggressive Students	31	42	36	
Passive Students	21	30	10	
Total	52.0	72.0	46.0	170
% of Grand Total	30.59%	42.35%	27.06%	
Posttest				
Aggressive Students	36	53	42	
Passive Students	35	49	17	
Total	71.0	102.0	59.0	232
% of Grand Total	30.60%	43.97%	25.43%	
Control Group:				
Pretest				
Aggressive Students	25	45	31	
Passive Students	28	32	11	
Total	53.0	77.0	42.0	172
% of Grand Total	30.81%	44.77%	24.42%	
Posttest				
Aggressive Students	23	32	21	
Passive Students	27	43	9	
Total	50.0	75.0	30.0	155
% of Grand Total	32.26%	48.39%	19.35%	

assertive strategies generated. The aggressive students in both the PS/AT group and the PS group showed increases in the mean number of passive, assertive, and aggressive strategies produced, with the aggressive PS/AT students more than doubling the mean number of passive strategies suggested. The aggressive controls showed decreases in the mean number of passive, assertive, and aggressive strategies suggested.

The results of further investigation to ascertain the changes in proportions of passive, assertive, and aggressive responses by passive and aggressive students are presented in Table 5. An examination of this table reveals that the passive and aggressive students who had received the PS program continued, at posttest, to generate passive, assertive, and aggressive strategies in relatively the same proportions as at pretest. The aggressive students in the PS/AT group produced similar proportions of aggressive strategies at posttest as they had at pretest, but they increased their proportions of passive strategies. The proportions of passive strategies generated by the passive students in the PS/AT group decreased slightly from pre- to posttesting, while the proportions of aggressive strategies produced by these students almost doubled from the preprogram adminstration to the postprogram adminstration of the KISA.

To determine if students were becoming more varied in the types of strategies they were suggesting, response categories were examined. Since there were three response categories, passive, assertive and aggressive, the maximum number of response categories into which the strategies could be classified was three. A response category was included if the student generated one or more strategies which fell into that category. The number of passive and aggressive students from each group who achieved the various

Table 5

Proportions of Passive, Assertive, and Aggressive Strategies Generated by Aggressive and Passive Students on the KISA

	Passive Strategies	Assertive Strategies	Aggressive Strategies
PS/AT Group:			
Pretest			
Aggressive Students	26.76%	46.48%	26.76%
Passive Students	36.70%	52.29%	11.01%
Posttest			
Aggressive Students	34.55%	38.18%	27.27%
Passive Students	33.55%	45.16%	21.29%
PS Group:			
Pretest			
Aggressive Students	28.44%	38.53%	33.03%
Passive Students	34.43%	49.18%	16.39%
Posttest			
Aggressive Students	27.48%	40.46%	32.06%
Passive Students	34.65%	48.51%	16.83%
Control Group:			
Pretest			
Aggressive Students	24.75%	44.55%	30.69%
Passive Students	39.44%	45.07%	15.49%
Posttest			
Aggressive Students	30.26%	42.11%	27.63%
Passive Students	34.18%	54.43%	11.39%

ratings of response categories at pre- and posttest is shown in Table 6. As can be seen from the table, the most marked change came about in the passive students from the PS/AT group. Whereas only three passive students had suggested strategies from all three categories at pretest, at posttest all passive students from this group generated strategies from all three categories. Further investigation revealed that these students had not included strategies from the aggressive category at pretest, but had done so at posttest. Similarly, the passive children in the PS group who increased their response categories at posttest did so by adding aggressive strategies where none had been generated previously.

Table 6
Number of Students Achieving Levels of Response Categories on the KISA

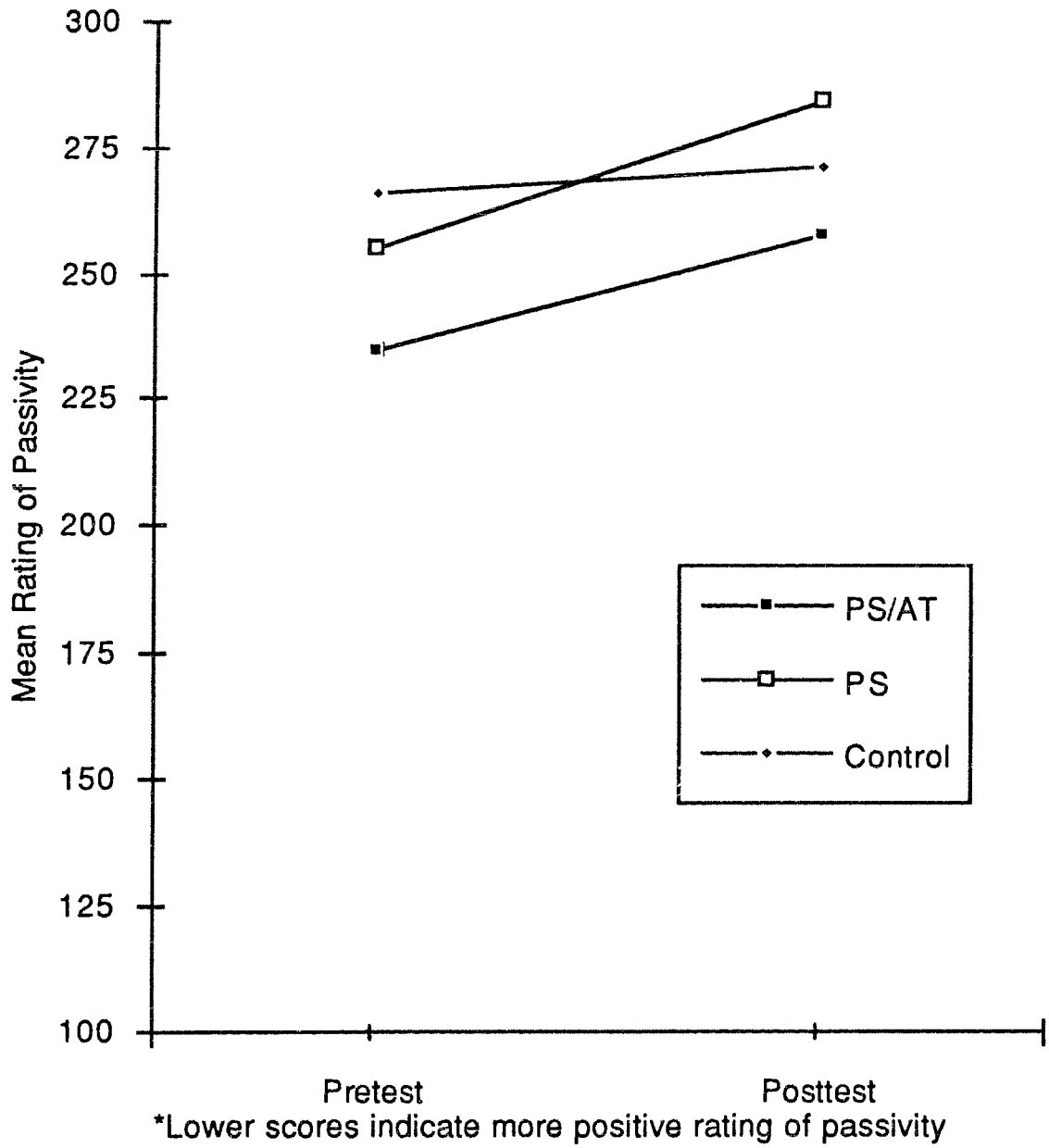
	Pretest Response Categories				Posttest Response Categories			
	3	2	1	0	3	2	1	0
PS/AT Group:								
Aggressive students (7)	6	1			6	1		
Passive students (8)	3	5			8	0		
PS Group:								
Aggressive students (8)	8	0			7		1	
Passive students (7)	4	3			6	1		
Control Group:								
Aggressive students (7)	5	2			6	1		
Passive students (8)	5	3			6	2		

On the second transfer of learning measure, the CATS--Evaluative Judgments, both the PS/AT and the PS groups had mean ratings of passivity which reflected a more negative evaluation of that type of response after treatment as compared to the Control group which changed marginally in their evaluation of passive responses. Mean ratings of passivity are shown in Figure 5. Changes in mean ratings of assertion and aggression on the CATS--Eval. formed a different pattern. Both the PS/AT and the Control group gave assertive responses a more positive rating at the time of posttest, while the PS group rated assertion slightly more negatively. The PS/AT group and the Control group also gave aggression a more negative rating at the time of posttest, while the PS gave aggression a slightly more positive rating. Changes in mean ratings of assertion are depicted in Figure 6 and changes in mean ratings of aggression are depicted in Figure 7.

Although there was variability between groups, the passive subjects generally rated passivity more positively and aggression more negatively than did the aggressive subjects. These CATS--Eval. results are presented in Appendix C.

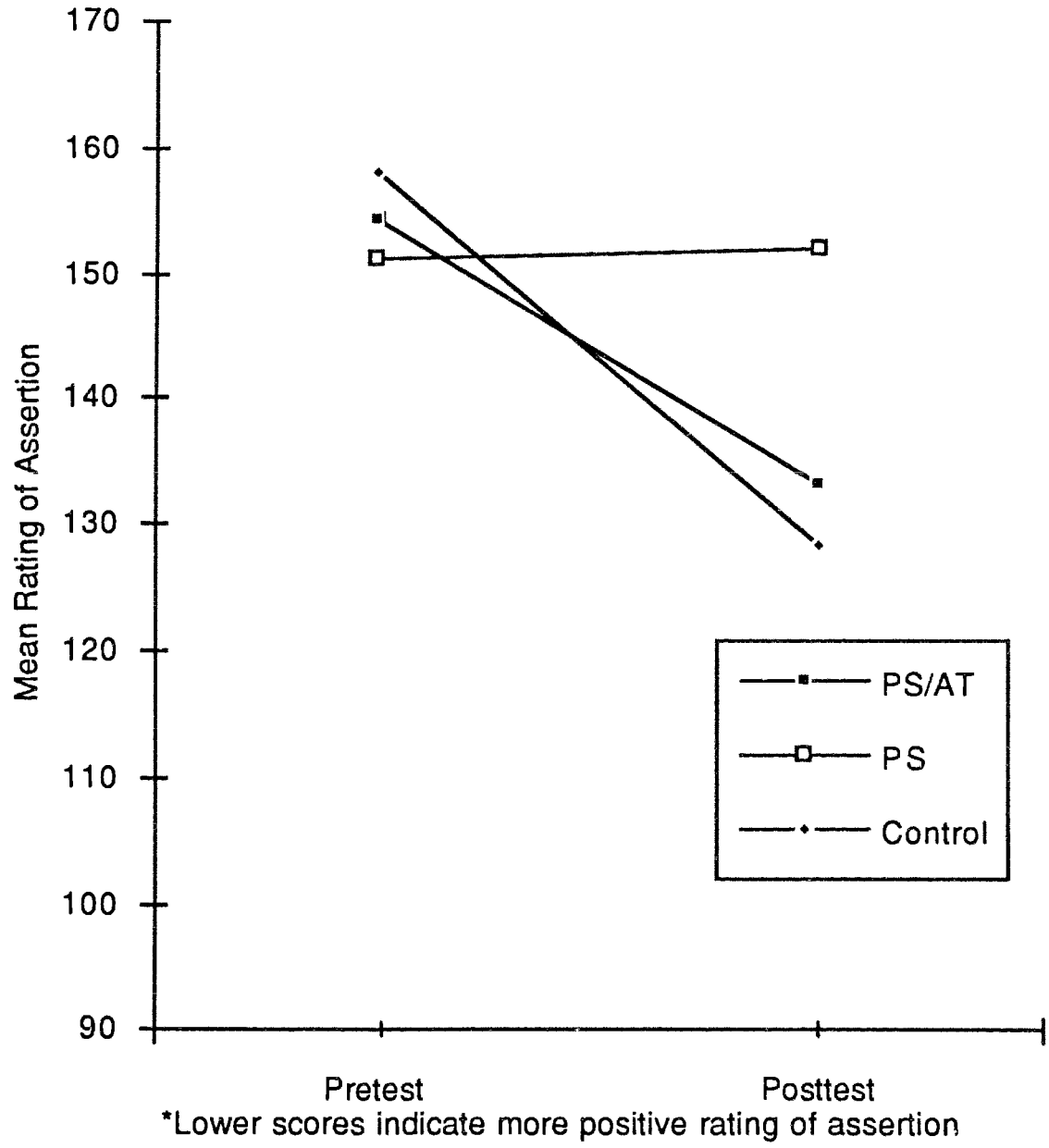
The total number of CATS--Eval. passive, assertive, and aggressive responses chosen as the alternative you should do (SD), would make you feel best (YF), or would make the other person feel best (OF) are presented in Table 7. All three groups selected fewer Should Do-Passive and You Feel Best-Passive responses on the posttest. Unlike the Control group, though, the PS/AT and the PS groups both selected more passive responses as making the other person feel best on the postprogram administration of this measure. All three groups selected fewer Should Do-Aggressive alternatives, but more You Feel

Figure 5:
CATS: Evaluative Judgments--Mean Rating of Passivity



*Lower scores indicate more positive rating of passivity

Figure 6:
CATS: Evaluative Judgments--Mean Rating of Assertion



*Lower scores indicate more positive rating of assertion

Figure 7:
CATS: Evaluative Judgments--Mean Rating of Aggression

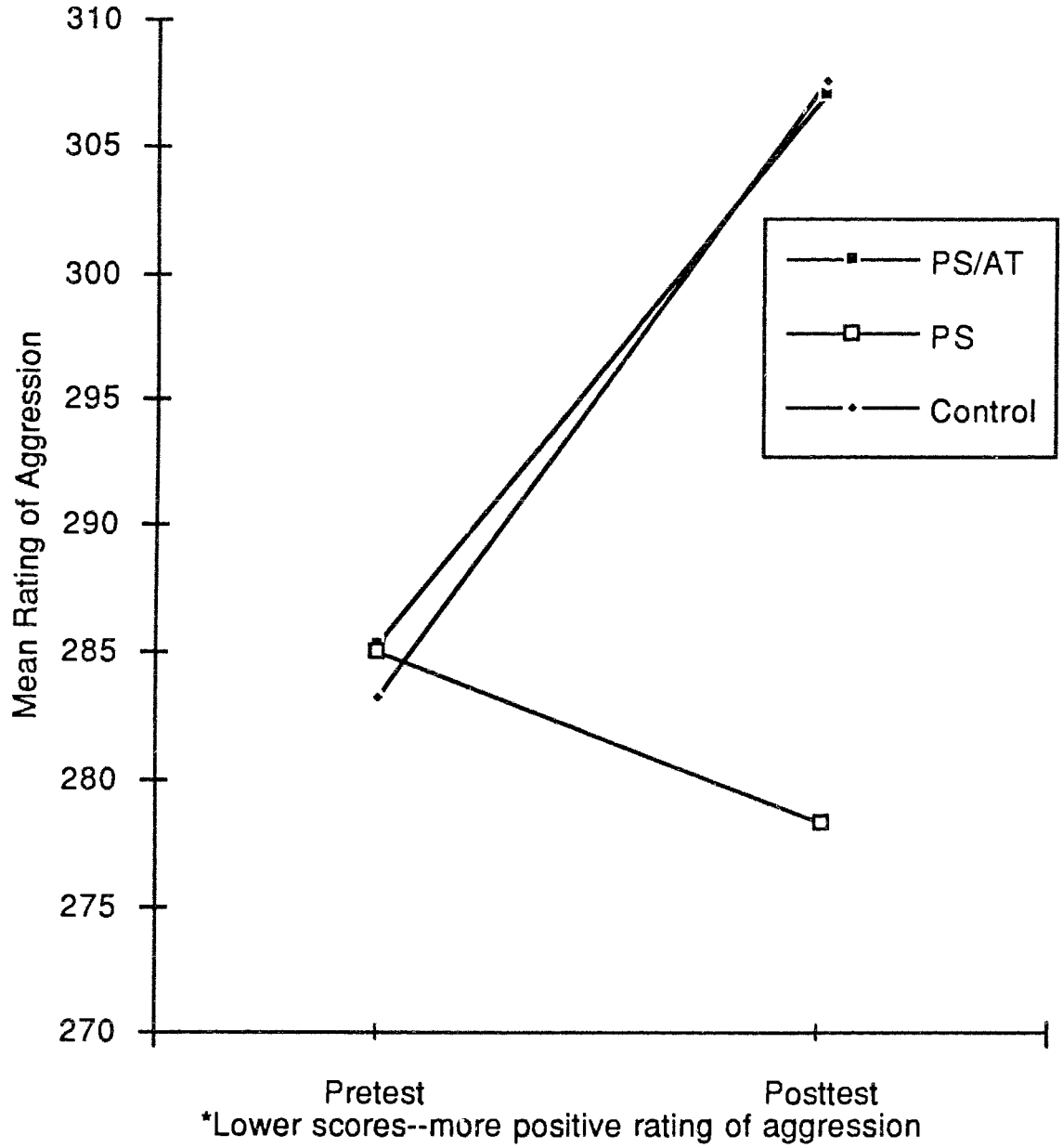


Table 7

Number of Response Alternatives Selected on the CATS--Evaluative Judgments

	Passive			Assertive			Aggressive			
	SD	YF	OF	SD	YF	OF	SD	YF	OF	Total
PS/AT										
Pre	34	34	75	98	88	65	18	28	10	450
Post	25	23	87	108	95	51	17	32	12	450
PS										
Pre	29	38	77	89	83	65	32	29	8	450
Post	25	22	85	95	82	46	30	46	19	450
Control										
Pre	30	32	73	100	85	60	20	33	17	450
Post	22	25	72	115	86	72	13	39	6	450

Best-Aggressive alternatives at posttesting, with the PS group showing the largest increase on this scale. The PS/AT and the PS groups both selected more Other Person Feel Best-Aggression, again with the PS group showing the largest increase. The Control group chose fewer of these alternatives at the time of the second administration. In terms of the assertive alternatives, the PS/AT, PS, and the Control group showed pre- to postprogram increases in the number of Should Do-Assertive responses selected. Whereas the PS and the Control group changed minimally on the You Feel Good-Assertive scale, the PS/AT group showed an increase in the number of assertive responses chosen

as making them feel good. On the Other Person Feel Best-Assertion scale, the Control group selected more of these alternatives, and the PS/AT and the PS groups chose fewer of these alternatives, with the PS group showing the largest pre- to postprogram decrease.

On the CSPI, the PS/AT and the PS mean scores increased from pre- to postesting, with the PS group showing the greatest increase. The Control group's mean score increased slightly at the time of the second testing. Differences in self-efficacy scores between passive and aggressive subjects are shown in Appendix C. The scores of the passive and aggressive subjects receiving intervention increased from pre- to posttesting. Whereas the aggressive controls' scores increased from the first administration of the CSPI to the second, the passive controls' scores decreased slightly.

In terms of the generalization measures, the pre- and posttest means of the Self-Report CABS and the Teacher-Report CABS form two different patterns. On the Self-Report CABS, only the PS/AT group was found to improve, while the other two groups' scores reflected a negative change. On the Teacher-Report CABS, the PS group improved the most, while the Control group had the most favourable mean posttest score. The CABS mean scores are presented in Figure 8 and Figure 9.

Pre-treatment and post-treatment differences between passive and aggressive subjects on the Self-Report and the Teacher-Report CABS are summarized in Appendix C. On the Self-Report CABS, there were substantial pretest differences in the mean scores of the passive and aggressive subjects regardless of group. When compared to the aggressive subjects, the passive subjects scored themselves as considerably more appropriately assertive. At

Figure 8:
Mean Scores on the Self-Report CABS

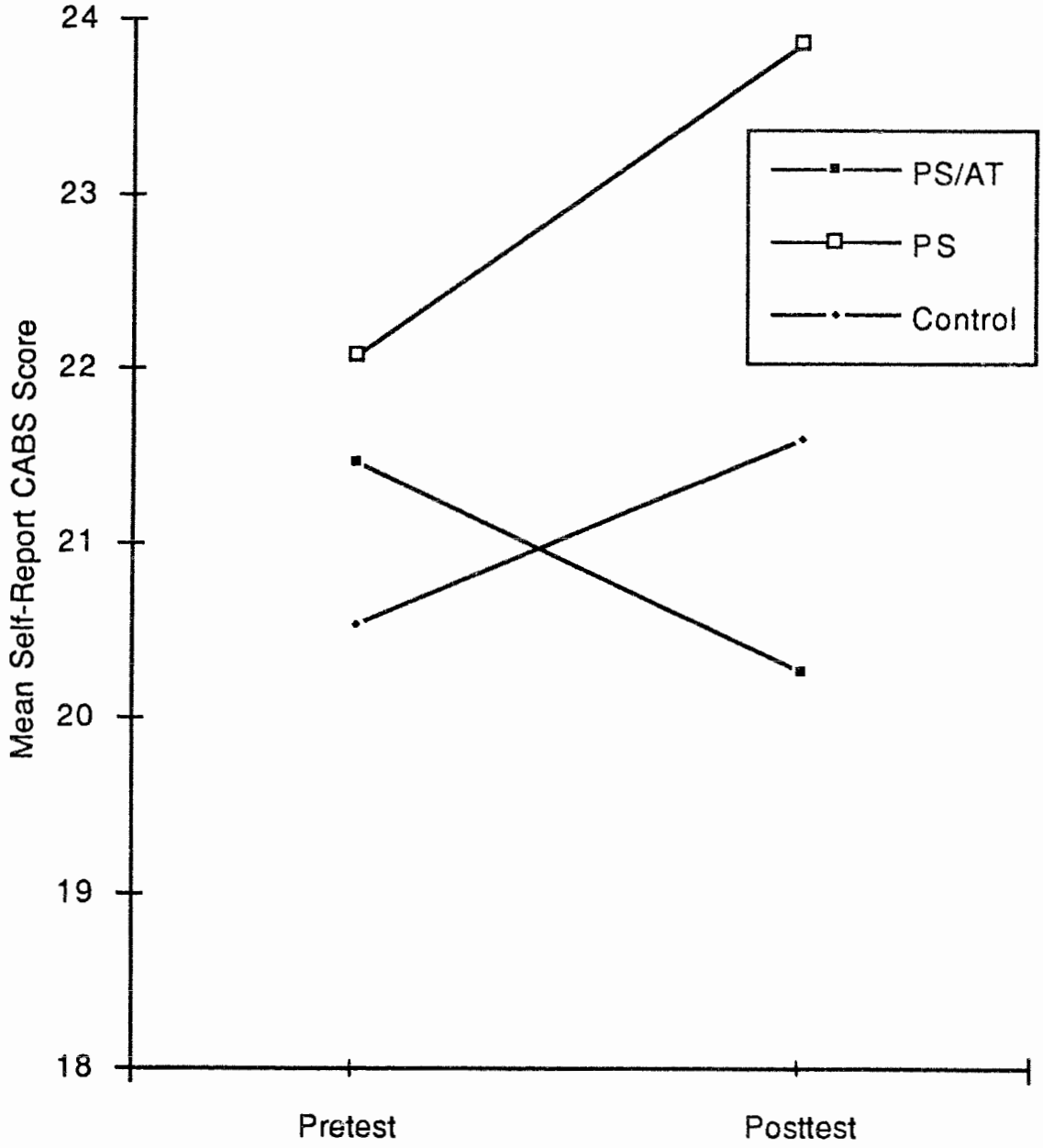
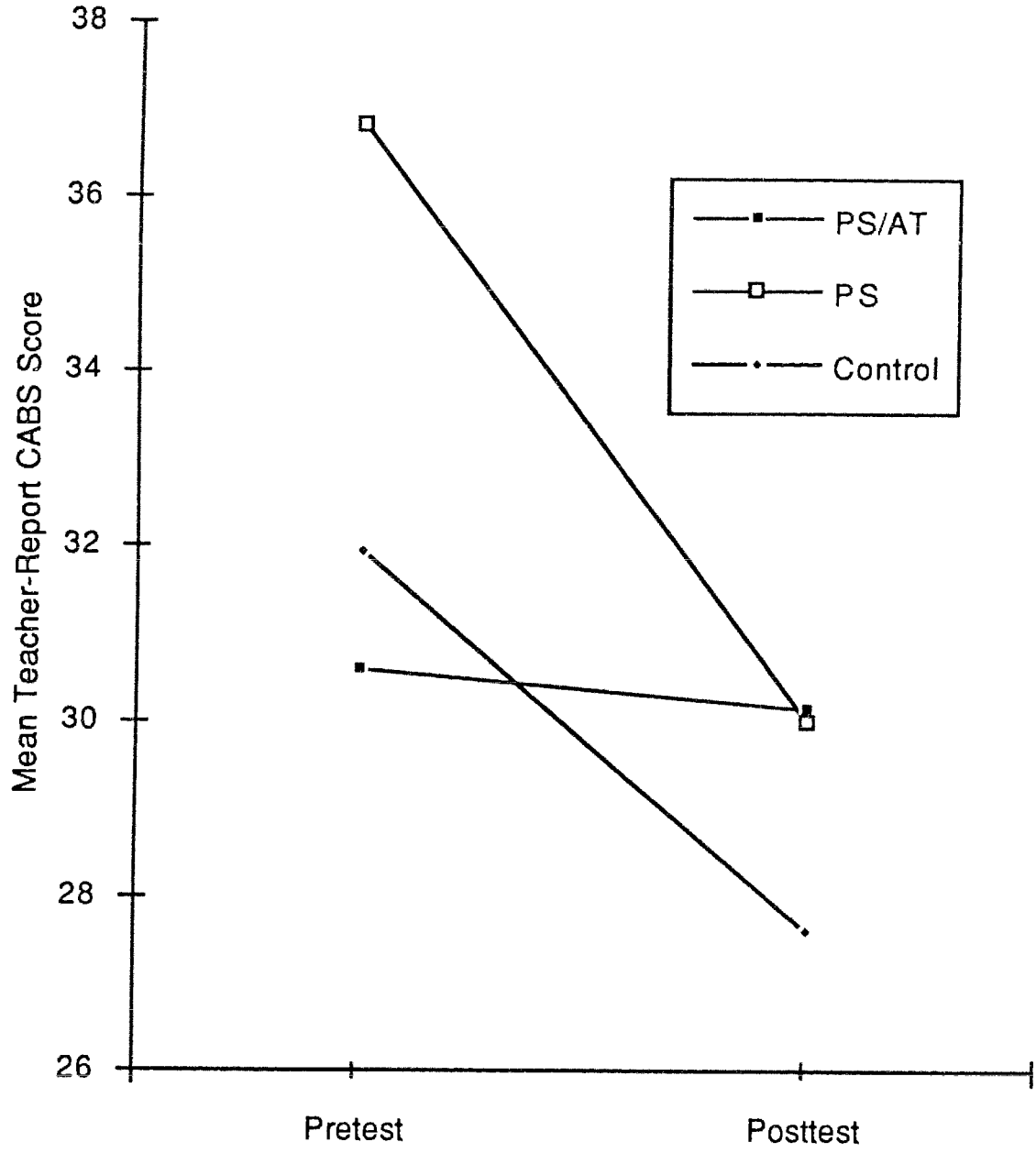


Figure 9:
Mean Scores on the Teacher-Report CABS



the time of posttest, only the passive subjects attending the PS/AT group showed improvement.

On the teacher-report version of the CABS, the mean scores attained by the passive and aggressive subjects reflect the teachers' evaluation of these students as being substantially less socially skilled when compared to the self-evaluation scores. The aggressive subjects in both intervention groups showed pre- to posttest improvement, as did the passive subjects in the PS and Control groups. The passive subjects in the PS/AT group, and the aggressive controls, achieved slightly worse scores at posttest.

The final measure, the RBPC, is comprised of six scales. The PS/AT group showed more pre- to posttest mean improvement than either of the other two groups on five of the six scales, including Conduct Disorder, Socialized Aggression, Attention Problems-Immaturity, Anxiety-Withdrawal, and Motor Excess. The Control group showed the most improvement on the Psychotic Behavior scale while the PS group's score increased on this scale from pre- to posttesting.

An examination of Appendix C reveals substantial pretreatment differences between the passive and aggressive subjects on three of the RBPC scales. The aggressive subjects had markerly higher scores on the Conduct Disorder, Socialized Aggression, and Attention Problems/Immaturity scales. The aggressive subjects also had slightly higher mean pretreatment scores on the Psychotic Behavior and Motor Excess scales. On the Anxiety/Withdrawal scale, there was considerable between-group variability in the mean scores of the passive and aggressive subjects. The overall pretreatment means for the passive and aggressive subjects, though, were very similar.

Treatment Effects

Repeated measures ANOVAs were conducted to determine the significance of results on those measures which yielded single total scores. For other measures which yielded multiple scale scores (i.e., the CATS--Eval., the KISA, and the RBPC), correlation coefficients were first computed. Since the scale scores of each of these measures were found to be correlated, the scores on each of the CATS--Eval., KISA, and RBPC measures were subjected to multivariate analyses of variance. For the ANOVAs and MANOVAs conducted, the test for group by time interaction effects was considered to be of primary importance, in that the focus of the study was to determine if there were significant differences between the three groups in their pattern of responses over time. The research was designed to permit a priori planned comparisons to determine the source of any significant group by time interactions. In accordance with the explicitly-stated hypotheses, if the interaction effects proved to be significant, the ANOVAs and MANOVAs were followed by two planned comparisons. The first of these compared intervention to control, and the second compared the two interventions. In MANOVA set-ups, these planned comparisons were examined first at the multivariate and then at univariate levels. Small sample sizes prevented inferential statistical examination of the possible differences in the reactions of passive and aggressive students to each of the treatments.

A repeated measures 3x2 analysis of variance (group by time) applied to the PSSI data, shown in Table 8, indicates a significant main effect for group, a significant main effect for time, and a significant group by time interaction. Since the group by time interaction was found to be significant, a priori planned

comparisons were conducted. These analyses are presented in Table 9 and show a significant between subjects effect when the PS/AT and PS groups are compared with the Control group and a significant interaction effect of the PS/AT and PS groups compared to the Control group over time. Both of the treatment groups improved significantly over time as compared to the Control group. There was no significant interaction effect when the PS/AT group was compared to the PS group over time.

A 3x2 multivariate analysis of variance (group by time) of the KISA Strategies scores showed no statistically significant main effect for group, but a significant main effect for time, and a significant group by time interaction effect. These analyses are summarized in Table 10.

Since the group by time interaction effect proved to be significant, the data were subjected to the a priori multivariate planned comparisons, which are presented in Table 11. As can be seen from Table 11, the planned comparisons to determine if there was a main effect for group were not significant. The group by time interaction effect when the two treatment groups' scores were compared to the Control group was found to be significant, while there was no group by time interaction effect when the PS/AT group was compared to the PS group. To determine the source of the significance of the group by time interaction, the KISA Passive, Assertive, and Aggressive Strategies scores were each subjected to a univariate 3x2 analysis of variance (group by time). The results of the analysis of variance of the KISA Passive Strategies Scores are summarized in Table 12. These analyses suggest a statistically reliable effect for time and significant group by time interaction when the treatment groups were compared to the Control group, but no main effect for

Table 8

Analysis of Variance of the PSSI Scores

Source	SS	df	MS	F	p
Between Subjects					
Group	1184.62	2	592.31	13.48	.000
Error	1845.33	42	43.94		
Within Subjects					
Time	2538.71	1	2538.71	71.76	.000
Group by Time	1085.42	2	542.71	15.34	.000
Error	1485.87	42	35.38		

Table 9

Planned Comparisons for the PSSI

Source	SS	df	MS	F	p
Between Subjects					
PS/AT, PS vs Control	1165.36	1	1165.36	26.52	.000
PS/AT vs PS	19.27	1	19.27	.44	.511
Error	1845.33	42	43.94		
Within-Subjects Effect					
PS/AT, PS vs Control by Time	1085.36	1	1085.36	30.68	.000
PS/AT vs PS by Time	.07	1	.07	.00	.966
Error	1465.87	42	35.38		

Table 10

Multivariate Analysis of Variance of KISA Strategies Scores

Source of Variance	Wilks' Lambda	Hypoth. df	Error df	Multivariate F	Sig. of F
Group	.86000	6.00	80.00	1.04438	.40
Time	.74957	3.00	40.00	4.45463	.01
Group by Time	.73913	6.00	80.00	2.17549	.05

Table 11

Multivariate Planned Comparisons for the KISA Strategies Scores

Source of Variance	Wilks' Lambda	Hypoth. df	Error df	Multivariate F	Sig. of F
Group					
PS/AT, PS vs Control	.90864	3.0	40.00	1.34057	.275
PS/AT vs PS	.94412	3.0	40.00	.78913	.507
Group by Time					
PS/AT, PS vs Control	.78245	3.0	40.0	3.70724	.019
PS/AT vs PS	.93962	3.0	40.00	.85684	.471

Table 12

Planned Comparisons for the KISA Passive Strategies Scores

Source	SS	df	MS	F	p
Between Subjects					
Group:					
PS/AT, PS vs Control	24.20	1	24.20	3.72	.061
PS/AT vs PS	11.27	1	11.27	1.73	.196
Error	273.53	42	6.51		
Within Subjects					
Time	24.54	1	24.54	9.45	.004
Group by Time:					
PS/AT, PS vs Control	17.42	1	17.42	6.70	.013
PS/AT vs PS	2.40	1	2.40	.92	.342
Error	109.13	42	2.60		

group and no interaction effect when the PS/AT group was compared to the PS group.

The KISA assertive strategies scores were also subjected to a 3x2 analysis of variance and these results are presented in Table 13. These analyses show a statistically significant effect for time, but no main effect for group and no significant group by time interaction for either comparison, that is, the treatment groups compared to the Control group or the PS/AT group compared to the PS group.

Table 13

Planned Comparisons for the KISA Assertive Strategies Scores

Source	SS	df	MS	F	p
Between Subjects					
Group:					
PS/AT, PS vs Control	28.80	1	28.80	1.68	.202
PS/AT vs PS	13.07	1	13.07	.76	.387
Error	718.53	42	17.11		
Within Subjects					
Time	27.78	1	27.78	4.75	.035
Group by Time:					
PS/AT, PS vs Control	17.42	1	17.42	2.98	.092
PS/AT vs PS	1.07	1	1.07	.18	.672
Error	245.73	42	5.85		

The 3x2 analysis of variance (group by time) of the KISA aggressive strategies scores, summarized in Table 14, showed no main effect for group, but a significant main effect for time and a significant group by time interaction when the treatment groups were compared to the Control group. No significant group by time interaction was found when the treatment groups were compared.

The CATS--Eval. semantic differential ratings were subjected to a 3x2 MANOVA (group by time). These analyses show a significant main effect for time, but no statistically significant effect for time and no significant group by time interaction. These analyses are presented in Table 15.

Table 14

Planned Comparisons for the KISA Aggressive Strategies Scores

Source	SS	df	MS	F	p
Between Subjects					
Group:					
PS/AT, PS vs Control	16.81	1	16.81	1.16	.288
PS/AT vs PS	2.02	1	2.02	.14	.711
Error	608.67	42	14.49		
Within Subjects					
Time	12.10	1	12.10	3.46	.070
Group by Time:					
PS/AT, PS vs Control	26.45	1	26.45	7.56	.009
PS/AT vs PS	6.02	1	6.02	1.72	.197
Error	146.93	42	3.50		

Table 15

Multivariate Analysis of Variance of CATS--Evaluative Judgments

Source of Variance	Wilks' Lambda	Hypoth. df	Error df	Multivariate F	Sig. of F
Group	.93588	6.00	80.00	.44920	.844
Time	.79137	3.00	40.00	3.51519	.024
Group by Time	.80515	6.00	80.00	1.52608	.180

The CSPI scores were subjected to a 3x2 analysis of variance (group by time). These analyses show no significant main effect for time, no significant main effect for group, and no significant group by time interaction. The results of the analysis are presented in Table 16.

With respect to the generalization measures, the scores from the Self-Report CABS and the Teacher-Report CABS were each subjected to a 3x2 analysis of variance (group by time), and the RBPC scores were subjected to a multivariate analysis of variance. On the Self-Report CABS, no significant main effect for group or time was found, and no significant group by time interaction was found. These results are presented in Table 17. On the Teacher-Report CABS, a significant main effect for time was found, but no main effect for group and no group by time interaction. These analyses are summarized on Table 18.

Table 16

Analysis of Variance of the CSPI Scores

Source	SS	df	MS	F	p
Between Subjects					
Group	363.09	2	181.54	.84	.439
Error	9090.1	42	216.43		
Within Subjects					
Time	165.38	1	165.38	3.08	.087
Group by Time	154.96	2	77.48	1.44	.248
Error	2256.67	42	53.73		

Table 17

Analysis Of Variance of the Self-Report CABS Scores

Source	SS	df	MS	F	p
Between Subjects					
Group	80.60	2	40.30	.19	.830
Error	9071.80	42	216.00		
Within Subjects					
Time	6.94	1	6.94	.40	.532
Group by Time	36.69	2	18.34	1.05	.359
Error	734.87	42	17.50		

Table 18

Analysis Of Variance of the Teacher-Report CABS Scores

Source	SS	df	MS	F	p
Between Subjects					
Group	227.62	2	113.81	.52	.599
Error	9200.53	42	219.06		
Within Subjects					
Time	336.40	1	336.40	8.36	.006
Group by Time	152.87	2	76.43	1.90	.162
Error	1689.73	42	40.23		

The multivariate analysis of variance of the RBPC scores, reported in Table 19, shows no significant main effect for group, but shows a significant main effect for time. No significant group by time interaction was found.

Table 19

Multivariate Analysis of Variance of RBPC Scores

Source of Variance	Wilks' Lambda	Hypoth. df	Error df	Multivariate F	Sig. of F
Group	.65657	12.00	74.00	1.4437874	.166
Time	.57208	6.00	37.00	4.61265	.001
Group by Time	.65275	12.00	74.000	1.46603	.157

Research Questions Revisited

In this section the research questions posed at the end of Chapter 2 are reviewed in light of the results obtained. The criterion level set for the rejection of the null hypothesis for each question was an alpha level of .05.

The first question asked whether intermediate-aged socially unskilled children would be able to retain the content of either a problem-solving program or a problem-solving plus assertiveness training program equally well, as evidenced by an ability to recall the specific problem-solving steps taught. Also, it was questioned whether this ability would be superior to that of those not receiving instruction. Both treatment groups were found to be significantly

better than the Control group on naming problem-solving steps, with no significant difference between treatment groups.

The next three questions involved transfer of learning. The first of these addressed the issue of the generation of alternative strategies to solve difficult interpersonal problems. Specifically, the question asked whether, when presented with a description of a problematic social situation, socially unskilled children receiving either a problem-solving program or a problem-solving assertiveness training program would generate significantly more strategies than socially unskilled children not receiving training. In addition to this, it was asked whether the children receiving the PS/AT program would produce significantly more strategies than those receiving the PS program. The results of the research indicate that the treatment groups generated significantly more strategies than the Control group, but there was no significant difference between the treatment groups in terms of the number of strategies produced. Further analysis revealed that the treatment groups generated a significantly greater number of passive and aggressive strategies than the Control group. The treatment groups were not found to generate a significantly greater number of assertive strategies than the Control group, although the results approached significance ($F(1,42) = 2.98$, $p=0.092$).

The second transfer of learning question involved changes in attitudes brought about by problem-solving training. The question asked whether the treatment programs would be effective in changing intermediate-aged, socially unskilled children's views of passivity, assertion, and aggression. Additionally, it was queried whether the PS/AT program would prove to be more effective in changing attitudes than the PS program. No significant differences were found

between the treatment groups and the Control group on the CATS--Evaluative Judgments semantic differential, and no significant differences were found between the two treatment groups on the same measure.

The last transfer of learning question asked whether the treatment programs would be more effective than no treatment in increasing feelings of self-efficacy in passive and aggressive intermediate-aged children as measured on a self-report scale, and, as well, whether the combined PS/AT program would be more effective than the PS program in improving the children's sense of self-efficacy. The results of the CSPI indicate no significant group differences over time.

The last two questions involved the generalization of the behavior to situations outside of the training context. The first of these asked whether the two treatment programs would be more effective than no treatment in increasing the social appropriateness of intermediate-aged socially unskilled children as measured on self-report and teacher-report scales, and whether the children participating in the PS/AT program would improve more than the children participating in the PS program in terms of social appropriateness. The results of an analysis of variance of the Self-Report Cabs scores showed no significant group differences over time. Similarly, the results of an analysis of variance of the Teacher-Report CABS scores also showed no significant group differences over time.

The last question addressed the issue of generalization outside the realm of social appropriateness to the area of general behavioral adjustment. The question focused on whether the children receiving treatment would evidence significant improvement in behavioral adjustment as compared with similar

children receiving no treatment, as measured by teachers on a global scale of adjustment. Further to this, the question was asked whether the children receiving the PS/AT program would show significantly more improvement in adjustment than those receiving the PS program. A multivariate analysis of variance of the RBPC scores revealed no significant group by time interaction.

Trends Within the Generalization Data

Since there were no statistical differences between any of the groups on the generalization data, a table was compiled to see if any trends in the data could be discerned. As can be seen from Table 20, the children receiving the problem-solving assertiveness training program showed superior pre- to posttest improvement on six out of the eight scales, with the children receiving the problem-solving program superior on one, and the children in the control group being superior on one. In terms of showing the least amount of improvement or regression, the PS group showed the least improvement on three scales, the Control group showed the least improvement on three scales, and the PS group and the Control group tied for least improvement on one scale. The PS/AT group showed least improvement on only one of the eight scales.

Table 20

Table Of Trends:

Superior Pre- to Posttest Improvement on Generalization Measures

Measure	Superior Improvement	Least Improvement
Self-Report CABS	PS/AT	PS*
Teacher-Report CABS	PS	PS/AT
RBPC Conduct Disorder	PS/AT	Control*
RBPC Socialized Aggression	PS/AT	Control*
RBPC Attention Problems-Immaturity	PS/AT	Control
RBPC Anxiety-Withdrawal	PS/AT	PS
RBPC Psychotic Behavior	Control	PS
RBPC Motor Excess	PS/AT	PS & Control

* Regression--scores worse at posttest

CHAPTER V

Discussion

This chapter discusses the results of the study in light of the research reviewed in earlier chapters. Student evaluations of the programs are summarized. Strengths and weaknesses of the research are then presented. Finally, possible implications of the findings are discussed.

Review of the Findings

As expected from prior research (Weissberg, Gesten, Rapkin, et al., 1981), the children who had received training were able to demonstrate retention of the problem-solving steps at the time of posttest and were superior in this regard compared to children who had not received training.

In terms of the generation of alternative strategies to difficult interpersonal situations, the results of the KISA are interesting. At the time of pretest, both the aggressive students and passive students in all three groups generated more assertive strategies than passive or aggressive strategies. With the exception of the aggressive children in the PS/AT group who produced equal numbers of aggressive and passive responses at pretest, the aggressive children produced more aggressive responses than passive and the passive children produced more passive responses than aggressive at pretest. Stated simply, all groups produced more assertive responses at pretest, with the passive and aggressive students in most groups producing more passive or aggressive responses consistent with their response style. For the most part, the aggressive students generated only slightly more aggressive than passive responses, but the passive children generated far fewer aggressive responses than either of the other two types at pretest. Without having a control group of socially skilled

children, one can not comment on the relative proportions of aggressive responses made by the aggressive children as compared to normal controls, but in comparison with the passive children, the aggressive children at pretest produced a greater number of aggressive responses. In terms of aggressive children generating fewer solutions than socially skilled controls (Asarnow & Callan, 1985; Richard & Dodge, 1982), again this study can not address this issue, although as compared to passive children, the aggressive children prior to training produced a slightly greater number of strategies overall.

As far as not producing strategies from all three response categories, this was not found to be the case with aggressive students at pretest. It was the passive students who were more restricted in their range of responses, generally caused by the exclusion of aggressive strategies from their repertoire prior to social skills training.

In looking at the effects of social skills training on the generation of alternative strategies on the KISA, the results are somewhat perplexing. Both treatment groups showed significant increases in the number of passive and aggressive strategies produced from pretest to posttest as compared to the no treatment Control, while the increases in the assertive strategies only approached significance. At posttest, all three groups continued to produce more assertive strategies than passive or aggressive strategies. The increase in passive strategies in the PS/AT group is accounted for by the proportionately larger number of passive strategies given by the aggressive children. The increase in aggressive strategies is accounted for by the proportionately larger number of aggressive strategies given by the passive children. In the PS group, the proportions of passive, assertive, and aggressive strategies given by the

passive and aggressive children remained virtually unchanged from pre- to posttesting. What seems to have happened is that, although there were no significant differences between the two treatment groups on the number of strategies generated, the children in the PS group produced more strategies in the same proportions as prior to training, while the children in the PS/AT group increased their proportion of those strategies they had been least familiar with prior to training.

It could be speculated that increases in the generation of assertive strategies would be most difficult to achieve for two reasons. Firstly, all groups were already offering more assertive strategies prior to training than either of the other two types of strategies. Secondly, there may be an upper limit to the number of appropriate, assertive solutions to the interpersonal problems presented to the children. The finding that the PS/AT children were producing proportionately more responses from the categories opposite to their own response style is consistent with the objective of that program, that is, to have children generate strategies of all three types prior to selection of the strategy deemed most appropriate. The PS program, on the other hand, accepted freewheeling brainstorming which meant that those strategies most familiar to the children were the ones most likely to be mentioned. The questions unanswered by this research are whether there is any long-term benefit to having children increase the number of strategies generated, and whether it is beneficial to have them produce proportionately more strategies of the type least consistent with their response style. The question remains, are they more likely, in the long run, to select the most appropriate strategy if they have

considered a larger number of different options from each of the three categories.

In terms of the children's evaluations of the three ways of behaving on the CATS--Evaluative Judgments, there were no significant pre- to postprogram differences between groups in the children's ratings of passive, assertive, and aggressive responses. At pre- and posttest, all three groups rated assertion most positively, and aggression most negatively. Deluty (1983), in his research, suggested that social skills programs try to address the issue of children's overly positive views of aggression directly. The PS/AT program endeavored to do so by discussing the possible motivation behind aggressive, assertive, and passive behavior, and by emphasizing the positive consequences of assertion, and the negative consequences of passivity and aggression. The PS program evaluated each solution individually using set criteria, with no emphasis, in a general sense, on the negative outcomes of aggression.

A number of comments should be made at this point regarding the PS/AT program. It seemed that when questions were raised regarding why individuals are aggressive and why they are passive, this was a particularly sensitive issue for some group members. Behavior problems increased, and this impeded those who wanted to contribute from participating. If the group had been smaller, it would have been easier to facilitate the discussion. Also, judging from the group's reactions, more lessons should have been devoted to these issues than was possible within a sixteen-lesson program. One could speculate that a longer program with fewer participants may have been more effective in bringing about attitude change. It is also possible that evaluations of

behavior are very deep-rooted, being influenced by home and cultural values, and therefore difficult to change in a group context.

In response to the CATS--Evaluative Judgments questions regarding what you should do, what would make others feel best, and what would make you feel best, all three groups chose the assertive option more frequently, at pre- and posttest, as the one you should do and the one which would make you feel best. This finding is consistent with that of Deluty (1983). At pretest, all groups chose the passive response more often as the one which would make others feel best. Again, this is consistent with Deluty's (1983) finding. The two treatment groups showed pre- to posttest increases in the number of passive responses chosen as making the other person feel best. All three groups showed pre- to posttest decreases in the numbers of passive responses chosen as those you should do and those which would make you feel best. Unlike the Control group, both treatment groups showed decreases in the numbers of assertive responses chosen as making the other person feel best, and increases in the number of aggressive responses chosen as making the other person feel best. All three groups at posttest more frequently selected aggressive responses as making them feel better. The PS/AT group showed increases in the number of assertive responses chosen as making them feel best, while the PS group showed decreases in this category.

On the CSPI, no significant pre- to posttest group differences were found. All groups at pretest exceeded the expected mean score for the measure and all groups showed some pre- to posttest increases. This finding was interesting in that all the children in the study were deemed by their classroom teacher as socially unskilled, yet they rated themselves as socially more capable than the

standardization sample of children. In administering this measure of self-efficacy, it seemed that the children were giving themselves an unrealistically high rating on the ease with which they handled social situations. Susan Harter (1982) suggests that a program goal "should be to foster a realistic sense of competence rather than enhancement per se" (p. 96). Since the socially unskilled children had higher than expected self-report ratings of self-efficacy, increases in self-efficacy would not necessarily be considered positive. Programs for socially unskilled children should, perhaps, endeavor to have the children understand their areas of difficulty so that they accept responsibility for initiating the process of change, and then take credit when the change pays off.

It is interesting to note that the pretest mean Self-Report CABS scores of the PS/AT group, the PS group, and the Control group all exceeded one standard deviation above the mean of the standardization sample. This suggests that the teachers were able to select, with a great degree of accuracy, children who, by their own self-report, are passive and aggressive. As well, the pretest mean scores of the three groups on the Teacher-Report CABS all exceeded the mean of the standardization sample by more than two standard deviations, and, in the case of the PS group, by more than three standard deviations. Thus, there seems to be a great deal of concurrence between teacher nominations and the two CABS measures.

No significant pre- to posttest group differences were found on any of the generalization measures. Unlike other social problem-solving programs which have been found to enhance social competency or behavioral adjustment, the two programs offered may have been too short in duration to effect measureable change in these areas. Alternatively, the changes in cognition

may have been a precursor to increased behavioral adjustment. Perhaps the measures at posttest were administered before such behavioral change had taken place. The table of trends which indicates that the PS/AT group showed superior improvement, although not to the point of reaching statistical significance, on six of the eight generalization scales, suggests that further research is warranted to determine if changes to the program could bring about improvement on these outcome measures.

Student Response to the Programs

One of the most rewarding aspects of the research was seeing the group members participate enthusiastically during sessions, and observing the ensuing development of group cohesion. Students in both groups responded very favourably to the behavioral contracting instigated to provide incentive and maintain control. They seemed to enjoy earning points for correctly answering challenge questions and, with the exception of some very disruptive students, tried very hard to maintain their points on the response-cost section of their contracts. The students were not only concerned about their own point totals, but were also concerned about how their group was doing as a whole. Some competitiveness developed when each group learned that the other group was involved in a group contract as well. This competitiveness was discouraged and the groups were encouraged to achieve their own personal best. As it turned out, both groups earned and lost points at similar rates so that the group rewards were earned at the same time.

During the last session of both programs, group members were asked to complete a program evaluation questionnaire anonymously, stating what they liked about the program they had been involved in, what they disliked, what

could have been done to make the program better, how much they liked the groups, and whether they thought the program would be valuable for students the following year. All the students in the PS/AT group and all of the students in the PS group except one, felt that the program should be carried on next year. On a four point rating scale asking how much the student enjoyed the group, with four being the maximum, the PS/AT group's average rating was 3.47 and the PS group's average rating was 3.6. In response to the question asking what the student liked most about the social skills program, the most common response from students in both groups was that they liked the reinforcement they could earn on their contracts. Many mentioned that they liked the point system, the role playing, and the challenge questions. Others mentioned that they enjoyed learning the problem-solving steps.

In terms of what was least liked about the social skills program and what could be done to improve it, one comment repeatedly made involved the inadequacy of the physical setting. Members of both groups requested space more appropriate to the needs of their group. The only space available within the school was in a kindergarten classroom not being used in the afternoon. The room was crowded and contained only small chairs and three low tables. The students were in close proximity to one another and were uncomfortable, a difficult situation at the best of times, but an extremely difficult situation with a population of socially unskilled children, many of whom were volatile and explosive. There was little space to role play, and very little privacy to discuss and set up small group role plays. In addition to the comments about the physical location, a number of students from both groups mentioned that they did not like losing points off their contract. Others wanted the program to

continue longer, to offer more points or larger incentives, or to be taught to the whole school. Students from both groups mentioned their displeasure with students who were misbehaving and were not listening to the instructors. It was suggested by a number of students that the programs run with "more good people" and that it should include only those "not having problems."

Perhaps the most inspiring feedback came as unsolicited comments from group members when the groups were close to termination. Students from both groups asked if their group could be extended, despite the fact that the school year was drawing to a close. They also asked whether the program instructors would be back the next year to continue the programs. One particularly passive boy took the opportunity to discuss privately what he had gained from the PS/AT program, saying that he had recently made some successful attempts at being assertive and that he was feeling good about himself. The feedback from the teachers confirmed that certain of the students were successfully problem solving difficult situations, and, for their efforts, were now being viewed as leaders within their classrooms.

Strengths and Weaknesses of the Study

Like all research, the present study has its various strengths, but also its limitations. One obvious limitation is the lack of parental evaluation measures. As the study was originally conceptualized, parent feedback was seen as important in order to evaluate the degree of generalization of the skills outside the school environment. In discussing the study with school personnel, they strongly suggested that the parental evaluation component be eliminated because they feared that if it was not, the study might be put in jeopardy. Based on their experience throughout the school year, they felt that a fair number of the

parents would likely not grant permission for their child to participate in the program if there were any requirements made of them. Some of the parents did not have English as their first language and the services of a number of interpreters would have been required. As it would have been very costly to employ outside people to assist in data collection, either to interpret the tests, to discuss with parents individually the nature and extent of their involvement, or to follow up on forms that had not been returned, this component of the program was regretfully dropped.

Another limitation of the research was the failure to use formal observations to evaluate social behaviors. Again, this decision was based on resource concerns. It would have proven very costly to train observers to rate the children's social skills and to employ the observers over the period of time necessary to target and rate each child during a period of free play, both before the start of the program and again after its completion.

Since no parental evaluation was completed, and no formal observation techniques were used, reliance was upon self-report and teacher-report measures. Both of these evaluation techniques are subject to rater bias. The teachers of the students who participated in the study commented on how excessively long the measures were and stated that they did not feel that they had adequate information to answer many of the questions included in these measures. If they had not received direct information from the supervision aides regarding the appropriateness of the children's behavior on the playground, the teachers had to judge the social skills of their students solely from their observations within the classroom. This, they said, gave them more information

about their students' classroom social behavior than about specific social skills deficits.

The children involved in the study complained, as well, about the number and length of the various assessment instruments. In particular, the students found the CATS--Evaluative Judgments measure to be long and tedious, and many found the semantic differential format difficult to complete due to their unfamiliarity with this type of instrument. Some whose first language was not English did not understand the abstract concepts presented in the semantic differential and needed to have various words defined. As the children tired, they seemed to be giving more random responses and needed to be prompted to read each question before answering. It is possible that the difficulty the children had with this measure affected its validity.

Another limitation of this study is the fairly small size of the sample. A larger sample size would have required conducting treatment groups in a second comparable school within the District. This would have meant the involvement of other personnel, as the principal investigator had negotiated a schedule with the host school which involved conducting two groups per afternoon for three afternoons a week. Since in most schools mornings are usually devoted to academic subjects, a second instructor would have been required to run the afternoon programs concurrently in another school. Limited resources prohibited hiring and training a second instructor.

Without the option of presenting the programs in another location, and being acutely aware that small sample size is a widespread problem when doing research on the relative effectiveness of different therapeutic techniques with children (O'Leary & Turkewitz, 1978), the decision was made to conduct

the two treatment groups with up to 20 participants in each group. In actuality, the two treatment groups ran, when at their maximum, with 17 and 18 participants per group. Because of the types of problems evidenced by at least half of the groups members, including extreme aggression and impulsivity, the size and composition of the groups became the most serious problem encountered. It quickly became evident that some of the children referred to the programs were not candidates for treatment within a group setting. These were belligerent, disruptive, openly hostile children who tried to interfere with the group process. Two children, one from each treatment group, were screened for, or accepted, into the district social adjustment class within the same school year. Many more evidenced the need for intensive therapeutic intervention but, due to the shortage of spaces within the specialized school programs, were unable to get the attention they needed. Management of the groups became of primary importance if any learning was to take place. The individual and group contracts were instrumental in maintaining control. The use of time out and trips to the office to problem solve with the principal were also helpful techniques to use with children whose behavior was unacceptable and who did not respond to redirection. Overall, control was maintained, but it must be considered a weakness of the research that so many dysfunctional children were grouped together at any one time.

The cross-grade groupings that were employed could be considered a strength of this research, with some inherent problems. The participants in the groups got to know and share experiences with other intermediate-aged children not in their class with whom they would likely have some contact during recess and lunch hour. The participants considered the groups to be special

because they were not offered to everyone. Certain group members even suggested that their friends try to "get in" the group and interested students approached the group leaders about what they had to do to become a participant. Since three grades and four classes were represented in the groups, there was a greater likelihood that more students would be involved in incidental learning of the problem solving process than if the programs were offered to two intact classroom groups of the same grade. One problem with the cross-grade grouping was the scheduling difficulties that were created. This was resolved with flexibility and patience on the part of the teachers. A second potential problem was the possibility that the younger children would model the inappropriate behavior of the older children. This did not appear to happen, but does highlight the importance of maintaining a positive atmosphere in the group through consistent management of inappropriate behavior.

Another strength of the program was the inclusion of a mix of passive and aggressive socially unskilled children in the same group. Some of the passive children became models in the group, taking a leadership role in the role plays, and volunteering to answer challenge questions, which would not have been as likely to happen if their socially skilled assertive counterparts had been included. The passive children also benefitted from the contagious enthusiasm of the aggressive children, many of whom enjoyed the limelight of the role plays by improvising scenes and trying to be humorous.

The aggressive children certainly benefitted from the inclusion of the passive children, since a homogeneous group of aggressive children would likely have proven to be countertherapeutic. The passive children modelled a less impulsive, more thoughtful approach to situations. Also, the aggressive

children were less likely to feel that they had been singled out as needing to attend a group for "bad kids" if, as they looked around, they saw quiet, reserved children in the group as well. One possible problem which the instructors were very aware of, and watchful for, was the possible victimization of the passive children by the aggressive children. This did not turn out to be a problem, and, if any conflict between group members arose, it was much more likely to be between two aggressive children than between a passive and an aggressive child.

Implications for Future Research and Practice

Given the results of this and other studies of social problem solving training, one must view the efficacy of this type of treatment strategy with guarded optimism. The promise held by social problem-solving programs was the expectation that, by focusing on cognitive processes that are hypothesized to mediate adjustment rather than on situationally-specific discrete skills, generalization is assured (Pellegrini & Urbain, 1985; Urbain & Kendall, 1980). Existing programs have endeavored to teach children how to think, not what to think. Clearly, research has shown that children's problem-solving abilities can be enhanced through training. The relationship between problem-solving ability and behavioral adjustment, however, remains in question (Durlak, 1983). Unlike Spivack and Shure's (1974) consistent finding of a relationship between social problem-solving and behavioral adjustment, other researchers have not been as successful, either finding that increased problem-solving ability did not impact on behavioral adjustment (Camp et al., 1977; Kendall & Finch, 1978; McClure, Chinsky, & Larcen, 1978; Olexa & Forman, 1984), or, if interpersonal functioning was found to improve, that this improvement was unrelated to gains

in problem solving (Weissberg, Gesten, Carnrike, et al., 1981; Weissberg, Gesten, Rapkin, et al., 1981; Yu, Harris, Solovitz, & Franklin, 1986). Some investigators have failed to include either problem-solving tests or adjustment measures (Pedro-Carroll & Cowen, 1985; Poitras-Martin & Stone, 1977; Vaughn & Ridley, 1983; Zahavi & Asher, 1978).

Methodological problems in the field are pervasive. It is not surprising that divergent findings are prevalent, with various researchers drawing from different populations, using different intervention programs, and applying different measures. Many programs employ a variety of other treatment approaches along with social problem solving. Research is needed to determine the "active therapeutic ingredients" in such programs (Durlak, 1985; Pellegrini & Urbain, 1985; Urbain & Kendall, 1980). Despite a number of researchers having found postprogram improvements in behavioral adjustment to be unrelated to increased problem-solving ability, few studies have used attention-placebo groups to control for adult attention and group inclusion (Durlak, 1983; Urbain & Kendall, 1980). Where attention-control groups can not be used, research should focus on comparing social problem solving with alternative treatments, or should employ a component contrast design (Pellegrini & Urbain, 1985; Urbain & Kendall, 1980). When comparing treatments, or components thereof, therapy manipulation checks should be made to ensure that the interventions being delivered are, in fact, distinct (Pellegrini & Urbain, 1985; Urbain & Kendall, 1980).

Assessing the relationship between social skills and behavioral adjustment poses still another problem. Due to the cost and time involved, studies generally do not include an independent evaluation of social

competence based on observational methods. If teachers are relied upon to implement, or assist in implementing, social skills programs, and are program evaluators as well, rater bias invariably comes into question. There is insufficient follow-up (Pellegrini & Urbain, 1985), which is particularly troublesome if the intervention strategies produce long-term gains with little, if any, measureable short-term changes. The ability of the assessment instruments to detect change poses yet another problem for researchers in this field. Lacking a consensus of opinion regarding which measures are properly validated and adequately sensitive to change, researchers are encouraged to use multitrait-multimethod approaches (Gresham, 1986) to assess a diversity of cognitive, behavioral, and social outcomes.

Additional methodological problems result from the assumption that all children require, or would profit from, social problem-solving training (Durlak, 1983). Little is known about what goes through children's minds when faced with social problems (Urbain & Kendall, 1980) or, in particular, whether socially competent children regularly engage in problem-solving when faced with difficult interpersonal situations. As well, there are no assessment instruments comprehensive enough to pinpoint the deficits in specific behavioral skills or cognitive processes which underlie the particular social difficulties a child may be experiencing (Urbain & Kendall, 1980). The development of such an instrument would facilitate the selection of the therapeutic intervention or interventions most likely to be beneficial to the child.

In terms of program content, Durlak (1983) points out that "dialoguing" is considered, in Spivack and Shure's program, to be an essential component for generalization to occur. Dialoguing is teacher-directed, in vivo application of

the problem-solving process throughout the school day whenever social problems arise. Many social problem-solving programs do not include this component, or, if this component is included, standardization has not been ensured. Perhaps those who have designed programs based on the work of Spivack and Shure, and who have not included this technique, have left out the essential ingredient that led to success in the original program. Pellegrini and Urbain (1985) emphasize that while social problem-solving training is "sensible and appealing as a social skills training approach, outcome data indicate that its successful application is a matter of considerable complexity" (p. 38).

Although not considered to be a cure-all, social problem-solving training continues to hold promise as a treatment modality with the potential of remediating existing social skills difficulties and enhancing overall emotional and behavioral adjustment. If we more clearly understood which components of this intervention are effective and which are not, we would be in a much better position to modify programs to increase their impact. The present study compared two different brainstorming approaches in their effects on the number and diversity of potential solutions generated, on attitudes towards alternative ways of behaving, on feelings of self-efficacy, and on social behavior and global adjustment. Rather than dismissing both programs as having no effect on attitudes, feelings of self-efficacy, or social behavior, future research could be directed towards improving on the inadequacies of the present research so that more meaningful conclusions can be drawn. The following suggestions are offered for those investigating this area further:

1. Sixteen sessions appears to be too brief an intervention to bring about enhancement in social skills. It was this researcher's observation that the

participants in both groups were just beginning to integrate the concepts that had been presented at the time that the groups were ending. Increasing the number of sessions would allow for repeated role play practice to help consolidate the skills. Once the skills were consolidated within the group context, one would expect that it would take time before they generalized to other settings.

2. To promote generalization, teachers could be given in-service training on the social problem-solving process being taught in the groups, or, if resources allow, could assist in conducting the groups. The teachers would then be in a position to promote the in vivo utilization of the problem-solving process when students were experiencing social problems.

3. To further promote generalization, homework assignments which encouraged the children to practice specific social skills in various social situations outside of school would have been a desirable addition to the programs offered. If parents were encouraged to become involved in facilitating the completion of their child's homework assignment, the benefit would be twofold. First, the parents would become aware of the social curriculum being taught, which would allow them to be more supportive of their child's attempts to implement the skills. Second, the children would be more likely to feel that the social curriculum had relevance outside the school if parents were involved with, and openly supportive of, the program.

4. A potentially valuable addition to the program would be the implementation of a parent education group offered concurrently with the children's social skills group. Parents could receive a rationale for social problem-solving training, could learn the steps involved in the problem-solving

process, and could discuss how to develop and use problem-solving skills within the context of the family. Parents could then encourage the use of the social problem-solving process when their children were faced with difficult interpersonal problems.

5. The adequacy and timing of the measures used seems to be of critical importance. If there are too many measures, if the measures are too long and of the same type, intermediate-aged children soon tire of the assessment phase, making it difficult to get their cooperation. If teachers are rushed and under stress (which they invariably are at the end of the school year), completion of the assessment instruments becomes excessively onerous, particularly if teachers have more than one measure to complete. Program length affects the timing of the measures. Longer programs allow teachers more time between administrations. They would be less likely to feel that they had just completed one set of forms before they were asked to do another, if programs were offered, for instance, for the full school year rather than for a few months.

6. Inclusion of parent ratings of social skills would have been an improvement in the design. Parents offer a perspective on their child's attitudes and behavior that can not be gleaned from teachers who generally see the child in only one setting. Also, parent ratings would assist in determining the generalization of focal skills beyond the group context.

7. Follow-up data a number of months after the completion of the program would have been very beneficial. It may be that changes in behavior occur very slowly following introduction to new concepts, requiring evaluation of situations as to the appropriateness of the application of the new skills, followed by trial-and-error learning with feedback and reinforcement from the environment,

before skills are consistently and effectively applied. Changes in behavior would promote further changes in attitudes. In the case of the present study, measures were completed immediately after the completion of the program, allowing no time for skills to be integrated into everyday behavior.

8. This type of group is not appropriate for children who are so seriously disturbed that they are physically assaultive of other children in the classroom setting. If teacher referrals are used, as is often the case with counselling programs within schools, teachers should be made aware of this selection criterion. If classroom observations can be arranged in advance, the referred student's ability to work within small groups can be observed and discussed with the teacher.

9. Group size and composition are factors which can not be overemphasized. There are inherent problems with having too many aggressive or too many passive children within the same group. Groups should be small enough that control is easily maintained, so that no one is able to constantly derail the group from its objectives. Also, in discussing the group with the referring teachers, it is important to ascertain whether it would be counterproductive to group certain children together. Composition of the group in terms of age, grade, gender, response style (passive or aggressive), appropriateness for a group, and ability to work with other referred students should be considered during the screening process. Those who do not fit should be given an opportunity to participate in another group, be wait-listed, or be referred for other services.

Finally, and perhaps most importantly, further research should focus on the role brainstorming plays in children's social problem solving. Due to the problems encountered when brainstorming with socially unskilled children, many existing children's social problem-solving programs deviate, each in their own ways, from the process of freewheeling brainstorming generally encouraged when problem solving with adults. The present study compared freewheeling brainstorming to brainstorming which incorporated the process of the generation and evaluation of general strategies. Although no statistically detectable differences were found between the two approaches, trends in the data offer some limited support for the efficacy of the combined approach. Further research is needed to systematically investigate the apparent increase in the proportions of aggressive strategies generated by the passive children and passive strategies generated by the aggressive children receiving the combined program. The ramifications of this outcome for overall behavioral adjustment warrant further inquiry.

APPENDIX A

Letter of Consent

April 12/91

Dear _____,

The Ministry of Education in this province states that the human and social development of children is a shared responsibility of the school, the family, and the community. At the school we are responsible for organizing programs that meet the needs of our students in the social development area. I would to describe to you a new program that has been developed to enhance the social skills of our students.

Mrs. Kathy Sheppard, a health professional who has worked with certain students in our school during the past year, has developed a program for training children in social skills. She will be offering this program to groups of intermediate children for 45 minute sessions twice weekly for a period of eight weeks. Your child, _____, has been selected for this program.

As Mrs. Sheppard has developed this program as part of her Master's thesis at Simon Fraser University we require written consent from parents before a child can participate. Part of the program will be the testing of the student prior to attending the program and immediately afterward to determine gains in social skills.

Mrs. Sheppard is interested in finding out if her program helps children make marked progress in the use of appropriate social skills. We are also interested in this.

I feel this program will prove to be valuable to the participating students and I hope you will agree and return the permission slip as soon as possible.

Sincerely,

Principal

As parent/guardian of _____, I give consent for participation in the social skills training program being conducted by Mrs. Sheppard.

Date _____ Signature _____

APPENDIX B

Means and Standard Deviations on the Dependent Measures

Variable	Condition	Pre-Treatment		Post-Treatment	
		Mean	Standard Deviation	Mean	Standard Deviation
Content Measure:					
Problem-Solving Steps Interview	PS/AT	1.33	3.60	16.93	11.31
	PS	.27	1.03	15.73	9.38
	Control	.53	1.41	1.33	2.47
Transfer Measures:					
KISA Total Strategies	PS/AT	12.00	4.46	17.67	6.43
	PS	11.33	4.29	15.47	6.16
	Control	11.47	9.31	10.33	4.05
KISA Total Passive Strategies	PS/AT	3.93	1.83	6.00	1.81
	PS	3.47	1.96	4.73	2.87
	Control	3.53	2.48	3.33	1.59
KISA Total Assertive Strategies	PS/AT	6.00	3.72	7.47	3.46
	PS	4.80	2.68	6.80	2.86
	Control	5.13	4.37	5.00	2.93
KISA Total Aggressive Strategies	PS/AT	2.07	2.94	4.20	2.54
	PS	3.07	2.71	3.93	3.65
	Control	2.80	3.75	2.00	2.04

APPENDIX B (Continued)

Means and Standard Deviations on the Dependent Measures

Variable	Condition	Pre-Treatment		Post-Treatment	
		Mean	Standard Deviation	Mean	Standard Deviation
CATS--Eval. Aggressive Total*	PS/AT	285.33	61.29	307.07	62.41
	PS	285.00	59.81	278.27	75.50
	Control	283.20	59.85	307.60	56.32
CATS--Eval. Assertive Total*	PS/AT	154.27	40.83	133.27	60.68
	PS	151.20	59.10	152.07	50.50
	Control	158.07	41.05	128.33	56.32
CATS--Eval. Passive Total*	PS/AT	234.73	35.92	257.87	66.87
	PS	254.93	57.49	284.13	55.69
	Control	266.20	45.68	271.20	58.04
CATS--Eval.: You Feel Best to be Passive	PS/AT	2.27	2.25	1.53	1.81
	PS	2.53	1.60	1.47	1.19
	Control	2.13	1.55	1.67	1.68
CATS--Eval.: You Feel Best to be Assertive	PS/AT	5.87	2.50	6.33	2.72
	PS	5.53	2.45	5.47	3.31
	Control	5.67	2.32	5.73	2.58

*Lower scores indicate more positive rating

APPENDIX B (Continued)

Means and Standard Deviations on the Dependent Measures

Variable	Condition	Pre-Treatment		Post-Treatment	
		Mean	Standard Deviation	Mean	Standard Deviation
CATS--Eval.:	PS/AT	1.87	2.17	2.13	2.53
You Feel Best to be	PS	1.93	2.63	3.07	3.58
Aggressive	Control	2.20	2.54	2.60	2.72
CATS--Eval.:	PS/AT	5.00	2.10	5.80	2.76
Others Feel Best--	PS	5.13	2.62	5.67	2.85
Passive	Control	4.87	3.02	4.80	2.93
CATS--Eval.:	PS/AT	4.33	1.59	3.40	2.29
Others Feel Best--	PS	4.33	2.47	3.07	2.19
Assertive	Control	4.00	2.60	4.80	2.68
CATS--Eval.:	PS/AT	.67	1.40	.80	1.61
Others Feel Best--	PS	.53	.83	1.27	2.63
Aggressive	Control	1.13	1.96	.40	.83
CATS--Eval.:	PS/AT	2.27	1.34	1.67	2.09
Should Do--Passive	PS	1.93	1.49	1.67	1.29
	Control	2.00	1.36	1.47	1.30
CATS--Eval.:	PS/AT	6.53	1.96	7.20	2.98
Should Do--Assertive	PS	5.93	2.37	6.33	2.61
	Control	6.67	1.88	7.67	1.35

APPENDIX B (Continued)

Means and Standard Deviations on the Dependent Measures

Variable	Condition	Pre-Treatment		Post-Treatment	
		Mean	Standard Deviation	Mean	Standard Deviation
CATS--Eval.:	PS/AT	1.20	2.27	1.13	2.17
Should Do--	PS	2.13	2.88	2.00	3.00
Aggressive	Control	1.33	1.92	.87	1.25
CSPI	PS/AT	67.07	6.73	68.67	8.10
	PS	69.60	12.44	75.93	10.01
	Control	70.60	14.75	70.80	15.06
Generalization Measures:					
Self-Report	PS/AT	21.47	11.72	20.27	11.82
CABS	PS	22.07	11.26	23.87	12.31
	Control	20.53	8.25	21.60	8.78
Teacher-Report	PS/AT	30.60	12.88	30.13	12.79
CABS	PS	36.80	7.85	30.00	11.89
	Control	31.93	9.83	27.60	12.21

APPENDIX B (Continued)

Means and Standard Deviations on the Dependent Measures

Variable	Condition	Pre-Treatment		Post-Treatment	
		Mean	Standard Deviation	Mean	Standard Deviation
RBPC--Conduct Disorder	PS/AT	11.53	12.68	6.27	9.15
	PS	11.93	12.80	9.60	11.93
	Control	7.73	10.48	8.00	10.86
RBPC--Socialized Aggression	PS/AT	2.87	6.00	2.07	4.91
	PS	5.00	8.20	4.33	7.20
	Control	4.53	5.89	4.87	5.78
RBPC--Attention Problems/ Immaturity	PS/AT	7.13	8.69	3.67	4.98
	PS	7.20	7.17	4.93	6.58
	Control	6.87	7.86	5.13	5.19
RBPC--Anxiety/ Withdrawal	PS/AT	8.27	5.15	4.67	4.81
	PS	3.47	3.40	2.73	3.96
	Control	6.53	5.08	5.60	4.14
RBPC--Psychotic Behavior	PS/AT	.33	1.05	.33	.90
	PS	.93	2.12	1.40	3.14
	Control	.87	1.19	.73	1.54
RBPC--Motor Excess	PS/AT	2.33	2.69	1.00	1.65
	PS	1.73	2.46	1.73	2.79
	Control	2.27	2.76	2.27	2.40

APPENDIX C

Means and Standard Deviations on the Dependent Measures for Passive and Aggressive Subjects

Variable	Condition	Pre-Treatment		Post-Treatment	
		Mean	Standard Deviation	Mean	Standard Deviation
Content Measure:					
Problem-Solving Steps Interview	**Passive:**				
	All groups	.696	2.601	10.348	11.919
	PS/AT	1.500	4.243	18.750	12.233
	PS	.000	.000	11.429	11.414
	Control	.500	1.414	1.000	1.852
	Aggressive:				
	All groups	.727	2.004	12.364	10.229
	PS/AT	1.143	3.024	14.857	10.699
	PS	.500	1.414	19.500	5.425
	Control	.571	1.512	1.714	3.147
Transfer Measures:					
KISA Total Strategies	**Passive:**				
	All groups	10.478	4.305	14.565	6.006
	PS/AT	13.625	4.069	19.375	4.779
	PS	8.714	2.628	14.429	5.127
	Control	8.875	4.291	9.875	4.051
	Aggressive:				
	All groups	12.773	7.825	14.409	6.801
	PS/AT	10.143	4.413	15.714	7.847
	PS	13.625	4.241	16.375	7.170
	Control	14.429	12.713	10.857	4.298

APPENDIX C (Continued)

Means and Standard Deviations on the Dependent Measures for Passive and Aggressive Subjects

Variable	Condition	Pre-Treatment		Post-Treatment	
		Mean	Standard Deviation	Mean	Standard Deviation
KISA Total Passive Strategies	**Passive:**				
	All groups	3.870	1.984	4.957	2.325
	PS/AT	5.000	1.604	6.500	1.195
	PS	3.000	1.291	5.000	2.582
	Control	3.500	2.449	3.375	2.066
	Aggressive:				
	All groups	3.409	2.175	4.409	2.462
	PS/AT	2.714	1.254	5.429	2.299
	PS	3.875	2.416	4.500	3.251
	Control	3.571	2.699	3.286	.951
KISA Total Assertive Strategies	**Passive:**				
	All groups	5.174	3.200	7.043	3.337
	PS/AT	7.125	4.486	8.750	2.964
	PS	4.286	1.799	7.000	2.828
	Control	4.000	1.604	5.375	3.583
	Aggressive:				
	All groups	5.455	4.068	5.773	2.991
	PS/AT	4.714	2.289	6.000	3.606
	PS	5.250	3.327	6.625	3.068
	Control	6.429	6.161	4.571	2.149

APPENDIX C (Continued)

Means and Standard Deviations on the Dependent Measures for Passive and Aggressive Subjects

Variable	Condition	Pre-Treatment		Post-Treatment	
		Mean	Standard Deviation	Mean	Standard Deviation
KISA Total	**Passive:**				
Aggressive	All groups	1.435	2.212	2.565	2.212
Strategies	PS/AT	1.500	3.117	4.125	2.532
	PS	1.429	1.813	2.429	1.813
	Control	1.375	1.685	1.125	.991
	Aggressive:				
	All groups	3.909	3.463	4.227	3.380
	PS/AT	2.714	2.812	4.286	2.752
	PS	4.500	2.619	5.250	4.432
	Control	4.429	4.860	3.000	2.517
CATS--Eval.	**Passive:**				
Aggressive	All groups	298.043	57.384	315.217	51.501
Total*	PS/AT	286.000	74.041	315.625	68.475
	PS	315.714	39.029	315.714	38.638
	Control	294.625	55.410	314.375	48.365
	Aggressive:				
	All groups	270.364	58.472	279.273	73.840
	PS/AT	284.571	48.655	297.286	58.386
	PS	258.125	63.880	245.500	86.553
	Control	270.143	66.356	299.857	67.383

*Lower scores indicate more positive rating

APPENDIX C (Continued)

Means and Standard Deviations on the Dependent Measures for Passive and Aggressive Subjects

Variable	Condition	Pre-Treatment		Post-Treatment	
		Mean	Standard Deviation	Mean	Standard Deviation
CATS--Eval.	**Passive:**				
Assertive*	All groups	149.739	45.676	129.130	50.501
Total	PS/AT	138.375	31.346	105.250	35.423
	PS	150.857	68.468	142.857	51.376
	Control	160.125	35.835	141.000	59.137
	Aggressive:				
	All groups	159.500	48.411	147.045	60.390
	PS/AT	172.429	44.966	165.286	69.892
	PS	151.500	54.471	160.125	51.679
	Control	155.714	49.213	113.857	53.499
CATS--Eval.	**Passive:**				
Passive	All groups	240.957	40.227	270.304	53.229
Total*	PS/AT	223.625	35.753	270.125	70.893
	PS	231.143	50.700	255.143	40.014
	Control	266.875	19.924	283.750	45.496
	Aggressive:				
	All groups	263.455	53.396	271.864	67.610
	PS/AT	247.429	34.151	243.857	64.357
	PS	275.750	57.834	309.500	57.039
	Control	265.429	66.367	256.857	70.676

*Lower scores indicate more positive rating

APPENDIX C (Continued)

Means and Standard Deviations on the Dependent Measures for Passive and Aggressive Subjects

Variable	Condition	Pre-Treatment		Post-Treatment	
		Mean	Standard Deviation	Mean	Standard Deviation
CATS--Eval.:	**Passive:**				
You Feel Best	All groups	2.391	1.588	1.913	1.649
to be Passive	PS/AT	1.875	1.553	1.375	1.768
	PS	2.714	1.496	2.000	1.155
	Control	2.625	1.768	2.375	1.923
	Aggressive:				
	All groups	2.227	2.022	1.182	1.368
	PS/AT	2.714	2.928	1.714	1.976
	PS	2.375	1.768	1.000	1.069
	Control	1.571	1.134	.857	.900
CATS--Eval.:	**Passive:**				
You Feel Best	All groups	6.261	2.115	6.652	2.479
to be Assertive	PS/AT	7.000	2.268	7.125	2.850
	PS	6.429	.976	7.286	1.380
	Control	5.375	2.560	5.625	2.774
	Aggressive:				
	All groups	5.091	2.524	5.000	3.008
	PS/AT	4.571	2.225	5.429	2.440
	PS	4.750	3.105	3.875	3.758
	Control	6.000	2.160	5.857	2.545

APPENDIX C (Continued)

Means and Standard Deviations on the Dependent Measures for Passive and Aggressive Subjects

Variable	Condition	Pre-Treatment		Post-Treatment	
		Mean	Standard Deviation	Mean	Standard Deviation
CATS--Eval.:	**Passive:**				
You Feel Best to	All groups	1.348	2.187	1.435	2.171
be Aggressive	PS/AT	1.125	1.808	1.500	2.000
	PS	.857	1.864	.714	1.496
	Control	2.000	2.828	2.000	2.828
	Aggressive:				
	All groups	2.682	2.476	3.818	3.172
	PS/AT	2.714	2.360	2.857	3.024
	PS	2.875	2.949	5.125	3.643
	Control	2.429	2.370	3.286	2.628
CATS--Eval.:	**Passive:**				
Others Feel	All groups	4.696	2.512	4.739	2.800
Best--Passive	PS/AT	5.125	2.588	5.875	3.182
	PS	5.000	2.082	5.143	2.734
	Control	4.000	2.928	3.250	1.982
	Aggressive:				
	All groups	5.318	2.607	6.136	2.713
	PS/AT	4.857	1.574	5.714	2.430
	PS	5.250	3.151	6.125	3.044
	Control	5.857	3.024	6.571	2.936

APPENDIX C (Continued)

Means and Standard Deviations on the Dependent Measures for Passive and Aggressive Subjects

Variable	Condition	Pre-Treatment		Post-Treatment	
		Mean	Standard Deviation	Mean	Standard Deviation
CATS--Eval.:	**Passive:**				
Others Feel	All groups	4.652	2.405	4.783	2.696
Best--Assertive	PS/AT	4.250	1.982	3.875	2.800
	PS	5.000	2.082	3.857	2.673
	Control	4.750	3.196	6.500	1.927
	Aggressive:				
	All groups	3.773	1.950	2.682	1.644
	PS/AT	4.429	1.134	2.857	1.574
	PS	3.750	2.765	2.375	1.506
	Control	3.143	1.464	2.857	2.035
CATS--Eval.:	**Passive:**				
Others Feel	All groups	.652	1.641	.478	1.534
Best--Aggressive	PS/AT	.625	1.768	.250	.707
	PS	.000	.000	1.000	2.646
	Control	1.250	2.121	.250	.707
	Aggressive:				
	All groups	.909	1.269	1.182	2.085
	PS/AT	.714	.951	1.429	2.149
	PS	1.000	.926	1.500	2.777
	Control	1.000	1.915	.571	.976

APPENDIX C (Continued)

Means and Standard Deviations on the Dependent Measures for Passive and Aggressive Subjects

Variable	Condition	Pre-Treatment		Post-Treatment	
		Mean	Standard Deviation	Mean	Standard Deviation
CATS--Eval:	**Passive:**				
Should Do--	All groups	2.000	1.044	1.565	1.273
Passive	PS/AT	1.875	1.246	1.000	1.195
	PS	2.143	.690	2.286	1.113
	Control	2.000	1.195	1.500	1.309
	Aggressive:				
	All groups	2.136	1.670	1.636	1.866
	PS/AT	2.714	1.380	2.429	2.699
	PS	1.750	1.982	1.125	1.246
	Control	2.000	1.633	1.429	1.397
CATS--Eval.:	**Passive:**				
Should Do--	All groups	7.304	1.579	8.130	1.290
Assertive	PS/AT	7.250	1.753	8.875	1.356
	PS	7.286	1.604	7.429	.976
	Control	7.375	1.598	8.000	1.195
	Aggressive:				
	All groups	5.409	2.085	5.955	2.836
	PS/AT	5.714	1.976	5.286	3.251
	PS	4.750	2.375	5.375	3.249
	Control	5.857	1.952	7.286	1.496

APPENDIX C (Continued)

Means and Standard Deviations on the Dependent Measures for Passive and Aggressive Subjects

Variable	Condition	Pre-Treatment		Post-Treatment	
		Mean	Standard Deviation	Mean	Standard Deviation
CATS--Eval.:	**Passive:**				
Should Do--	All groups	.696	1.428	.304	.635
Aggressive	PS/AT	.875	1.808	.125	.354
	PS	.571	1.512	.286	.756
	Control	.625	1.061	.500	.756
	Aggressive:				
	All groups	2.455	2.824	2.409	2.806
	PS/AT	1.571	2.820	2.286	2.812
	PS	3.500	3.162	3.500	3.464
	Control	2.143	2.410	1.286	1.604
CSPI	**Passive:**				
	All groups	69.435	11.433	70.913	11.985
	PS/AT	66.250	7.166	66.625	4.779
	PS	72.000	9.592	78.286	7.804
	Control	70.375	16.168	68.750	17.194
	Aggressive:				
	All groups	68.727	12.088	72.727	11.377
	PS/AT	68.000	6.633	71.000	10.708
	PS	67.500	14.832	73.875	11.740
	Control	70.857	14.241	73.143	13.120

APPENDIX C (Continued)

Means and Standard Deviations on the Dependent Measures for Passive and Aggressive Subjects

Variable	Condition	Pre-Treatment		Post-Treatment	
		Mean	Standard Deviation	Mean	Standard Deviation
Generalization Measures:					
Self-Report CABS	**Passive:**				
	All groups	16.652	5.356	16.087	6.360
	PS/AT	16.375	8.568	12.625	7.130
	PS	16.000	3.000	16.286	4.572
	Control	17.500	2.777	19.375	5.680
	Aggressive:				
	All groups	26.273	11.945	28.000	11.485
	PS/AT	27.286	12.672	29.000	10.000
	PS	27.375	13.298	30.500	13.310
	Control	24.000	11.121	24.143	11.320
Teacher-Report CABS	**Passive:**				
	All groups	28.696	10.738	24.478	11.809
	PS/AT	23.125	9.906	25.125	13.590
	PS	33.857	8.821	27.857	11.022
	Control	29.750	11.585	20.875	11.077
	Aggressive:				
	All groups	37.727	8.172	34.227	10.415
	PS/AT	39.143	10.621	35.857	9.720
	PS	39.375	6.346	31.875	13.032
	Control	34.429	7.435	35.286	8.674

APPENDIX C (Continued)

Means and Standard Deviations on the Dependent Measures for Passive and Aggressive Subjects

Variable	Condition	Pre-Treatment		Post-Treatment	
		Mean	Standard Deviation	Mean	Standard Deviation
RBPC--	**Passive:**				
Conduct	All groups	2.913	4.651	1.739	3.374
Disorder	PS/AT	3.875	6.728	1.000	2.828
	PS	2.429	3.994	1.571	2.440
	Control	2.375	2.722	2.625	4.596
	Aggressive:				
	All groups	18.227	12.208	14.455	11.603
	PS/AT	20.286	12.433	12.286	10.323
	PS	20.250	12.021	16.625	12.592
	Control	13.857	12.877	14.143	12.954
RBPC--	**Passive:**				
Socialized	All groups	.957	2.962	.913	2.644
Aggression	PS/AT	.375	1.061	.375	1.061
	PS	.143	.378	.000	.000
	Control	2.250	4.833	2.250	4.200
	Aggressive:				
	All groups	7.455	7.872	6.727	7.113
	PS/AT	5.714	8.056	4.000	6.831
	PS	9.250	9.498	8.125	8.271
	Control	7.143	6.230	7.857	6.149

APPENDIX C (Continued)

Means and Standard Deviations on the Dependent Measures for Passive and Aggressive Subjects

Variable	Condition	Pre-Treatment		Post-Treatment	
		Mean	Standard Deviation	Mean	Standard Deviation
RBPC--	**Passive:**				
Attention	All groups	3.565	4.571	2.130	3.946
Problems/	PS/AT	3.000	4.567	1.125	2.031
Immaturity	PS	4.286	6.626	2.857	6.694
	Control	3.500	2.507	2.500	2.138
	Aggressive:				
	All groups	10.727	8.746	7.136	5.882
	PS/AT	11.857	10.156	6.571	5.884
	PS	9.750	7.025	6.750	6.341
	Control	10.714	10.210	8.143	6.149
RBPC--	**Passive:**				
Anxiety/	All groups	6.130	3.992	3.870	3.900
Withdrawal	PS/AT	6.750	3.151	2.750	2.605
	PS	3.857	2.410	2.429	2.936
	Control	7.500	5.237	6.250	4.862
	Aggressive:				
	All groups	6.045	5.859	4.818	4.886
	PS/AT	10.000	6.608	6.857	5.956
	PS	3.125	4.224	3.000	4.870
	Control	5.429	5.062	4.857	3.338

APPENDIX C (Continued)

Means and Standard Deviations on the Dependent Measures for Passive and Aggressive Subjects

Variable	Condition	Pre-Treatment		Post-Treatment	
		Mean	Standard Deviation	Mean	Standard Deviation
RBPC--	**Passive:**				
Psychotic	All groups	.130	.458	.043	.209
Behavior	PS/AT	.000	.000	.000	.000
	PS	.000	.000	.000	.000
	Control	.375	.744	.125	.354
	Aggressive:				
	All groups	1.318	1.961	1.636	2.770
	PS/AT	.714	1.496	.714	1.254
	PS	1.750	2.712	2.625	3.998
	Control	1.429	1.397	1.429	2.070
RBPC--Motor	**Passive:**				
Excess	All groups	1.130	1.140	.652	1.152
	PS/AT	1.250	1.282	.250	.463
	PS	.714	.951	.143	.378
	Control	1.375	1.188	1.500	1.604
	Aggressive:				
	All groups	3.136	3.256	2.727	2.781
	PS/AT	3.571	3.409	1.857	2.116
	PS	2.625	3.068	3.125	3.271
	Control	3.286	3.729	3.143	2.968

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