1988

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Children's Self-Efficacy and Perceived Problem-Solving Skills: An Investigation of Parental Communication Styles

A Thesis Presented to the Faculty of the Graduate School University of the Pacific

In Partial Fulfillment of the Requirements for the Degree Master of Arts

Presented by Deborah R. Woltersberger-Melcher

August, 1988
This thesis, written and submitted by

Deborah Rae Melcher-Wolfersberger

is approved for recommendation to the Committee on Graduate Studies, University of the Pacific.

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Dated 7/29/89
Acknowledgements

A number of persons greatly assisted me in the undertaking and completion of my thesis project. Dr. Esther Cohen helped me to identify an area of research interest and to conduct a thorough literature review. She also provided a great deal of assistance with the planning and conducting phases of the research project, particularly in the arrangement of a pilot study, which allowed for clarification and perfecting of the research design. Finally, Dr. Cohen assisted me with multiple revisions and editing throughout the writing phase.

Amy Anderson and Sue Ducato provided assistance throughout the conducting of the project, functioning as research assistants and data analyzers. Anne Costello helped with reliability analysis. Dr. Kenneth Beauchamp assisted greatly in the overall data analysis, providing direction, guidance, and interpretation of computer analyses. Dr. Martin Gipson assisted in the review of the final draft and provided support for further research publication.
Abstract

A number of studies have investigated the factors that lead to peer acceptance in children. Particularly, the problem-solving skills of accepted and unaccepted children have been examined, with differences being substantiated. The present study investigated the possibility that problem-solving skill differences may be attributed to varying self-efficacy levels in children. Further, the communication styles of parents of high vs. low self-efficacy children were examined by observing parent/child interactions in a problem-solving situation. The results indicated that children did not differ in their ability to identify effective solutions to problems; rather, they did differ in their perceived ability to engage in effective solutions, with high self-efficacy children choosing more appropriate solutions as those that they would actually enact. Low self-efficacy children, on the other hand, chose less appropriate solutions as those that they would engage in. Finally, it was discovered that parents of high self-efficacy children utilized more positive types of messages (praise and modeling)
than did those parents of low self-efficacy children. Low self-efficacy children had parents who utilized more controlling and negative types of communication styles. This study supports the notion that parents may be a significant contributing factor in the development of their child's self-efficacy, which in turn affects the social problem-solving skills of children.
Children's Self-Efficacy and Perceived Problem-Solving Skills: An Investigation of Parental Communication Styles

In recent years, there has been increasing interest in children's social competence and adjustment, particularly as this adjustment relates to adult functioning. Research has indicated that a number of social cognitive skills are influential in children's social adjustment. Specifically, Shantz (1975) suggested that cognitive skills such as social perspective taking, empathy, and interpersonal awareness are important mediational skills in a child's understanding, and conceptualization of others' thoughts, feelings, and intentions ultimately affects the child's interactions with these others.

Of the various social cognitive skills, interpersonal problem-solving has received the most attention and is believed to be one of the most crucial to the social adjustment of children. Jahoda (1958) was among the first writers to place explicit theoretical emphasis on the relation of effective interpersonal problem-solving to social and emotional
adjustment. D'Zurilla and Goldfried (1971) defined interpersonal problem-solving as "a behavioral process...which makes available a variety of potentially effective response alternatives for dealing with problematic situations and increases probability of selecting the most effective response from among these various alternatives" (p. 108). This position was supported by Meichenbaum (1977), who specifically stressed the ability to decide on the best solution to a problem and then to transform this solution into actual overt behavior.

Assessment of Social Problem Solving

Attempts to assess interpersonal problem-solving skills have generally consisted of interview measures in which a hypothetical problem is presented to the child. The most commonly used problem-solving measures were developed by Spivak and Shure and include several types. The Preschool Interpersonal Problem-Solving Test (PIPS) assesses the child's ability to generate alternative solutions to sets of age-related interpersonal problems (Spivak & Shure, 1974). The Means-Ends Problem-Solving Test (MEPS) is a second type, intended for older children, which
assesses a child's ability to carefully plan the means needed in order to reach an intended, prestated goal. Children are presented with the beginning of an interpersonal problem situation and with the final outcome and are required to "fill in the middle of the story" (Shure & Spivak, 1978).

Thirdly, the Awareness of Consequences Test (ACT) is used for both children and parents with age appropriate content for each. The procedure involves consideration of the pros and cons of an interpersonal act that goes beyond simple naming of alternative events that may ensue. The test involves describing a story of a person who is in a tempting situation (i.e., some transgression is possible), telling "everything that is going on in the character's mind, and then tell what happens." A consequence score is arrived at on the basis of the extent to which the subject's responses include references to what might happen if he or she carried out one or another course of action (Spivak, Platt, & Shure, 1976).

Several variations of Spivak and Shure's problem-solving measures have been developed and modified for older children. The Alternatives
Solutions Test (Walters & Peters, 1979) is an extended version of the Preschool Interpersonal Problem-Solving Test in which the experimenter explicitly probes for a child's ability to generate multiple solutions to the story problem. The scoring dimensions include both quantitative (i.e., the number of alternatives) and qualitative (i.e., content of solutions) measures. Gesten, Flores de Apodaca, Rains, Weissberg, and Cowen (1979) developed a modified version of the Means-Ends Problem-Solving Test, the Open Middle Test, which includes standardized prompts and pictorial representations of each of the hypothetical problem situations. The number and content of solutions, as well as the effectiveness of the child's responses are scored.

In order to assess how children solve problems involving peer conflict as opposed to those involving peer initiations, authors have included two types of peer interaction situations in both the AST and OMT: goal seeking situations and peer provocation. The goal seeking situations concern a child seeking to attain a goal such as an object in the possession of a peer, participation in a group activity, or initiation
of a friendship. The peer conflict situations typically involve a child's response to peer provocation such as verbal teasing, physical attack, and object struggle.

**Relationship to Social Adjustment & Problem Solving**

In an attempt to support the initial hypothesis that interpersonal problem-solving skills are critical to effective social adjustment, researchers have used the above mentioned measures to distinguish between socially effective and ineffective youngsters. However, the research investigating such a relationship has resulted in mixed findings. Using the PIPS and MEPS, several researchers have successfully differentiated normal from disturbed populations (Shure & Spivak, 1978; Platt, Spivak, Altman, Altman, & Peizer, 1974; Spivak, Platt, & Shure, 1976) and have also predicted behavioral adjustment in preschool children (Spivak & Shure, 1974). Spivak and Shure's (1974, 1976, 1978) research has generally supported the relationship between problem-solving skills and social maladjustment in children. With respect to social acceptance, however, the relationship has not been as clear.
Research on problem-solving skills and social acceptance has evaluated skills on three specific dimensions: (a) number of alternatives generated, (b) effectiveness of first and subsequent alternatives, and (c) generation or evaluation of a best or most appropriate solution. Using a group of preadolescents, Butler (1979) found no significant relationship between means-end thinking and social acceptance. Walters and Peters (1979) failed to find a significant difference between sixth grade aggressive and nonaggressive boys in terms of number and overall effectiveness of solutions generated using both the AST and MEPS. However, the aggressive boys did show a preference for physical aggression as a solution by frequently choosing this response first and repeatedly choosing physically aggressive responses across a number of problem situations. Walters and Peters conclude that the crucial difference between aggressive and nonaggressive boys may be in their preferred behavioral solutions rather than in their comprehension of socially acceptable alternatives.
Using a somewhat different classification scheme, Richard and Dodge (1982) examined differences in social cognitive problem-solving in aggressive, isolate, and popular boys. Once again, all three groups were equivalent in terms of their ability to identify appropriate solutions generated by the experimenter. Furthermore, all three groups generated a similar proportion of initial effective solutions. However, in subsequent responses, the popular group was more likely to respond with an effective solution than was the combined aggressive and isolated group. Finally, the popular group generated slightly more solutions to each story than did the combined aggressive and isolated groups who did not differ from each other. This study seems to support the work of Walters and Peters (1979) in that both aggressive and isolated children possessed adequate social knowledge regarding the recognition of effective solutions, although differences emerged with the generation of subsequent responses.

Remaining consistent with Walters and Peters, Deluty (1981) found no differences in the number of alternatives generated by aggressive, assertive, and
submissive children in response to 10 peer conflict situations. It was also found that these children did not differ in their ability to conceive of a variety of different types of solutions. However, Deluty did find that the type of solution generated most often by each group corresponded with their classification. Bream (1982) similarly classified children as socially effective (well-liked) and socially ineffective (aggressive and withdrawn) on the basis of peer and teacher nominations and ratings. The children responded to six hypothetical stories describing interpersonal problems, with results indicating that all children were able to generate a socially appropriate and potentially effective alternative to each of the stories. However, differences did appear between liked, aggressive, and withdrawn children in number of alternatives generated and statements of intended solutions (ones that the child him/herself would engage in). In particular, withdrawn children generated fewer solutions and demonstrated a preference for nonconfrontative intentions in response to the hypothetical situations. Aggressive children did not differ from well-liked children in the number
of alternatives generated but demonstrated a preference for aggressive intentions and solutions relative to well-liked or withdrawn groups.

**Hypothetical Versus Behavioral Problem-Solving**

The problem-solving research mentioned thus far has been based on the hypothesis that different populations have different skill deficits. Clinically disturbed children may be deficient in both social knowledge and social behaviors, whereas less disturbed children may possess adequate social cognitive skills but may be unable to engage in problem-solving skills in real-life situations. In other words, the crucial skill for some children who have difficulty with peer interactions may be the translation of the cognitive skill into overt behavior. In an attempt to determine the relationship between hypothetical problem-solving reasoning and behavior problem-solving skills, researchers have begun to employ simulated real-life problem situations as a means of assessment.

In support of the notion that responses to hypothetical problem situations may not correlate with behavioral measures, Krasnor and Rubin (1981) found
that preschoolers' alternative thinking scores as derived from responses to hypothetical problems were not related to effective problem-solving behavior in the naturalistic environment. Similarly, Damon (1977) examined the consistency between children's hypothetical responses and their behavior in real-life situations involving distributive justice, finding that children's real-life reasoning lagged behind their hypothetical reasoning. Further, while Cohen, Bream, Vinciguerra, and Ulloa (1981) did not find differences between well-liked, aggressive, and withdrawn children on verbal measures of interpersonal problem-solving, they did find differences between groups in terms of their behavioral interactions with peers.

In further attempts to examine the relationship between hypothetical problem-solving reasoning and problem-solving behavior, Kendall and Fischler (1984) assessed problem-solving skills of mother/father/child triads via written tests and problem-solving behavioral performances. One hundred fifty families, each with a son or daughter between the ages of 6 and 11, were grouped into developmental categories of
6-7 years old, 8-9 years old, and 10-11 years old, according to the child's age. The families were assessed via written tests measuring means-ends thinking, identified obstacles, alternative solutions, and consequential thinking. Behavioral assessment of problem-solving skill was accomplished through an interactional problem-solving task in which the entire family participated. Observational codes were used in parallel with written measures in order to aid the behavioral and hypothetical comparisons. The relationships of each of the hypothetical and behavioral measures of problem-solving skill to both parent and teacher indices of child adjustment were examined. In contrast to the above mentioned studies, results indicated that for boys, there were no significant positive correlations between written measures and the corresponding problem-solving behaviors. For girls, written alternatives and consequences were significantly correlated with alternative and consequence problem-solving behaviors. Further, neither the children's written nor behavioral interpersonal problem-solving skills measures were systematically related to ratings of behavioral
adjustment made by parents (Child Behavior Checklist) or teachers (Devereux Elementary School Behavior Scale) (Kendall & Fischler, 1984).

In another study, Bream (1982) attempted to assess children's overt behavioral responses in simulated problem situations that mirrored two hypothetical stories describing interpersonal problems. Results indicated that children differed in the types of behavior they exhibited in the simulated problem situations, with the withdrawn children preferring nonconfrontative responses to the behavioral dilemmas. The author suggests that this preference was manifested as a lack of persistence (i.e., low number of alternatives) in peer conflict situations and as a general passive style of responding in the peer initiation situations. Aggressive children, on the other hand, tended to resort to aggressive responses over time with a corresponding decline in alternative effectiveness. This suggests that this group may be overly persistent in their problem-solving attempts.

Although results have been mixed, it appears likely that most children know the correct or most
potent effective solution, however, they do not necessarily engage in these solutions. Yet, most of the problem-solving literature has concentrated on remediating cognitive deficits rather than facilitating behavioral demonstration of these skills. Consequently, generalization results have been mixed. Spivak and Shure (1974) provide an example of a project that successfully improved children's social adjustment. In separate investigations, these researchers showed that low-income, black, inner-city preschoolers and kindergartners, taught Problem-Solving Skills (SPS) by their teachers (Spivak & Shure, 1974) and mothers (Shure & Spivak, 1978) improved more than did nonprogram controls in generating alternative solutions and consequences and in teacher rated adjustment. Three additional findings were critical: (a) Gains in alternative solution thinking and, to some extent, consequential thinking related to improved adjustment; (b) initially, more maladjusted children improved most in SPS skills and adjustment; and (c) follow-up 1 and 2 years later showed that SPS and adjustive gains endured. Thus, trained SPS skills appeared to mediate
enduring improvements in adjustment, and children
who most needed the program benefitted most from it.

Although Spivak et al. (1976) have shown
repeatedly that SPS training has beneficial
therapeutic and preventive effects for inner-city
preschoolers, similar programs for suburban
preschoolers and older children have not consistently
replicated these findings. Krasner and Rubin (1981)
found that two abridged SPS training programs for
upper middle socioeconomic status (SES) preschoolers
improved their alternative solution thinking but not
their social behavior or adjustment. Similarly,
Winer, Hilpert, Gesten, Cowen, and Schubin's (1980)
42-lesson, 10-week, SPS intervention with middle-SES
kindergartners led to improved alternative-solution
thinking, fewer irrelevant responses, and some
adjustive gains, but specific SPS skill and adjustive
improvements were unrelated.

At the second to fifth grade levels, several
research teams have developed and evaluated
school-based SPS interventions. Allen, Chinsky,
Larcen, Lockman, and Selinger's (1976) 24-lesson
curriculum was taught twice a week to middle-SES
third and fourth graders. Although program children exceeded controls in generating alternative solutions and elaborations (i.e., means) to hypothetical problem situations and did better on a post program-only, structured, real-life problem situation, the groups did not differ on teacher judgments of problem behavior, peer sociometric ratings, or self-report measures of self-esteem or level of aspiration. Indeed, their only positive postadjustment finding, i.e., shift toward internality on a locus of control scale, disappeared in the 4-month follow-up evaluation (McClure, Larcen, & Chinsky, 1978).

Gesten, Apodaca, Rains, Weissberg, and Cowen (1979) developed an SPS program for second and third grade, suburban, middle-SES children based on feeling and problem recognition, alternative-solution and consequential thinking, and integration of these skills. A 17-lesson, full package program, taught twice weekly, emphasized role playing, videotape modeling, and class discussion. A 5-week videotape program included only the five videotapes from the main program, each of which had stop points at which children were encouraged to talk about specific
problem situations and how they might handle them. Children receiving the full package gained significantly more than those taught the abridged program and no-treatment controls on alternative-solution and consequential thinking, but not on problem identification. On a separate postprogram simulated behavioral peer problem situation, they also made more solution attempts than the other groups. However, even though the trained group acquired more problem-solving skills, it did not differ from other groups on post-program adjustment measures (Gesten, et al., 1979).

Evaluation of a social problem-solving training program for suburban and inner-city third grade children was conducted with three specific questions in mind: (a) Does training improve interpersonal problem-solving abilities? (b) Does it enhance behavioral adjustment? (c) Are problem-solving and adjustment gains related? (Weissberg, Gesten, Piapkin, Cowen, Davidson, Flores de Apodaca, & McKim, 1981). These researchers found that the intervention positively affected the adjustment of suburban but not urban youngsters.
Continuing the attempt to evaluate the effects of social problem-solving skills training on social maladjustment in children, Kazdin, Esveldt-Dawson, French, & Unis (1987) conducted a comparison of problem-solving skills training (SPS) versus nondirective relationship therapy for the treatment of antisocial child behavior. Psychiatric inpatient children were assigned randomly either to problem-solving skills training, relationship therapy, or to a non-treatment control group. The problem-solving skills training condition led to significantly greater decreases in overall behavior problems at home and at school and to greater increases in prosocial behaviors and in overall adjustment than the relationship therapy and control group conditions. These effects were evident at a 1 year follow-up. However, comparisons with nonclinical (normative) levels of functioning revealed that the majority of children in the problem-solving group and almost all of the children in the relationship therapy and control groups remained outside the normative range of deviant social behavior.
Self-Efficacy and Problem-Solving

It appears that findings from problem-solving training studies with young and preadolescent age children indicate fairly consistent improvement in alternative-solution and consequential thinking, but have failed to demonstrate any consistent generalizability to actual adjustment in their everyday lives. Given these findings, it may be that other variables mediate the transformation of cognitive knowledge into overt behavior. One such variable may be self-efficacy. Self-efficacy theory postulates that different modes of influence alter coping behavior by creating and strengthening expectations of personal efficacy (Bandura, 1977).

Perceived self-efficacy may affect social behavior in several ways. It can influence choices of activities and types of social responses in which individuals are willing to participate. For example, perceived self-efficacy may play an important mediating role in whether or not an individual engages in a problem-solving attempt. If individuals do not view themselves as socially adept, they may be reluctant to even attempt responses that are likely
to ensure successful social relationships. Thus, even though individuals may feel confident that a particular response would be effective, they may doubt that they could execute the response successfully. Further, self-percepts also determine how much effort people will expend in developing social relationships and how long they will persist in the face of obstacles or aversive social experiences (Bandura, 1978; Diener & Dweck, 1978, 1980). Consequently, children with low self-efficacy may be less apt to engage in problem-solving behavior as a means of coping with interpersonal social conflicts. These children would doubt the efficacy of their problem-solving attempts and hence would either withdraw or engage in the most readily available behaviors, which may be highly inappropriate for the situation at hand.

Within the area of learned helplessness, a group of researchers (Diener & Dweck, 1978, 1980; Goetz & Dweck, 1980) have demonstrated a relationship between self-percepts, attributional tendencies, and the implementation of problem-solving tactics among elementary school children. Diener and Dweck (1978)
investigated the notion that helpless children show marked performance decrements under failure, whereas mastery-oriented children often show enhanced performance. They explored helpless versus mastery-oriented differences in the nature, timing, and relative frequency of a variety of achievement related cognitions by continuously monitoring verbalizations following failure. The results revealed that helpless children made the expected attributions for failure to lack of ability (self-efficacy level); mastery-oriented children made surprisingly few attributions but instead engaged in self-monitoring and self-instructions (problem-solving tactics). That is, the helplessness children focused on the cause of failure, whereas mastery-oriented children focused on remedies for failure.

Further research in this area (Diener & Dweck, 1980; Goetz & Dweck, 1980) supports the position that helpless children, who explain their failures as uncontrollable, persist less regardless of their actual ability levels, and resort to progressively less effective strategies for problem-solving following failure feedback. In contrast,
"mastery-oriented" (higher self-efficacy) children tend to interpret failure as a cue to escalate their efforts. They view failure feedback as useful information about required changes in strategy or motivation. Consequently, they often respond to failure with an increase in persistence or problem-solving efficiency (Diener & Dweck, 1978, 1980).

Thus, it may be that although children of differing social status are equally able to generate alternative solutions to hypothetical interpersonal problems, their differential ability to enact these solutions may be due to varying levels of self-efficacy. In fact, several studies have documented modest correlations between self-efficacy and social standing, with competent children showing higher scores on self-efficacy measures (Harter, 1982; Kurdek & Krile, 1982; Moe & Zeiss, 1982; Wheeler & Ladd, 1982). Therefore, it may be that only well-liked children are able to engage in appropriate solutions and persist due to high self-efficacy. On the other hand, withdrawn children may not persist long enough to achieve a positive outcome and aggressive children may resort to a
less appropriate solution (i.e., aggressive) if their initial solution is ineffective due to low self-efficacy.

**Parental Communications, Self-Efficacy, and Problem-Solving**

Bandura (1977) proposes several sources of self-efficacy enhancement: performance accomplishment, vicarious experience, verbal persuasion, and physiological states. According to the literature, all four of these information sources play a role in the development of a child's level of self-efficacy and can modify or change an existing self-efficacy level. It is likely that parents are a major influence in the development of self-efficacy expectations in their children through vicarious experience, as well as through the confidence they express in the child's ability to engage in effective interactions and in their ability to solve interpersonal problems. Shure and Spivak (1978) emphasized parental tactics that enhance children's problem-solving skills and focused on how familial interactions can affect the social behavior of their children. More attention and research specifically focused on the parents as a mediating
factor in children's development of problem-solving skills is needed.

The purpose of the present study was to determine the relationship between problem-solving skills and self-efficacy. I expected that while all children would be able to generate an appropriate solution to hypothetical problem situations, they would differ in their predictions of what they would actually do. Based on the literature, it was expected that high self-efficacy children would choose effective solutions as their intended responses, while low self-efficacy children would choose less effective (aggressive and/or nonconfrontative) ones. I hypothesized that high self-efficacy children would express greater confidence in their ability to perform the optimum solution than would low self-efficacy children. I further hypothesized that parents of high self-efficacy children would deliver more positive self-efficacy messages to their children. In order to investigate this relationship, parents' communication styles were assessed in an actual training interaction with their child.
**Method**

**Participants**

The participants in this study were 25 girls and 22 boys and their mothers. They were recruited from second and third grade classrooms selected from several elementary schools within the Stockton area. Four schools within the Stockton Unified School District and the Lincoln Unified School District were presented with the research proposal and all schools willing to participate were utilized. Principals of the various schools approved the project within their own schools and all second and third grad classes were recruited. A permission slip was sent home with each child in which the parent/child dyad was requested to participate in a study of the problem-solving skills of parents and their children (see Appendix A).

Following the return of the permission slips, each parent/child dyad was contacted and participation dates and times arranged. The participants were requested to come to the University of the Pacific (Psychology Department) for the study.¹

¹An initial pilot study was conducted with a separate sample of 20 children in order to evaluate procedural variables.
Upon completion of each experimental session, children received $10.00 for their participation.

**Dependent Measures**

**Hypothetical story problems.** A group of four hypothetical problem situations were used to measure children's problem-solving skills and their perceptions of self-efficacy. The story problems were a modification of commonly used problem-solving measures (Spivak & Shure, 1976). The specific hypothetical stories were of two types: peer conflict and peer initiation.

The three peer conflict stories included: (a) a child who is being teased about his/her new haircut; (b) a child who walks in front of another youngster who then gets angry and hits the child, and (c) a child who is shoved from his/her first place in a lunch line. The peer initiation story involved a child who wants to play baseball with a group of children but is not sure if they will let him/her play. (Appendix B contains the actual problem-solving measures that were used.)

The four hypothetical stories were presented orally, accompanied by 10 cm by 8 cm line drawings. Each story was presented in an open middle format.
similar to the Mean-Ends Problem-Solving Test developed by Spivak and Shure (1976). The child was told the beginning of the story (in which the problem was described) and then the end of the story (in which the problem has been resolved). However, unlike the MEPS, the specific outcome of the problem situation was not stated. The child was then asked to describe all the ways the protagonist might solve the problem (i.e., alternative solutions). The generation of alternatives was not scored in any manner; this task served only to stimulate the child's thinking in terms of all the possible solutions one might choose from in order to solve the problem. One standardized prompt was delivered to test the limits of the child's problem-solving ability.

The child was then asked to describe what he/she would do in that situation (i.e., intention response) and to state what the best solution to the problem would be (i.e., best response). The fourth question required that the child estimate on a scale of 1 to 5 the certainty with which he/she could perform a standardized best solution provided by the experimenter (perceived self-efficacy). This best solution was selected based on the modal ratings of
five independent judges. These judges were undergraduate students who were involved in research at the University of the Pacific Psychology Department. Finally, the child was asked to estimate on a scale of 1 to 5 the likelihood that he/she would try again if first attempts to perform the best solution were ineffective (persistence level).

To summarize, the child was presented with a story problem and asked the following questions: (a) What are all the things that "Sam" could do to solve his problem? (b) What would you do in this situation? (c) What is the best thing for "Sam" to do in this situation? (d) How sure are you that you could do the best thing (solution provided by the experimenter)? (e) If your first try didn't work, how likely is it that you would try again?

The solutions generated as best responses and intention responses were scored as either an alternative or as an irrelevant response. (See Appendix C for detailed description of scoring guidelines and procedures.) All of the alternative solutions were then coded into one of the following three content categories: (a) Aggressive (consisting
of both physically and verbally aggressive solutions); (b) Nonconfrontative (consisting of an action not directed toward the protagonist, help-seeking, and passive responses indicating withdrawal from the problem); (c) Assertive (consisting of verbal assertion, direct action, and bargaining). Any irrelevant responses were not content coded and were classified as "no response."

Each intention and best solution was also scored for effectiveness on a 5-point scale, based on the extent to which the solutions maximized positive consequences and minimized negative consequences for both the protagonist and the antagonist and the extent to which it was feasible and appropriate for 7 to 8 year olds. A hierarchy of the effectiveness of responses had been derived based on the modal ratings of five independent judges. Intention and best responses were rated for content and effectiveness by the author and a random sample of 25% of these were scored for reliability by a second rater. A mean self-efficacy rating and persistence score was calculated across the four stories, utilizing the child's estimates of how they would behave on the
standardized best solutions provided by the experimenter.

In sum, the following variables were analyzed for the stories presented to the children: content of alternatives generated for intention and best responses; mean effectiveness of alternatives for intention and best responses; mean self-efficacy rating; and mean persistence rating.

**Self-efficacy measure.** A pencil and paper test designed to measure elementary school children's self-efficacy for social situations with peers was used to identify high and low self-efficacy children in addition to the self-efficacy scales relating to each hypothetical problem situation. The Children’s Self-Efficacy for Peer Interaction Scale (CSPI), a 22-item questionnaire, measures third through fifth grade children's perceptions of their ability to enact prosocial verbal persuasive skills in two types of peer interaction situations—conflict and nonconflict (Wheeler & Ladd, 1982). In conflict situations, the persuasive goal of the child is in direct opposition to the goal of the peer (e.g., the child wants to persuade a peer to play a game that the peer does not
like), whereas nonconflict situations do not present a contradiction of goals between child and peer (e.g., the child wants to persuade a peer to play a game that they both like).

Each item on the CSPI consisted of a statement describing a social situation (e.g., "You want to start a game") followed by an incomplete statement requiring the child to evaluate his or her ability to perform a verbal persuasive skill ("Asking other kids to play is ____ for you."). For each item, children were instructed to circle one of four response choices: (1) Really hard!, (2) Hard, (3) Easy, (4) Really easy! (See Appendix B for copy of full self-efficacy measure used.) Response ratings for each item were summed and a mean self-efficacy score calculated for each child, with a higher rating indicating a greater degree of self-efficacy.

A parent rating of the child's social efficacy consisted of the same items as included in the CSPI, rewritten in the third person (e.g., "Asking other kids to play is ____ for your child."). Parents used the 4-point scale (Really hard!, Hard, Easy, Really easy!) in responding to the same 22 items. (See
Appendix B for copy of full parent rating measure.) The child's total score on the parent rating of social efficacy was also calculated by averaging the ratings across all 22 items.

Reliability and validity of the CSPI were examined in a previous study (Wheeler & Ladd, 1982). Several indices of scale homogeneity or internal consistency were computed, including item-total correlations, alpha coefficients, and factor structure. Adjusted item-total correlations were obtained by correlating each item with the total score minus that item. All 22 items were positively and significantly correlated with the total score \((p < .05)\), with correlations ranging from .26 to .61 with a median of .43. These findings support the interpretation that each item taps the common construct of social self-efficacy.

Correlations between the conflict items and the conflict total score ranged from .33 to .68 with a median of .50; correlations between the nonconflict items and nonconflict total score ranged from .23 to .54 with a median of .40. Alpha coefficients of internal consistency were .85 for the total scale,
.85 for the conflict component, and .73 for the nonconflict component. The correlation between the conflict and nonconflict total scores was .46, suggesting that these two item clusters comprise distinct but related components in the scale.

Test-retest correlation coefficients for the CSPI and its constituent factors (conflict and nonconflict scales) were calculated, with correlations of .90 for boys and .80 for girls.

A preliminary condition for the validity of an instrument is its ability to discriminate among individuals in terms of the attribute being measured. Total CSPI scores varied considerably in previous use, ranging from a low of 34 to a high of 87 with a mean score of 63.7 (SD = 11.3). The full possible range of the scale scores is 22 to 88. These findings indicate that the scale items were adequate to maximize individual differences and minimize socially desirable responses (Wheeler & Ladd, 1982).

Correlations of the CSPI with the Piers-Harris scale and its social, academic, physical, and anxiety subscales ranged from .06 (physical) to -.49 (anxiety). Overall, the highest correlations
were obtained between the CSPI and the anxiety measure. As expected, social self-efficacy was significantly and negatively related to anxiety. The CSPI was also positively correlated with the measure of general self-concept, and to a lesser degree, with the measures of social and physical self-concept. Finally, the CSPI was positively correlated with the Peer Rating of Social Influence and the Play Nominations Sociometric Measures in two samples (correlations ranging from .12 to .68) (Wheeler & Ladd, 1982).

Behavioral observation code. In addition to the hypothetical story problems, each child and parent participated in a structured behavioral problem-solving task. This task was included in the study in order to investigate the relationship between parent communication styles and children's levels of self-efficacy. This activity was one in which the parent was requested to "teach" the child how to solve the problem. A set of five block-matching tasks preselected from the Leiter Intelligence Test for Nonverbal Children was presented to the parent and child dyad. The tasks that were selected were above
the age levels of the child participants and were designed to be unsolvable for this age group. (The Leiter test was pretested with four 7-9 year old children and the five tasks selected according to a 100% failure rate on the part of all 4 children. These 4 children were volunteers recruited from families of students and faculty attending University of the Pacific who participated in the testing situation on the university campus in the months prior to the conducting of this study.) Unsolvable block-matching tasks were selected so that children's self-efficacy ratings and parent-child interactions would not be influenced by differential success experiences. Further, unsolvable tasks seemed more likely to generate problem-solving interactions between parent/child dyads, creating the opportunity to observe parental behavior in a situation in which their child did not perform successfully.

During the course of this structured activity, the participants were observed through a one-way mirror. A behavioral code was designed to measure the frequency of specified verbal and nonverbal instructional/teaching behaviors emitted by the
parent. The following categories comprised the behavioral code that was used: (a) Critical statements/critical affect (indicates disapproval or correction of the child); (b) Praise statements/positive affect (indicates approval of child's behavior); (c) Encouragement (provides support and encouragement to the child); (d) Parental control (parent completes task without engaging child in process); (e) Instructions (parent provides explanation of how to do the task); (f) Direct command (direct, clearly stated order which can result in either child compliance or noncompliance); (g) Indirect command (specific suggestion offered to the child which may be accepted or rejected); (h) Prompt (assists child in identifying a problem-solving strategy and is generally in question format); (i) Modeling (parent directs child's attention toward their own behavior as being an example for the child to imitate); (j) Parental problem-solving (self-talk and self-coping statements); (k) Acknowledgements (response to the child that does not contain any manifest content). (See Appendix C for extensive explanation of behavioral code and relevant examples.)
These behavioral categories were pretested with 19 parent/child dyads and revisions were made to clarify the definitions and to ensure that all behaviors of interest were coded. The 19 dyads were recruited in the same manner as the participants in this study and included 2nd and 3rd graders and their parents, 10 boys and 9 girls.

Parent/child interaction was observed for a 20-min period using an interval system of recording, with double coding possible for all intervals. Intervals of 20 s in length were used, and all behaviors fitting into the behavioral categories previously described were recorded. In other words, any number of behaviors could be coded within a single interval. However, multiple occurrences within the same category were recorded as a single incident within each interval. The percentage of intervals in which each behavior occurred was calculated for each category.

Observer/Experimenter Training

Hypothetical problem-solving measures and behavioral observations with all participants were conducted by three trained undergraduates enrolled
in upper division psychology classes at the University of the Pacific, Stockton, California. These trained undergraduates were supervised by me. Each interviewer was given written guidelines to aid in the establishment of rapport and to stimulate accurate, maximum responding on the part of the participants. In addition, a 1 hour role play session was used to provide the opportunity for rehearsal of interview skills and familiarity with the interview materials.

Observational training consisted of a number of sessions designed to familiarize observers with the behavioral code. To practice using the code, the trainees viewed videotapes in which a parent and child were engaged in the problem-solving task. These sessions were held until observer agreement exceeded 80% over three 20 min sessions.

Procedure

The experimenter contacted four 2nd and four 3rd grade classrooms at several public schools in Stockton, California, which had been approved for participation by the various principals of the schools. Permission slips were distributed to all
students within these eight classrooms. (See Appendix B for copy of permission form.)

Upon receipt of permission slips indicating parental willingness to participate in this study, phone contact with parents was made. Parent/child dyads were reminded that the study was to be conducted in the Psychology Department at the University of the Pacific and would require approximately 1 hour of their time. According to participant availability and convenience, each dyad was scheduled for a specific appointment.

Participants were greeted by two experimenters and provided with the following introductory instructions:

"As you know, we are interested in finding out more about how parents and their children solve problems. Today we will be doing several things together that will provide you with the opportunity to share your information and opinions with us. We hope to use this information to help others who may have trouble solving problems. The first thing we would like to do is to talk with you and your child
individually about problem situations that you may encounter in your everyday lives. We would like for you, (parent's name), to come with me and (child's name) to go with (experimenter #2's name). After about 15 min, you two will work together on a second activity."

The parent was directed to a laboratory room with a large table and several chairs and asked to be seated. Only the parent and experimenter were present. The parent was then presented with the following instructions:

"We are interested in finding out how parents help their children solve problems, so that we can discover the best way. We'd like to get ideas and examples from you today. We would like to know what you think about your child's choices when attempting to solve conflicts with other children. Are you ready to begin?"

While the parent was being interviewed, the second experimenter was interviewing the child in another room. The child was presented with the previously described set of hypothetical problem
situations, preceded by the following instructions:

"We are interested in the way children like you think about things. What we are going to do is look at some pictures and listen to some stories. This is not a test, so there are no right or wrong answers. We just want to know what you think. Are you ready to begin?"

Upon completion of the hypothetical problem-solving measure, the parent and child remained separated and were presented with the Self-Efficacy for Peer Interaction Scale (CSPI). In each case, the participant was instructed about the meanings of the different scale points and was then allowed practice using the scale with sample items. In the child testing, each item was read aloud in order to reduce the potential confound of reading ability. Parent participants, on the other hand, were instructed to proceed at their own pace and to indicate when they had completed all 22 items.

Each parent/child dyad was then reunited after the problem-solving tasks and presented with the following instructions:

"We'd like to develop an educational toy designed
to improve problem-solving skills. We are hoping that it can be used in the home by parents and their children. We'd like you to help us find out if it is a good toy to use. A set of five block-matching games will be used today.

(Child's name) is to work on the five tasks, spending as much time as he/she would like on each of them. Here is a list of the correct answers for each of the five tasks (experimenter gave an answer key to the parent only). You may do whatever you like to help your child match the blocks correctly for each set. You will have 20 min to try and complete the tasks correctly. I will let you know when the time is up. Are you ready to get started?"

The experimenter then led the parent and child to an experimental room with a one-way mirror and microphone system. The block-matching tasks were randomly placed on a large table, surrounded by several chairs. The participants were asked to be seated and to begin working. The experimenter then left the room. During the course of the structured activity, the participants were observed by two trained observers and the parent's behavior recorded.
The structured activity was interrupted after 20 min had elapsed and the participants informed that the project was completed and that they could go home now. All participants were analyzed for 20 min total of behavioral observation time. Both parent and child were, at this time, reassured that the tasks might be too difficult for most people of all ages and were apparently too difficult for children of the 7-9 year age range. They were thanked for their participation, and reminded then that all results were confidential. All participants completed the hypothetical problem-solving stories and self-efficacy measures prior to the behavioral problem-solving tasks. This sequence was followed as it was possible that the frustration and/or anxiety experienced on the behavioral problem-solving task, due to its unsolvable nature, might influence participants' responses on the hypothetical problem-solving and self-efficacy measures.

Results

Interobserver Agreement

Interobserver agreement for variables associated with the hypothetical stories was conducted by having
a second rater independently code 25% of the subjects' (N = 12) written responses using the coding manual (see Appendix C). Using the percentage agreement formula, interobserver agreement was assessed for the following categories of responses: effectiveness of the intention responses, effectiveness of the best responses, content categories of the best responses. Agreement was defined as an exact match between the raters. The mean percentage agreement for effectiveness and content of the child's intention response was .92 and .88 and ranged from .78 to .96. For the best response, these figures were .93 and .90 for effectiveness and content respectively, ranging from .80 to .97.

Interobserver agreement on the behavioral observations was conducted by having two observers simultaneously and independently record the target behaviors (11 behavioral categories of parental communication style) of 25% of the parent/child dyads. Because the target behaviors had a very low rate of occurrence within each interval, percentage agreement was calculated on occurrences only (Gelfand & Hartmann, 1984).
Occurrence agreement was calculated by dividing the number of agreements for occurrence by the number of disagreements plus number of agreements for occurrence. Occurrence agreement for each of the behavioral categories was as follows: Critical Statements, .86; Praise, .89; Encouragement, .87; Acknowledgement, .72; Modeling, .76; Instructions, .69; Direct Command, .84; Indirect Command, .73; Prompt, .75; Parental Control, .93; and Parental Problem-Solving, .88.

Overview of Analysis

Self-efficacy and problem-solving. In order to analyze the relationship between self-efficacy and problem-solving, children were classified as high and low on each measure using median split classifications. Each participant's mean score for the CSPI, Perceived Self-Efficacy on the Hypothetical Story Problems, mean effectiveness of Intention Responses, and mean effectiveness of Best Responses was calculated. The median score was identified and subjects were then classified as above or below the median on each variable. Subjects were so classified due to limited use of the full range of the scale
associated with each measure (scores ranged from 2.0 to 4.0) on the hypothetical stories. Thus, although it is the lowest level of discrimination, median splits best represented the way in which the subjects responded to the problem-solving measures.

Given that all data were transformed into a nominal scale, the Chi Square two-variable test was employed to determine whether any of the variables (CSPI vs. Hypothetical Story Problem variables) were related. The research question was: "Is there any relationship between the children's problem-solving skills and their perceived social self-efficacy?" A .05 alpha level was used for predicted outcomes, while a .01 alpha level was used for all other variables.

**Self-efficacy and parental behavior.** A second aspect of this study was to investigate the possible relationship between children's self-efficacy levels and parental styles of communication. A multiple regression analysis was used with the CSPI as a predicted variable and all behavioral observation categories as the predictors. Since the range of scores on the CSPI was not truncated (as in the case of the hypothetical story problem measures),
dichotomized data were not used in the multiple regression; rather, raw scores on the CSPI were used in the analysis.

The strength of the regression analysis was in its ability to analyze the relationship between CSPI scores (DV) and the 11 behavioral categories (IV's), taking into account the intercorrelation of the categories. The standard (also known as simultaneous) multiple regression strategy was used in this study, allowing for entry of all IV's (behavioral categories) into the regression equation at once. Each behavioral category was assessed as if it had entered the regression after all other categories had been entered. Each behavioral category, then, was evaluated in terms of what it added to the prediction of the DV (self-efficacy--CSPI), over and above that provided by all other behavioral categories.

A step-wise procedure was not used in that it is somewhat more vulnerable to chance factors and to avoid such, requires a case-to-variable ratio of 40 to 1 (Tabachnick & Fidell, 1983). The capitalization on chance and potential overfitting of data inherent in the step-wise procedure made this technique a less desirable choice.
A hierarchical multiple regression model was also a less desirable choice, as it requires order of entry of variables to be based on logical or theoretical considerations. I had no expectations/hypotheses regarding differential theoretical importance of individual behavioral categories. In conclusion, the standard multiple regression strategy was the most appropriate choice in order to simply assess the relationships between the variables of interest in this study.

In order to determine the extent to which children's perceptions of self-efficacy (CSPI) were related to parent's perceptions of their child's self-efficacy (CSPI), a Pearson $r$ was calculated. This correlation coefficient was employed using the raw score formula for interval-scaled variables. This calculation, in conjunction with the multiple regression and the Chi Square test, constituted the analyses of the results of this study.

**Median Split Classification for All Measures**

**Self-Efficacy.** The median score for child ratings of self-efficacy (CSPI) was 2.68 with scores ranging from 1.86 to 4.00. The median score for child
ratings of self-efficacy in problem-solving was 3.50 with scores ranging from 2.00 to 5.00 on the hypothetical story problems, while the median score for persistence was 3.25 with scores ranging from 1.50 to 5.00.

Intention/best response. As previously stated in the measurement section, children were asked to state what the best solution to the problem would be (i.e., "Best Response"), for each of the four hypothetical problem stories. These four responses were scored for effectiveness on a 5-point scale, and for the content of the solutions (aggressive, assertive, or nonconfrontative). Mean effectiveness ratings were calculated across all four stories for each subject. Frequency counts in each of the content categories were tabulated across all four stories for each subject.

The median score for the effectiveness rating was 3.50 with scores ranging from 2.25 to 5.00. For analysis of the content, children were categorized as either (a) Aggressive, (b) Nonconfrontative, or (c) Assertive according to the category containing the largest number of responses. Children who had an
equal number of responses across two or more categories (did not have a greater proportion in any single category) were categorized as "Mixed."

The effectiveness and content of children's intention responses ("What would you do?") were scored in the same manner as described for best responses. The median score for intention effectiveness ratings was 3.75, with scores ranging from 1.75 to 4.75.

Chi Square Analysis of CSPI and Hypothetical Story Problem Variables

Self-Efficacy. A significant Chi Square value was found between the child CSPI scores and the child self-efficacy ratings on the hypothetical story problems; \( \chi^2(1, N = 47) = 15.51, p < .01 \). Children who scored themselves as high self-efficacy on the CSPI also perceived themselves as more capable of solving hypothetical peer conflicts. Conversely, children who expressed low self-efficacy on the CSPI also viewed themselves as less capable of solving hypothetical peer conflicts. Also following this pattern, a significant Chi Square was found between the child CSPI scores and the child persistence ratings on the hypothetical story problems; \( \chi^2(1, N = 47) = 2.38, p < .05 \) (see Table 1).
<table>
<thead>
<tr>
<th>Hypothetical Story Problems</th>
<th>Low</th>
<th>High</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low Self-Efficacy (CSPI)</td>
<td>18</td>
<td>5</td>
</tr>
<tr>
<td>High Self-Efficacy (CSPI)</td>
<td>3</td>
<td>23</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Intention Effectiveness</th>
<th>Low</th>
<th>High</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low Self-Efficacy (CSPI)</td>
<td>16</td>
<td>7</td>
</tr>
<tr>
<td>High Self-Efficacy (CSPI)</td>
<td>1</td>
<td>24</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Best Effectiveness</th>
<th>Low</th>
<th>High</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low Self-Efficacy (CSPI)</td>
<td>14</td>
<td>5</td>
</tr>
<tr>
<td>High Self-Efficacy (CSPI)</td>
<td>1</td>
<td>24</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Intention Content</th>
<th>Nonconfrontative</th>
<th>Assertive</th>
<th>Aggressive</th>
<th>Mixed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low Self-Efficacy (CSPI)</td>
<td>14</td>
<td>1</td>
<td>1</td>
<td>7</td>
</tr>
<tr>
<td>High Self-Efficacy (CSPI)</td>
<td>23</td>
<td>1</td>
<td>0</td>
<td>1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Best Content</th>
<th>Nonconfrontative</th>
<th>Assertive</th>
<th>Aggressive</th>
<th>Mixed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low Self-Efficacy (CSPI)</td>
<td>20</td>
<td>1</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>High Self-Efficacy (CSPI)</td>
<td>23</td>
<td>1</td>
<td>0</td>
<td>2</td>
</tr>
</tbody>
</table>
With respect to the content of the intention and best responses, a significant Chi Square was obtained for child CSPI and best responses; \( \chi^2(3, N = 47) = 9.26, p < .01; \) while the relationship for intention responses only approached significance; \( \chi^2(3, N = 47) = 6.25, p < .05. \) In both cases, high self-efficacy children were equally distributed across assertive and nonconfrontative categories while low self-efficacy children were primarily categorized as offering only nonconfrontative responses.

**Parent vs. Child Perceptions of Self-Efficacy**

In examining the relationship between the children's perceptions of self-efficacy and their parents perceptions of their self-efficacy, a Pearson \( r \) correlation coefficient was calculated using scores on the child CSPI and the parent CSPI. A Pearson \( r \) of .75 was obtained, indicating a highly positive relationship. These results indicate that those children rating themselves as high self-efficacy also had parents who viewed them as high self-efficacy. Likewise, children scoring themselves low in self-efficacy tended to have parents who viewed them as low in self-efficacy.
Multiple Regression Analysis of CSPI and Behavioral Observation

In using the standard multiple regression, two fundamental questions were asked: (1) What is the size of the overall relationship between scores on the CSPI and the number of intervals in which each parental behavior occurred? and (2) What is the unique contribution of each behavioral category? The standard multiple regression was performed between the CSPI as the dependent variable and Critical Statements, Praise, Encouragement, Acknowledgement, Modeling, Instructions, Direct Command, Indirect Command, Prompt, Parental Control, and Parental Problem-Solving as the independent variables. Analysis was performed using SPSS Regression (SPSS X User's Guide, 1986).

Only three of the observational variables contributed significantly to prediction of self-efficacy (CSPI scores): Parental Control ($p = .001, \text{sr}^2 = .18$), Parental Problem-Solving ($p = .01, \text{sr}^2 = .10$), and Praise ($p = .05, \text{sr}^2 = .06$). The squared semi-partial correlation indicates the percentage of variation in the dependent measure
(CSPI) accounted for by each of the observational variables independently. These variables in combination accounted for 34% of the variance. In other words, 34% of the variability in self-efficacy levels (CSPI) could be predicted by knowing scores on these three independent variables (see Table 2). Given the directions of the correlations (positive/negative), these results indicate that parents who utilized more parental control in teaching the experimental task tended to have children who scored low in self-efficacy. On the other hand, parents who used more parental problem-solving and praise tended to have children who scored high in self-efficacy. The other eight behavioral categories did not show any significant contribution to the prediction of self-efficacy.

Discussion

The results of this study have provided initial support for the hypothesis that children's self-efficacy may be the mediating factor between social cognitive skills (i.e., problem-solving skills) and overt social behavior. The hypothesis regarding the relationship between self-efficacy and
**Table 2**

Standard Multiple Regression of Parental Communication Variables on Children's Self-Efficacy (CSPI)

<table>
<thead>
<tr>
<th>VARIABLES</th>
<th>CSPI (DV)</th>
<th>PARENTAL CONTROL</th>
<th>PARENTAL PROBLEM-SOLVING</th>
<th>PRAISE</th>
<th>b</th>
<th>( \beta )</th>
<th>( Sr^2 )</th>
</tr>
</thead>
<tbody>
<tr>
<td>PARENTAL CONTROL</td>
<td>*-.460</td>
<td>-0.052</td>
<td>-0.65</td>
<td>.18</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PARENTAL PROBLEM SOLVING</td>
<td>* .00</td>
<td>* .062</td>
<td>* .52</td>
<td>.10</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PRAISE</td>
<td>* .454</td>
<td>*-.378</td>
<td>*-.241</td>
<td>.062</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MEANS</td>
<td>2.66</td>
<td>3.92</td>
<td>2.47</td>
<td>7.02</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>STANDARD DEVIATIONS</td>
<td>.433</td>
<td>5.40</td>
<td>3.63</td>
<td>3.32</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

\( R^2 = .47 \)

Adjusted \( R^2 = .30 \)

**\( **p < .01 \)

*Simple Correlations

\( Sr^2 \rightarrow \) Squared Semi-Partial Correlation

\( b \rightarrow \) Unstandardized Regression Coefficient

\( \beta \rightarrow \) Standardized Regression Coefficient
problem-solving skills was confirmed in that children high in self-efficacy, as measured by the CSPI, have better problem-solving skills than do children low in self-efficacy.

More specifically, the solutions that high self-efficacy children intended to employ in hypothetical situations were judged to be more effective than those of children low in self-efficacy. Second, when presented with a best solution, high self-efficacy children expressed more confidence in their ability to execute this solution. Third, the types of solutions they offered were more frequently assertive. Thus, they were more likely to confront a problem than to avoid it, when compared to low self-efficacy children.

Previous research has demonstrated a similar relationship between self-efficacy and the use of problem-solving tactics for academic problems among elementary school children (Diener & Dweck, 1978, 1980; Goetz & Dweck, 1980). That is, mastery oriented or high self-efficacy children showed enhanced performance when faced with a problem while helpless or low self-efficacy children tended to withdraw or give up.
A more recent study comparing causal attributions following success and failure in hypothetical social situations also found that high self-esteem (high self-efficacy) children were more likely to engage in effective problem-solving behavior than low self-esteem (low self-efficacy) children (Fielstein, Klein, Fischer, Hanan, Koburger, Schneider, & Leitenberg, 1985). Further, they attributed their success to ability and their failure to unstable, external factors, whereas low self-esteem (low self-efficacy) children attributed success to unstable, external factors and failure to a lack of ability. Hence, the low self-esteem children would be less likely to engage in problem-solving behaviors. Taken in conjunction with the results of the present study, research strongly confirms the relationship between self-percepts (self-efficacy, self-esteem, mastery-oriented) and problem-solving skills.

The fact that children did not differ in the quality of their self-generated best response corresponds to other studies suggesting that most children can identify at least one appropriate solution to social problems with peers (Deluty, 1981;
Walters & Peters, 1979). Those researchers also found that both unskilled and skilled children possessed adequate social knowledge regarding the recognition of effective solutions. Differences between these groups emerged in the generation of subsequent solutions to problem situations and in children's predictions of their own behavior in problem situations.

In addition, children in this study did differ in their predictions of their persistence in solving a problem if their preferred solution failed. This finding corresponds to past research (Diener & Dweck, 1978, 1980; Goetz & Dweck, 1980) which found that helpless children (low self-efficacy) persist less in the face of difficulties, while mastery-oriented (high self-efficacy) children often respond to difficulty with an increase in persistence or problem-solving efficiency.

The second major aim of this study was to identify the role of parents as sources of self-efficacy information for their children. According to the results, there appears to be a relationship between children's self-efficacy and parental perceptions of their child's self-efficacy.
While the direction of causality cannot be determined, it is possible that parents who have confidence in their child's ability to solve a problem communicate this belief to them. Consequently, they enhance the child's self-efficacy. For example, Bandura (1978, 1982) suggests that verbal persuasion, which he defines as the expression of confidence from others, is one source of self-efficacy information.

In addition, it is likely that parents communicate their confidence in their child's ability by their behavior when the child is faced with a difficult problem. The findings from this study suggest that the communication styles of praise and parental modeling of problem-solving skills are associated with high self-efficacy while parental control is associated with low self-efficacy.

One might further hypothesize that the relationship between parental communication styles and children's self-efficacy is mediated by the type of attributions fostered by the different communication styles. That is, a controlling message is likely to communicate to children that they are unable to solve the problem themselves, and increase the likelihood
that they will attribute failure to a lack of ability. Conversely, a less controlling communication style such as parental problem-solving would facilitate attributions of success to ability and attributions of failure to unstable external factors. As has been shown in previous studies, these types of attributions for success and failure are associated with a problem-solving orientation in both academic and social domains (Diener & Dweck, 1978, 1980; Goetz & Dweck, 1980; Fielstein, Klein, Fischer, Hanan, Koburger, Schneider, & Leitenberg, 1985). In the study by Fielstein, et al., these types of attributions were specifically observed in children with high self-esteem following success and failure in hypothetical social situations. Finally, praise would ultimately reinforce children's beliefs that they are able to engage in effective problem-solving behaviors.

It is also important to consider the effects of the child's behavior on the parent (Bell & Harper, 1977). That is, it is likely that less competent problem-solving behavior on the part of the child might stimulate more controlling behavior by the parent. This, in turn, would foster low self-efficacy
within the child. In a similar fashion, high competence on the part of the child would elicit less controlling behavior such as praise and modeling, which would then enhance self-efficacy. Thus, it is possible that the parent's and child's behavior interact in a circular fashion to produce the relationship between parental communication and child self-efficacy as found in this study.

The fact that certain types of parental communication did not differentiate parents of high and low self-efficacy children also merits discussion. The low rates of occurrence of certain behavioral categories may have been due to the experimental condition. That is, the artificial problem situation created within the laboratory type setting may have predisposed parents to be "on good behavior;" and hence, not engage in such behavior as "Critical Statements" or "Direct Command" as readily as they would in a more natural setting. In addition, all parents were aware that they were being observed during the problem-solving situation.

In conclusion, this study supports a relationship between self-efficacy and social problem-solving
skills. While not directly tested in this study, the difference between high and low self-efficacy children appears to be in their ability to execute skills (as suggested by their intention responses), rather than in their social knowledge of effective responses. Further, when faced with a difficult problem, high self-efficacy in children is related to the parental behaviors of praise and modeling of problem-solving tactics, while parental control seems to diminish self-efficacy. Future research should examine the relationship between parental messages and children's behavior in more naturalistic social problem-solving situations. In addition, a direct assessment of children's attributions in response to various parental communication styles would better illuminate how parental behaviors influence their children's self-efficacy.
References


Appendix A

Letter of Participation Request/Permission Slip

Dear Parents:

We are asking you to participate in a study about how parents help their children solve everyday problems. The study will take place at University of the Pacific during the months of April and May. It will require a maximum of one hour of you and your child's time, which will be scheduled at your convenience. You will both be asked to listen to stories about a youngster who is having a problem with a classmate. We will ask you and your child for possible ways to solve the problem described in the stories. We will also be observing you trying out an educational toy that is designed for parents to teach children problem-solving skills. In this manner, we hope to identify the best ways that parents can help children deal with the social difficulties youngsters typically encounter. We are hoping to use the information from this study to help other parents teach their children the best ways to get along with others.
All children will receive a small prize for returning this permission slip signed (stating that you either wish or do not wish to participate in this study). Please note that neither your name nor your child's name will be used in recording your comments or behavior. In addition, in appreciation for your cooperation, every child that participates in the study (accompanied by their parent) will receive $10.00 upon completion of the one-hour session.

Please let us know if you wish to take part in this project by signing your name in the appropriate space at the bottom of this page. If you have any questions, please call Dr. Esther Cohen or Deborah Wolfersberger between 9:00 and 5:00 at 466-4316. Thank you so much for your time and attention.

Sincerely,

Dr. Esther Cohen
Deborah Wolfersberger
I consent to participate in a study of children's problem-solving skills and also grant permission for my child to take part. I understand that the study will require approximately one hour of time during which my child will be asked questions about the best ways to solve problems and will also be asked to participate in a problem-solving game. I am also aware that either I or my child may withdraw our participation at any time during the course of this study. I have read and understand the above statement.
Yes, I, ____________________________, agree to participate in this study and also grant permission for my child, ____________________________, to take part.

Signed: ____________________________ Date: ________

Phone Number ____________________ (We will be contacting you by phone to schedule appointments).

No, I, ____________________________, do not wish to participate in this study and do not grant permission for my child, ____________________________, to take part.

Signed: ____________________________ Date: ________
Appendix B

Hypothetical Measures
(Self-Efficacy and Problem-Solving Skill)

Introductory Instructions
(Read to both parent and child)

As you know, we are interested in finding out more about how parents and their children solve problems. Today we will be doing several things together that will provide you with the opportunity to share your information and opinions with us. We hope to use this information to help others who may have trouble solving problems. The first thing we would like to do is talk with you and your child individually about problem situations that you may encounter in your everyday lives. We would like for you, _____ (Parent's name) _____, to come with me and _____ (Child's name) _____ to go with _____ (Experimenter #2's name) ____. After about 15 minutes, you two will work together on a second activity.
We are interested in the way children think about things. What we are going to do is listen to some stories and look at some pictures and then I am going to ask you some questions. I just want to know your ideas. Are you ready to begin?
STORY 1
Here is a picture of Ken (Sarah). Ken (Sarah) just got his/her hair cut, and Phil (Jean) thought it looked funny so s/he began to make fun of him/her. Ken (Sarah) felt upset because s/he didn't want to be teased anymore. S/he had to decide what to do. What's the problem here? (If child cannot identify the problem, re-read and question again until the child understands the problem.) Ken (Sarah) could probably think of lots of things to do to solve his/her problem. What I'd like you to do is tell me all the different things that Ken (Sarah) might say or do to feel okay. Tell me as many different things as you can.

Praise child's efforts and then prompt--What if these things didn't work? Think real hard and tell me some other things s/he might do.
Which one of these things would you do if you were Ken (Sarah)?

What is the best thing that Ken (Sarah) could do in this situation?

Let's say that asking Phil (Jean) how s/he would feel if s/he were being teased is the best thing to do in this situation. How sure are you that you could do this?

1 2 3 4 5
Very unsure Sort of sure Very sure

If your first try didn't work, how likely is it that you would try again?

1 2 3 4 5
Very unlikely Possible Very likely
STORY 2

Here is a picture of some children. Randy (Robin) wants to play softball with a group of boys (girls) but the other kids don't want him/her to play. What is the problem here? (If child cannot identify the problem, re-read the situation and question again until the child understands the problem.) What are all the things Randy (Robin) could do to solve the problem?

Praise the child's efforts and then prompt--What if these things didn't work? Think real hard and tell me some other things s/he might do.

Which one of these things would you do if you were Randy (Robin)?

What is the best thing that Randy (Robin) could do in this situation?
Let's say that the best thing that Randy (Robin) could do is to say "Hey, why don't you guys just try me out!" How sure are you that you could do this?

1 2 3 4 5
Very unsure Sort of sure Very sure

If your first try didn't work, how likely is it that you would try again?

1 2 3 4 5
Very unlikely Possible Very likely
STORY 3

Here is a picture of some children. It was Robert's (Rita's) turn to be first in the lunch line. Jimmy (Jane) tried to get in front of him/her. What is the problem here? What are all the things Robert (Rita) could do to solve the problem?

Praise child's efforts and then prompt--What is these things didn't work? Think real hard and tell me some other things s/he might do.

Which one of these things would you do if you were Robert (Rita)?

What is the best thing that Robert (Rita) could do in this situation?
Let's say that the best thing that Robert (Rita) could do is to say, "I was here first, I think you should move to the end of the line". How sure are you that you could do this?

1 2 3 4 5
Very unsure Sort of sure Very sure

If your first try didn't work, how likely is it that you would try again?

1 2 3 4 5
Very unlikely Possible Very likely
STORY 4
Let's look at some other pictures. Tony (Tracy) was out on the playground and he/she walked in front of another child. The other child got angry and hit him/her. S/he had to decide what to do. What's the problem here? What are all the things that Tony (Tracy) could do to solve the problem?

Praise child's efforts and then prompt--What if these things didn't work? Think real hard and tell me some other things s/he might do.

Which one of these things would you do if you were Tony (Tracy)?

What is the best thing that Tony (Tracy) could do in this situation?
Let's say that the best thing that Tony (Tracy) could do is to say, "You shouldn't have hit me, I didn't walk in front of you on purpose!" How sure are you that you could do this?

\[
\begin{array}{ccccc}
1 & 2 & 3 & 4 & 5 \\
\text{Very unsure} & \text{Sort of sure} & \text{Very sure}
\end{array}
\]

If your first try didn't work, how likely is it that you would try again?

\[
\begin{array}{cccccc}
1 & 2 & 3 & 4 & 5 \\
\text{Very unlikely} & \text{Possible} & \text{Very likely}
\end{array}
\]
CSPI

We are interested in finding out how you feel about your friends and the kinds of games and things you like to do with your friends. Below are 22 questions that we would like you to answer by circling the best answer for you for each of the situations. There are no right or wrong answers, whatever you feel is right for you is the correct answer. Here are three questions to practice with:

1. Two kids from school are walking past your house while you are playing. Saying hello to them is ______ for you.
   (1) Really hard! (2) Hard (3) Easy (4) Really easy!

2. Your best friend asks you to go skating with him/her. Telling him/her yes or no is ______ for you.
   (1) Really hard! (2) Hard (3) Easy (4) Really easy!

3. Some kids at school who you don't know very well want to borrow your brand new bike. Saying no to them is ______ for you.
   (1) Really hard! (2) Hard (3) Easy (4) Really easy!
1. Some kids want to play a game. Asking them if you can play is ______ for you.
   (1) Really hard! (2) Hard (3) Easy (4) Really easy!

2. Some kids are arguing about how to play a game. Telling them the rules is ______ for you.
   (1) Really hard! (2) Hard (3) Easy (4) Really easy!

3. Some kids are teasing your friend. Telling them to stop is ______ for you.
   (1) Really hard! (2) Hard (3) Easy (4) Really easy!

4. You want to start a game. Asking other kids to play the game is ______ for you.
   (1) Really hard! (2) Hard (3) Easy (4) Really easy!

5. A kid tries to take your turn during a game. Telling the kid it is your turn is ______ for you.
   (1) Really hard! (2) Hard (3) Easy (4) Really easy!

6. Some kids are going to lunch. Asking if you can sit with them is ______ for you.
   (1) Really hard! (2) Hard (3) Easy (4) Really easy!
7. A kid cuts in front of your in line. Telling the kid not to cut in is _______ for you.
   (1) Really hard! (2) Hard (3) Easy (4) Really easy!

8. A kid wants to do something that will get you into trouble. Asking the kid to do something else is _______ for you.
   (1) Really hard! (2) Hard (3) Easy (4) Really easy!

9. Some kids are making fun of someone in your classroom. Telling them to stop is _______ for you.
   (1) Really hard! (2) Hard (3) Easy (4) Really easy!

10. Some kids need more people to be on their teams. Asking to be on a team is _______ for you.
    (1) Really hard! (2) Hard (3) Easy (4) Really easy!

11. You have to carry some things home after school. Asking another kid to help you is _______ for you.
    (1) Really hard! (2) Hard (3) Easy (4) Really easy!
12. A kid always wants to be first when you play a game. Telling the kid you are going to be first is ______ for you.
   (1) Really hard! (2) Hard (3) Easy (4) Really easy!

13. Your class is going on a trip and everyone needs a partner. Asking someone to be your partner is ______ for you.
   (1) Really hard! (2) Hard (3) Easy (4) Really easy!

14. A kid does not like your friend. Telling the kid to be nice to your friend is ______ for you.
   (1) Really hard! (2) Hard (3) Easy (4) Really easy!

15. Some kids are deciding what game to play. Telling them about a game that you like is ______ for you.
   (1) Really hard! (2) Hard (3) Easy (4) Really easy!

16. You are having fun playing a game but the other kids want to stop. Asking them to keep playing is ______ for you.
   (1) Really hard! (2) Hard (3) Easy (4) Really easy!
17. You are working on a project. Asking another kid to help is ______ for you.
   (1) Really hard! (2) Hard (3) Easy (4) Really easy!

18. Some kids are using your play area. Asking them to move is ______ for you.
   (1) Really hard! (2) Hard (3) Easy (4) Really easy!

19. Some kids are deciding what to do after school. Telling them what you want to do is ______ for you.
   (1) Really hard! (2) Hard (3) Easy (4) Really easy!

20. A group of kids want to play a game that you don't like. Asking them to play a game that you like is ______ for you.
   (1) Really hard! (2) Hard (3) Easy (4) Really easy!

21. Some kids are planning a party. Asking them to invite your friend is ______ for you.
   (1) Really hard! (2) Hard (3) Easy (4) Really easy!
22. A kid is yelling at you. Telling the kid to stop is ______ for you.

(1) Really hard! (2) Hard (3) Easy (4) Really easy!
CSPI (For Parent)

We are interested in finding out how you feel about your child's friends and the kinds of games and things that he/she likes to do with friends. Following are 22 questions that we would like you to answer by circling the best answer for your child as you see them in each of the situations presented. There are no right or wrong answers, whatever you feel is right for your child is the correct answer. Here are three questions to serve as examples for you:

1. Two kids from school are walking past your house while your child is playing. Saying hello to them is _______ for your child.
   (1) Really hard! (2) Hard (3) Easy (4) Really easy!

2. Your child's best friend asks your child to go skating with them. Telling him/her yes or no is _______ for your child.
   (1) Really hard! (2) Hard (3) Easy (4) Really easy!

3. Some kids at school who your child doesn't know very well want to borrow your child's bike. Saying no to them is _______ for your child.
   (1) Really hard! (2) Hard (3) Easy (4) Really easy!
If you understand, then please begin with the following items. Continue until you have answered all 22 questions. Please try to answer all of the questions if possible.

1. Some kids want to play a game. Asking them if he/she can play is _____ for your child.
   (1) Really hard! (2) Hard (3) Easy (4) Really easy!

2. Some kids are arguing about how to play a game. Telling them the rules is _____ for your child.
   (1) Really hard! (2) Hard (3) Easy (4) Really easy!

3. Some kids are teasing your child's friend. Telling them to stop is _____ for your child.
   (1) Really hard! (2) Hard (3) Easy (4) Really easy!

4. Your child wants to start a game. Asking other kids to play the game is _____ for your child.
   (1) Really hard! (2) Hard (3) Easy (4) Really easy!
5. A kid tries to take your child's turn during a game. Telling the kid it is his/her turn is ______ for your child.
   (1) Really hard! (2) Hard (3) Easy (4) Really easy!

6. Some kids are going to lunch. Asking if he/she can sit with them is ______ for your child.
   (1) Really hard! (2) Hard (3) Easy (4) Really easy!

7. A kid cuts in front of your child in line. Telling the kid not to cut in is ______ for your child.
   (1) Really hard! (2) Hard (3) Easy (4) Really easy!

8. A kid wants to do something that will get your child into trouble. Asking the kid to do something else is ______ for your child.
   (1) Really hard! (2) Hard (3) Easy (4) Really easy!

9. Some kids are making fun of someone in your child's classroom. Telling them to stop is ______ for your child.
   (1) Really hard! (2) Hard (3) Easy (4) Really easy!
10. Some kids need more people to be on their teams. 
   Asking to be on a team is ______ for your child.  
   (1)Really hard! (2)Hard (3)Easy (4)Really easy!

11. Your child has to carry some things home after school. Asking another kid to help him/her is ______ for your child.  
   (1)Really hard! (2)Hard (3)Easy (4)Really easy!

12. A kid always wants to be first when your child plays a game. Telling the kid he/she is going to be first is ______ for your child. 
   (1)Really hard! (2)Hard (3)Easy (4)Really easy!

13. Your child's class is going on a trip and everyone needs a partner. Asking someone to be your child's partner is ______ for your child.  
   (1)Really hard! (2)Hard (3)Easy (4)Really easy!

14. A kid does not like your child's friend. Telling the kid to be nice to your child's friend is ______ for your child.  
   (1)Really hard! (2)Hard (3)Easy (4)Really easy!
15. Some kids are deciding what game to play. Telling them about a game that he/she likes is ______ for your child.
   (1)Really hard! (2)Hard (3)Easy (4)Really easy!

16. Your child is having fun playing a game but the other kids want to stop. Asking them to keep playing is ______ for your child.
   (1)Really hard! (2)Hard (3)Easy (4)Really easy!

17. Your child is working on a project. Asking another kid to help is ______ for your child.
   (1)Really hard! (2)Hard (3)Easy (4)Really easy!

18. Some kids are using your child’s play area. Asking them to move is ______ for your child.
   (1)Really hard! (2)Hard (3)Easy (4)Really easy!

19. Some kids are deciding what to do after school. Telling them what he/she wants to do is ______ for your child.
   (1)Really hard! (2)Hard (3)Easy (4)Really easy!
20. A group of kids want to play a game that your child does not like. Asking them to play a game that he/she likes is ______ for your child. 
(1) Really hard! (2) Hard (3) Easy (4) Really easy!

21. Some kids are planning a party. Asking them to invite his/her friend is ______ for your child.
(1) Really hard! (2) Hard (3) Easy (4) Really easy!

22. A kid is yelling at your child. Telling the kid to stop is ______ for your child.
(1) Really hard! (2) Hard (3) Easy (4) Really easy!
Instructions for Structured Activity
(Read to both parent and child)

We'd like to develop an educational toy designed to improve problem-solving skills. We are hoping that it can be used in the home by parents and their children. We'd like you to help us find out if it is a good toy to use. A set of five block-matching games will be used today. (Child's name) is to work on the five tasks, spending as much time as he/she would like on each of them. Here is a list of the correct answers for each of the five tasks (hand the answer key to the parent only at this point). You may do whatever you like to help your child match the blocks correctly for each set. You will have 20 minutes to try and complete the tasks correctly. I will let you know when the time is up. Are you ready to get started?

(If yes, lead them to the experimental room with one-way mirror system and ask them to be seated and begin working.)

(If they do not understand, read the instructions a second time and then ask again if they are ready to begin.)
Answer Key

(1) Hand--Foot block matching task;
    Right, Left, Right, Left, Left, Right, Left, Right

(2) Triangle-Circle-Square block matching task;
    (Answer for order is on the underneath side of each block)

(3) Concealed block matching task;
    56, 80, 66, 78, 84, 76, 64, 72

(4) Form Completion block matching task;
    (Answers are labeled one through five for correct order and are on the underneath side of each block)

(5) Time-telling block matching task;
    4:15, 10:59, 3:07, 9:20, 1:16, 5:46, 7:45, 7:30

(6) Dot Estimation block matching task;
    (Answers are labeled one through eight for correct order and are on the underneath side of each block)
Appendix C

Scoring Guidelines and Behavioral Code

Scoring Alternatives

Story 1

Ken's/Sarah's problem is that he/she feels upset because Phil/Jean is teasing him/her about his/her haircut.

Alternatives (Alt's) should be scored when the protagonist takes action to stop the teasing or to avoid further teasing by the antagonist. This includes verbal requests to stop the teasing or talking things over, ignoring or walking away, asking another for help, engaging in another activity or physical or verbal retaliation.

i.e.  
(1) Tell him to stop
(2) Walk away
(3) She can just smile
(4) Put a hat on
(5) Play with someone else
(6) Call them names
(7) Hit him
Story 2

Randy's/Robin's problem is that s/he wants to play baseball with a group of kids but is not sure if the kids will let him play.

Alt's should be scored when the protagonist takes action to either play with the group of kids, or asks the other kids if s/he can play. This includes bargaining, showing the kids s/he can play or help to set up for the game. Seeking out other friends or activities are also to be considered Alt's as they are nonconfrontative alternatives to the problem. Walking away and going home are also to be considered Alt's as they are nonconfrontative alternatives which also typify withdrawal or withdrawn behavior.

i.e. 
(1) Ask them if she could play
(2) Ask if they need another player
(3) Ask them to try him out
(4) Tell them he'd be catcher
(5) Tell them you can use my mitt and ball
(6) Just start playing
(7) Help bring the equipment
(8) Throw a fast ball
(9) Get some other kids and start playing

(10) Hit them

(11) Call them a name

**Story 3**

Robert's/Rita's problem is that s/he is supposed to be first in the lunch line and another child tries to get in front and take the first position in line.

Alternatives should be scored when the protagonist makes a direct verbal or physical action in attempt to retain his/her position in line. This includes verbal requests, talking out the problem, asking for help, engaging in another activity or physical or verbal retaliation.

i.e. (1) Tell her that it is her turn

(2) Tell the teacher about it

(3) Get in front of her

(4) Push her back to her own place

(5) Say it isn't nice to take her place like that
Tony's/Tracy's problem is that s/he walked in front of another boy/girl and s/he got mad and hit Tony/Tracy.

Alt's should be scored when the protagonist takes action to stop the antagonist's aggressive actions or avoid further aggressive confrontation. Alt's include ignoring or walking away, verbal requests to stop hitting or talking it over, apologizing, getting help from another, seeking other friends or activities or physical or verbal retaliation.

i.e. (1) go away
(2) Try to stay away from him
(3) Tell the person it wasn't nice to do that
(4) Tell her nicely to please leave me alone
(5) Talk about it/apologize
(6) Tell the principal
(7) Call her a name
(8) Hit her back really hard
Scoring Solution Variants

Variants (Var's) are variations on or elaborations of a theme originated in a previous Alt given to the same story. The following is a list of rules to consider when scoring Alt's and Var's.

Rule 1: A Var should be scored when the verb or action remains the same but the object of the verb (e.g., location, person, thing, or time of the action) is varied.

i.e. Story 1
(1) Put a hat on (Alt)
(2) Put a cover over it (Var)

Story 2
(1) Play in another game (Alt)
(2) Play with other friends (Var)

Rule 2: Asking versus pleading versus telling. Different ways of asking or telling someone to do something should be score as different Alt's. Questions, pleas, assertive verbalizations all represent distinctly different alternatives and should be credited as unique solutions to the problem.
i.e. Story 1

(1) Tell her to stop (Alt)

(2) Ask her why she's teasing (Alt)

Story 3

(1) Tell her that it is her turn (Alt)

(2) Ask her if she can have her turn (Alt)

Rule 3: Verbalizing versus carrying out an action. Carrying out a suggested solution to the problem and having the protagonist say or suggest the solution (or in the reverse order) should be scored as Alt and Var.

i.e. Story 2

(1) Go up to the group and say, "Can I play?" (Alt)

(2) Ask them if she can play (Var)

Story 4

(1) Say, "Please leave me alone" (Alt)

(2) Beg her to leave her alone (Var)
Offering versus giving are scored as an Alt and Var.

i.e. **Story 1**

(1) Offer to give her candy if she stops (Alt)

(2) Give her some candy to stop (Var)

**Story 2**

(1) Offer to give them his new mitt and ball (Alt)

(2) Give them his new mitt and ball (Var)

Exceptions: If verbalizations of a solution represent a different strategy than carrying it out, usually a threat versus an action, two Alt's should be scored.

i.e. **Story 1**

(1) He could tell the teacher (Alt)

(2) He could say, "I'm gonna tell the teacher" (Alt)
Story 4

(1) Tell him he's gonna beat him up (Alt)
(2) Beat him up (Alt)

However, caution should be taken when using this rule for occasionally the action is irrelevant while the verbalization of the action is acceptable.

i.e. Story 1

(1) He could hate them (Irr)
(2) He could say, "I hate you" (Alt)

Story 2

(1) He could not like them anymore (Irr)
(2) He could say, "I won't like you anymore" (Alt)

Rule 4: Generic followed by a specific or specific followed by a generic. If a child gives a global response and then follows it with a specific example or vice versa (i.e., specific followed by a generic) the solutions should be scored as Alt, Var.
i.e. **Story 2**

(1) Go up to them and say, "Would you let me play?" (Alt)

(2) Ask them right out (Var)
   (This is a specific followed by a generic)

**Story 4**

(1) Talk to him about it (Alt)

(2) Say, "How would you like it if I hit you" (Var)
   (This is a generic followed by a specific)

Caution should also be taken when using this rule as the generic or global responses may be irrelevant while the specific response is acceptable.

i.e. **Story 2**

(1) Try to make friends (Irr)

(2) Try to play with them and be nice (Alt)

**Rule 5:** The use of and, or, like, and other conjunctions within the same sentence. This is probably the most difficult scoring rule to use as often children will connect two different solutions
with "and" or "or." It is important to keep in mind that two statements connected by "and" in which one involves a rephrasing, clarification or elaboration of the other only one alternative should be scored.

i.e. **Story 2**

(1) Ask them and tell them he is a good player (Alt)

**Story 3**

(1) Tell her to wait her turn and don't get in front of her (Alt)

While these statements do involve two actions (asking and telling), they represent one thought which is occurring at one point in time and thus should be scored as one Alt. When the conjunction "or" is used and a set of actions is broken up in time, an Alt and Var should be scored.

i.e. **Story 1**

(1) Ask the teacher (Alt) or principal (Var)

(2) Bring a hat (Alt) or get a hat from another kid (Var)
This rule also applies to the use of "and" when a set of telling people at the same time is broken.

i.e. Story 4

(1) He could tell the teacher (Alt) and his mother (Var)

However, as mentioned previously, objects connected by "and," "or," "like," etc. which are not broken by time should be scored as one Alt.

i.e. Story 1

(1) He could tell his mother and father (Alt)

Story 2

(1) She could make friends by saying she would let them play in her game (Alt)

Often times children will give solutions which represent multiple expressions of the same "generic" class of activity. These solutions can be "grouped" into categories of solutions, e.g., help-seeking, ignoring, verbal assertion. These types of solutions when appearing in the same story protocol should be
scored as Alt, Var. Examples of the most common variant categories for each story are given below.

**Story 1**

(1) Help seeking
   a. Tell the teacher (Alt)
   b. Tell his parents (Var)
   c. Tell the principal (Var)

(2) Nonconfrontative, Ignoring
   a. Don't go around that kid (Alt)
   b. Don't listen to him (Var)
   c. Ignore him (Var)
   d. Not let it bother her (Var)

(3) Fixing hair
   a. Wear a wig (Alt)
   b. Fix her hair up (Var)
   c. Comb her hair differently (Var)

**Story 2**

(1) Nonconfrontative direct action: Seeking out other friends or activities with others.
   a. Look for another ball game (Alt)
   b. Try another game, soccer (Var)
   c. Go off and get other kids (Var)
   d. Play Greek dodgeball (Var)
e. Try to start her own game (Var)
f. Try to play a different game (Var)
g. Go do something by herself (Alt)

Note: g. is a separate alternative as it involves playing alone rather than with other kids.

(2) Verbal assertion: Ask to play.
   a. Ask to play (Alt)
   b. Ask them to give her a chance (Var)
   c. Tell her friends she can play well (Alt)

Note: c. is also a separate Alt as it involves the act of telling or trying to convince the others she can play well.

Story 3

(1) Help seeking: Getting outside help.
   a. Tell the teacher (Alt)
   b. Tell someone in charge (Var)
   c. Tell the principal (Var)

(2) Nonconfrontative: Ignoring
   a. Stay where she is (Alt)
   b. Don't do anything and just stay there (Var)
   c. Just ignore her (Var)
(3) Verbal assertion: Reasons for not crowding
   a. Ask her how she would feel if I went in front of her (Alt)
   b. Tell her, "You wouldn't like it if I did that to you" (Var)

Story 4

(1) Help seeking:
   a. Tell the teacher (Alt)
   b. Tell the principal (Var)
   c. Tell the parents (Var)
   d. Tell her sister to beat him up (Alt)

Note: d. is a separate alternative as it involves telling her sister to do something specific.

(2) Nonconfrontative: Ignore, walk away.
   a. Just ignore him (Alt)
   b. Stay away from him (Var)
   c. Don't walk in front of him (Var)
   d. Don't go by him (Var)
   e. Stay around other friends (Alt)
   f. Don't hit her back (Alt)

Note: e. is to be scored as a separate alternative as it involves the unique action of staying around other friends as opposed to just staying away from or
ignoring the antagonist. f. is also scored as a separate alternative as it involves controlling one's anger rather than simply walking away.

Scoring Irrelevant Responses

In all of the stories a response is to be scored as Irrelevant (Irr) if it is completely unrealistic or excessively vague. Irrelevants are also scored if a response is a nonprotagonist initiated act, irrelevant to the study, a misinterpretation of the story, or a mere repetition or rephrasing of the story problem. Below is a list of examples for each story.

**Story 1**

(1) Let his hair grow back
(2) They could say sorry for teasing him
(3) She could wear pretty dresses
(4) He could fee bad

**Story 2**

(1) Become a pro baseball player
(2) Try not to stoop to their level
(3) They might ask him
(4) Show them she'd be their friend if they let her play
(5) Try making friends
Story 3
(1) She shouldn't be crowding
(2) She doesn't like to be first anyway
(3) The teacher should get him

Story 4
(1) He could go to a judge
(2) The teacher could yell at him
(3) He could have some ice cream
(4) He felt bad cuz he didn't like being hit

i.e.

Story 1
(1) Ask him to stop teasing him
   (Alt)
   (2) Tell the teacher (Alt)
   (3) Ask him to stop teasing him
      (Rep)
   (4) Tell the principal (Var)

Effectiveness Scoring Procedure

Each solution is rated on a 5-point effectiveness scale (1=minimally effective, 5=maximally effective). In the following section general guidelines for scoring
effectiveness are presented as well as several examples at each level of effectiveness for each of the six stories. Each of the ratings given as examples represents the mode (most frequent score) given by 5 independent adult judges.

The following guidelines should be used in scoring effectiveness:

(1) First, compare the solution with the examples provided for that story. If the solution is the same as or a slightly reworded version of the example, it should be given the same effectiveness rating as the example.

(2) If the solution does not appear as an example then the example should be used as a general guideline in making a scoring decision. If the solution seems similar in content to one of the examples, it should receive a comparable effectiveness rating. For example, in Story 1, the responses, "Say I like my hair this way" and "Talk to him/her about it" appear as examples whose effectiveness rating is 5. The responses, "Say it's my hair and you don't have to like it" and "Say it doesn't look funny" do not appear as examples but are similar to telling her to stop and
saying "I like my hair this way" as they both involve the strategy of sticking up for oneself by means of verbal assertion. In such cases, where the difference is slight, the same effectiveness should be assigned. 

(3) If a solution is not among the examples provided and does not appear similar to any of the examples, the following criteria should be used to determine an effectiveness rating:

(a) Maximizes positive consequences; this refers to the extent to which the solution increases the likelihood of a positive outcome for the people involved in the story problem.

(b) Minimizes negative consequences; this is the extent to which the solution decreases the likelihood of a negative outcome (such as physical injury or hurt feelings) for each character involved.

When considering possible positive and negative consequences of a solution, it is helpful to think in terms of the feelings, thoughts or possible reactions of all story characters but to weigh most heavily those affecting the protagonist. For example, in Story 4, walking away from the antagonist after just being hit will probably lead to mostly good consequences for the
protagonist (i.e., s/he will not get in a fight, and thus avoid getting in trouble) but still leaves the antagonist angry. On the other hand, talking it out with the antagonist or telling him/her not to hit again will lead to mostly good consequences for both parties. Thus, the first example would receive an effectiveness rating of 4 and the latter a 5.

It is important to consider both the short and long term consequences of a solution. For example, in Story 1, going home that day and telling his/her mom about it is an effective alternative in terms of long-term consequences (i.e., the child may eventually get some aid from the mother) but it does little in terms of solving the immediate problem (i.e., talking to the teacher or principal right then) and, thus, should get an effectiveness rating of about 2 as compared to the latter solution which should get a rating of about 3.

(c) Do-ability: It is also important to consider the extent to which a solution is do-able or realistic. For example, in Story 4, going home and telling the mother may seem like a good solution, yet it is highly unlikely that the child's mother will immediately drive
to school and attempt to solve a problem that has already taken place.

(d) **Hierarchy of effectiveness**: In making scoring decisions it is helpful to arrange solutions or types of solutions into a hierarchy of effectiveness. In all of the stories, assertive solutions are generally considered to be the most effective, followed by nonconfrontative solutions, with aggressive solutions being the least effective.

More specifically, in the peer conflict stories, we can think of verbally assertive solutions (i.e., talk it out with them) as being the most effective, followed by nonconfrontative direct actions (i.e., walk away, ignore them), nonconfrontative direction actions (i.e., find someone else to play with) and seeking help from an authority (i.e., tell the teacher) with verbally or physically aggressive solutions as the least effective (i.e., call him a name, hit him).

Similarly, in the peer initiation story, any type of verbal assertion (i.e., ask them to play, ask them if he can hit next) or direct action (get in the game and start playing) are considered the most effective followed by nonconfrontative direct action (i.e., play
with someone else), help seeking (i.e., ask his mom for advice), and nonconfrontative or aggressive solutions being the least effective (i.e., forget it, hit him).

After weighing each of the above criteria equally, solutions should be rated for effectiveness according to the extent to which the solution solves the problem and reaches the desired outcome.

On the following pages is a set of effectiveness scoring guidelines for each of the stories. When using these guidelines, it is helpful to keep in mind the general rule that if the solution is similar to the examples but is somewhat vague, unrealistic or less directly related to the story problem, it should be given the next lowest effectiveness rating.

Effectiveness Ratings for Story 1--Teasing

General Guidelines

(A) Verbal assertion: Attempts to solve the problem by talking, sticking up for oneself in a nonthreatening manner or simply telling the antagonist to stop are given an effectiveness rating of 5.

i.e.  (1) Talk to him/her about it. (Eff 5)

(2) Say, "I like it this way." (Eff 5)
(3) Tell her/him to stop.  (Eff 5)
(4) Ask him/her how she would feel.  
       (Eff 5)

Exceptions

Verbalizations which involve rationalizations for why she got a haircut or carry a slightly negative affect (yet are not verbally aggressive) should be given an effectiveness rating of 4.

i.e.  (1) Explain that her mom made her do it.  
       (Eff 4)

(2) Say she's not a true friend.  (Eff 4)

(3) Tell him/her to leave me alone.  
       (Eff 4)

(B) Nonconfrontative behaviors and engaging in appropriate alternative activities: Ignoring, leaving the scene or doing something else to avoid the teasers are generally scored as 4's.

i.e.  (1) Ignore it.  (Eff 4)

(2) Walk away.  (Eff 4)

(3) Go play with other friends.  (Eff 4)

(4) Not let the teasing bother her.  
       (Eff 4)
Exceptions

Nonconfrontative responses which are either vague, unrealistic or overreactions to the story problem are rated as 3's.

i.e. (1) Act friendly to other kids (Eff 3)
(2) Stay away (Eff 3)
(3) Try not to go by her (Eff 3)
(4) Just go home (Eff 3)

Nonconfrontative responses which imply that the protagonist's feelings are still hurt (which is in contrast to the story outcome in which the protagonist is feeling better) should be scored as 2.

i.e. (1) Just live with it (Eff 2)
(2) Face up to facts (Eff 2)

(C) Help seeking: When the protagonist is seeking help from someone other than the antagonist, the effectiveness rating is generally a 3.

i.e. (1) Tell the teacher (Eff 3)
(2) Talk to somebody about it (Eff 3)

(D) Changing his/her appearance: Attempts to improve his/her appearance by changing or covering up his/her hair are scored 3.

i.e. (1) Make her hair look pretty (Eff 3)
(2) Put a hat on (Eff 3)
Exceptions

Attempts to change one's appearance which are unrealistic or overreactions to the story problem are given an effectiveness rating of 2.

i.e.  (1) Wear a wig (Eff 2)
      (2) Get a new haircut (Eff 2)

(E) Verbal aggression: Lying, threats, and verbalizations which are critical are rated as 2's.

i.e.  (1) Tease him back (Eff 2)
      (2) Tell him he has a funny nose (Eff 2)

(F) Physical aggression: Physical aggressions such as hitting, kicking, etc. are given an effectiveness rating of 1.

i.e.  (1) Hit the other kid back (Eff 1)
      (2) Push the kid so he'll stop (Eff 1)

Specific Solution Examples for Each of the Five Effectiveness Levels: Story 1

Ones

- Hit him/her
- Get in a fight
- Beat up Phil
- Set up a bizarre trap
Twos

- Call the other kid a name
- Tell him/her that s/he has a funny nose
- Just go along with him/her and just say it does look stupid
- Walk up and make fun of his nose
- Just live with it
- Wear a wig

Three's

- Tell the teacher
- Talk to somebody about it
- Act like he wasn't living
- Just go home
- Not play with him in class
- Act friendly to other kids
- Say she's not a true friend
- Explain her mom made her do it
- Say if you don't tease me I'll give you something
- Put a hat on
- Change her hairstyle
Four's

- Find a new friend
- Ignore it
- Smile and walk away
- Not care what they think only what I think
- Not let teasing bother him/her
- Try to be friends

Five's

- Talk to him about it
- Say, "I like it this way"
- Say, "It doesn't look funny"
- Say, "It's my hair and you don't have to like it"
- Tell her/him to stop
- Ask him/her how s/he would feel

Effectiveness Ratings for Story 2--Baseball

General Guidelines

(A) Verbal assertion: Verbalizations which involve directly asking to play or attempting to bargain with the antagonist are rated as 5's.
i.e. (1) Ask them if she could play (Eff 5)
(2) Ask to be an extra (Eff 5)
(3) Tell them he'd be catcher (Eff 5)
(4) Tell them you can use my mitt and ball (Eff 5)

Exceptions

Verbalizations which involve confronting the antagonist but not directly asking them to play or are somewhat vague or unrealistic are scored as 4's.

i.e. (1) Ask them their names (Eff 4)
(2) Ask why she can't play (Eff 4)
(3) Say, "How would you feel?" (Eff 4)
(4) Say, "Make a test for me and if I don't pass I'll leave" (Eff 4)

(D) Direct actions: Indirect actions taken to play with the antagonists or to somehow show them s/he can play are rated as 4's.

i.e. (1) Help bring the equipment (Eff 4)
(2) Catch the ball and bring it to them (Eff 4)

Exceptions

Actions which are unrealistic or vague are scored as effectiveness of 3.
i.e. (1) Show them how good you are (Eff 3)
(2) Just start playing (Eff 3)

Actions which are excessively vague or unrealistic and/or overreactions to the story problem are given an effectiveness rating of 2.

i.e. (1) Try to be a better player than anybody else (Eff 2)
(2) Get on a real baseball team and show them how good you are (Eff 2)
(3) Sneak into their game (Eff 2)

(C) Direct actions which are nonconfrontative: Engaging in appropriate alternative activities are generally scored as effectiveness of 3.

i.e. (1) Get some other kids and play with them (Eff 3)
(2) Try another game (Eff 3)

Exceptions

Actions which are vague in that they do not specify the type of activity to be engaged in should be rated as 2's.

i.e. (1) Find something else to do (Eff 2)

(D) Nonconfrontative and help seeking:
Responses which involve watching the antagonists play...
or seeking assistance from a third party are generally scored as 2's.

i.e.  (1) Tell the teacher  (Eff 2)
      (2) Tell his mom  (Eff 2)
      (3) Just watch  (Eff 2)
      (4) Watch from the sidelines  (Eff 2)

Exceptions

Completely avoiding the problem by walking off or playing by one's self are to be scored as effectiveness of 1. (Note that while in the first story nonconfrontation is an appropriate response, it is considered the least effective type of response in terms of initiating interaction or making friends.)

i.e.  (1) Ignore it  (Eff 1)
      (2) Forget them  (Eff 1)
      (3) Play alone  (Eff 1)

(E) Aggressive responses (either physical or verbal) are given an effectiveness of 1.

i.e.  (1) Bust into the game  (Eff 1)
      (2) Call them a name  (Eff 1)
Specific Solution Examples for Story 2--Baseball

One's

-Ignore it
-Play by himself
-Just don't play
-Stay home and read books
-Hit them
-Bust into the game
-Don't let them play their game,
  walk around it
-Get their bat and ball so they
  can't play
-Call them a name

Two's

-Beg them
-Tell them she's gonna play anyway
-Watch them
-Stay by them and see if they would
  ask her
-Get on a real baseball team and show
  them what she knows
-Pretend she was talking to herself, "I wish I had someone to play with"
-Try to be better than them
-Tell the teacher

Three's

-Be a good player
-Get some other kids and play with them
-Go off and start his own game
-Go home and play catch with his dad in front of them
-Ask someone else
-Just play with them and if she did anything wrong she could leave
-Practice with his dad
-Just start playing

Four's

-Ask why she can't play
-Ask them their names
-Say, "How would you feel"
-Talk it out with them
- Tell them if they let him play his dad would be coach
- Make friends and talk to them and another day they might ask him
- Help bring the equipment

**Five's**

- Ask them if she could play
- Ask if they needed another person to play
- Ask if he could use the bat and take a hit
- Ask them to try him out
- Ask politely
- Have a baseball they might want to use

**Effectiveness Ratings for Story 3—Lunchline**

**General Guidelines**

(A) **Verbal assertion:** Attempts to solve the problem by talking, sticking up for one's position in line in a nonthreatening manner or simply telling the antagonist to give the place back are scored as 4's and 5's.
i.e. (1) Ask nicely to have her place back  
   (Eff 5)  
   (2) Ask how she would feel if her place  
        were taken (Eff 4.5)  
   (3) Tell Jane to get back in line (Eff 4)  
   (4) Tell him not to crowd (Eff 4)  

Exceptions  
Verbalizations which involve less vague  
requests (confronting the antagonist) which do not  
specify a specific behavior are scored as 3.5's.  

i.e. (1) Tell him not to do that (Eff 3.5)  
   (2) Tell her to stop (Eff 3.5)  
   (3) Tell her to quit it (Eff 3.5)  

(8) Nonconfrontative behaviors: Ignoring  
just letting the other child intercede or doing  
something else to avoid a confrontation are generally  
scored as 3's.  

i.e. (1) Just wait until another time to be  
      first (Eff 3)  
   (2) Tell him you'll get his lunch for him  
       (Eff 3)  
   (3) Ignore her and let her take the place  
       for now (Eff 3)  

(C) **Help seeking:** When the protagonist is seeking help from someone other than the antagonist, the effectiveness is also generally rated as 3.

i.e.  
1. Tell the principal (Eff 3)  
2. Tell the teacher (Eff 3)  
3. Tell her mom when she gets home (Eff 3)  

(D) **Verbal aggression and minor physical aggression:** Threats and verbalizations which are critical and any physical movement which seems to be overly assertive and "hostile" are rated as 2's.

i.e.  
1. Get in front of him (Eff 2)  
2. Stand right in front of him (Eff 2)  
3. Step in front of him (Eff 2)  
4. Tell him he's a stupid brat for doing that (Eff 2)  
5. Tell her she's gonna get into trouble for that (Eff 2)  

(E) **Physical aggression:** Physical aggressions such as hitting, kicking, etc. are given an effectiveness rating of 1.

i.e.  
1. Fight her (Eff 1)
(2) Punch him real hard so he falls out of line (Eff 1)

(3) Beat her up so she won't do it again (Eff 1)

Specific Solution Examples for Story 3--Lunchline

One's

-Fight her
-Punch her real hard
-Push him out of the way
-Jump in front of him
-Put her back where she was
-Cut in front of him and then hold him back

Two's

-Get in front of him
-Stand in front of him
-Step in front of him
-Tell the teacher to make him stay for the next lunch
-Say, "I'll punch you if you don't get back"
-Tell him he's a stupid jerk and better move
Three's

- Tell the principal
- Just wait until another time to be first
- Tell her she can go ahead and be first this time
- Ignore her and let her take the place for now
- Tell him you'll get his lunch for him
- Tell the teacher

Four's

- Tell Jane to get back in line
- Tell Jane to move back in line
- Tell Jane she was first
- Tell him not to crowd
- Tell him it is not fair
- Tell him to get back in line where
  - Tell her to get back in line where she's supposed to be
- Ask how she would feel
Five's
- Ask nicely to have her place back
- Say real nice that it isn't nice to crowd, could he have his place back

Effectiveness Ratings for Story 4--Hitting

General Guidelines

(A) Verbal Assertion: Attempts to solve the problem by talking or telling the antagonist not to hit are generally scored as 5's.

i.e. (i.) Talk about it (Eff 5)
(2) Tell him/her nicely to please leave me alone (Eff 5)
(3) Say, "How would you feel if I hit you" (Eff 5)
(4) Tell him/her it's not nice to hit (Eff 5)

(B) Nonconfrontation: Nonconfrontative responses which involve leaving the scene or engaging in an appropriate alternative activity are generally scored as 4's.
i.e. (1) Walk away (Eff 4)
(2) Stay around other friends (Eff 4)
(3) Ignore him/her (Eff 4)
(4) Apologize (Eff 4)
(5) Say, "I sorry I walked in front of you" (Eff 4)

Note: Numbers 4 and 5 are verbal apologies for walking in front of the antagonist and are scored as 4's.

Exceptions

Nonconfrontative responses which are vague or unrealistic should be rated as 3's.

i.e. (1) Don't hit him/her back (Eff 3)
(2) Don't upset him/her (Eff 3)

Nonconfrontative responses which are overreactions to the story problem should be rated as 3's.

i.e. (1) Don't ever walk in front of him/her or do anything he/she didn't like (Eff 3)
(2) Run away (Eff 3)
(3) Be careful not to walk in front of anybody (Eff 3)

(C) Help Seeking: Responses which involve seeking help from someone other than the antagonist are given an effectiveness rating of 3.
i.e. (1) Tell the teacher (Eff 3)
(2) Tell his/her parents (Eff 3)

Exceptions

Solutions stating specifically that the protagonist intends to get the antagonist in trouble are rated as 2 while requesting or telling someone to do something physically aggressive is given an effectiveness of 1.

i.e. (1) Get the other boy/girl in trouble (Eff 1)
(2) Get his/her older brother to hit him/her (Eff 1)

(D) Verbal Aggression: Verbalizations which are threatening, critical or aggressive are given an effectiveness rating of 2.

i.e. (1) Call her a name (Eff 2)
(2) Tell him a story that will make him/her think my friends will beat him/her up (Eff 2)

(E) Physical Aggression: Physical aggressions are always rated as 1's.

i.e. (1) Hit him/her back (Eff 1)
Specific Solution Examples for Story 4--Hitting

One's

- Hit him/her back
- Step on the other kid's toe
- Throw rocks at him/her
- Get older brother/sister to hit him/her

Two's

- Call him/her a name
- Get mad and say nasty words
- Tell him/her a story that will make him think my friends will beat him/her up
- Get the other kid in trouble

Three's

- Tell the teacher
- Go home and tell his/her mom
- Don't walk in front of anybody
- Don't hit him/her back
Four's
- Apologize
- Say sorry for walking in front
- Say excuse me
- Go away
- Try to stay away from him/her
- Go play with other friends
- Try to play with him and be nice
- Ask if they can be friends

Five's
- Tell him/her nicely to please leave me alone
- Tell him/her not to hit
- Say s/he didn't do anything that bad for him/her to have hit
- Say, "How would you like it if I hit you"
- Say, "I'm sorry you have to solve your problems by hitting"
- Say, "I don't want to fight"
- Ask him/her why and settle the problem
-Tell him/her it wasn't nice
-Ask him/her why s/he did it

Content Scoring

Each solution is also to be scored for content. Content is to be scored by placing solutions into one of the 3 following categories:

(1) Assertion
(2) Nonconfrontation
(3) Aggression

The following guidelines should be used when scoring for content:

(A) Assertion includes verbal assertion, direct action and bargaining.

Verbal Assertion. This category includes solutions which are verbal statements using key words such as "tell," "ask," or "say" made by the protagonist which are not aggressive. These statements may or may not be in the first person. But it must be directed toward the antagonist.

1. Ordering, stating, or proposing a solution
   -Tell her that it's not her turn
- Ask her to get at the end of the line

2. Invoking rules or moral values, or sticking up for oneself
   - Say, "You shouldn't crowd"
   - Say, "I was here first"

3. Requests for relevant problem-solving information
   - Ask why she crowded
   - Ask him why he hit him

4. Verbal requests
   - Ask him to go to the end of the line
   - Ask them if she can play

5. Verbal invitation
   - Ask them to come over to his house
   - Ask them to play in her game first

6. Apologies
   - Say, "I'm sorry for walking in front of you"
   - Say sorry

7. Bargaining
   - I'll give you some gum if you let me play
- I'll invite you over to watch video if you let me be first
- If you don't hit me again I'll give you a dollar

8. Compromising
- Tell her she can go first this time, but next time it's your turn

Direct Action. This category includes non-aggressive, non-verbal actions taken by the protagonist to solve the problem. These solutions involve returning the situation to its pre-problem state, restoring equity, or taking positive steps to solve the problem.

- Change her hairstyle
- Play with them
- Put a hat on
- Just start playing
- If the ball went out of the game, try to get it and throw it back so they could see how good he is
- Help bring the equipment

(B) Nonconfrontation refers to those solutions where the protagonist seems to be dealing
more directly with the personal problem of feeling upset than with the interpersonal conflict. This involves avoiding or escaping the problem. In general, these solutions do not engage in an alternative activity.

**Nonconfrontative Direct Action.** This category includes nonaggressive, non-verbal actions taken by the protagonist which are not directed towards the antagonist. These solutions involve engaging in alternative activity or using other resources which require flexible or alternative thinking ability.

- Find someone else to play
- Find new friends
- Stay around other friends
- Find another place in line
- Walk to another part of the playground

**Help Seeking.** This category includes solutions where the protagonist has someone else involved in helping him/her solve the problem. This includes having a third party provide help which does not require that s/he become directly involved in the conflict such as asking advice.
1. **Getting peer involvement**
   - Be around friends so they can stick up for you
   - Ask other kids advice

2. **Telling someone else**
   - Tell the teacher
   - Tell somebody like your mom
   - Tell the principal

3. **Involving a third party**
   - Tell teacher to tell him to leave him alone
   - Ask the teacher to ask the kids if she can play
   - Get older brother or sister or hit him/her

Note that while this last response involves physical aggression, it also involves help seeking which supercedes all other categories.

(C) **Aggression** includes all responses that contain some type verbal or physical aggression toward the antagonist.

**Verbal Aggression.** This category includes verbalizations of threats, insults, lying, or yelling
(in anger) on the part of the protagonist as an attempt to solve the problem. These solutions are different from physical aggression in that the aggression is not directly enacted. Furthermore, these solutions are different from bargaining or verbal assertion in that they must threaten or produce physical pain or upset feelings in order to be considered aggressive. Finally, these aggressive verbalizations must be directed at the antagonist.

- Tell him he has funny hair
- Say, "Wait till you get your hair cut"
- Call them names
- Tell them they're selfish
- Get mad and say nasty words
- Tell him a story that makes him feel like he's rotten

Physical Aggression. This category includes solutions involving physical aggression (e.g., hitting, grabbing, or fighting) directed toward the antagonist as well as attempts to fool, intimidate, trick or trap the antagonist.
- Hit her
- Set up a bizarre trap for him
- Beat up Phil
- Grab it/Take the ball away from them
- Learn how to fight back
- Throw rocks at her
- Step on his toe real hard
Dyadic Verbal and Behavioral Code

1. Critical Statements/Critical Affect:
This category includes any statement by the parent that indicates disapproval or clear correction of the child. Tone of voice, facial expressions (huffs, puffs, sighs, etc.) are all taken into account.
Examples:

No!
No, that block is wrong!
Why are you just giving up?
That's all wrong
You aren't trying at all...

2. Praise Statements/Positive Affect:
This category includes any statement indicating approval or liking of the child's behavior; can be specific or non-specific in terms of the exact behavior being praised. Positive tone of voice and affectionate physical touch are taken into account (also laughter or smiling directed at the child's behavior in an accepting manner).
Examples:

Thanks! (Non-specific)
Good for you! (Non-specific)
You're sitting there so nicely... (Specific)
It's good that you put the block there (Specific)

3. Encouragement Statements:
This category includes any statement that is made by the parent and provides support and encouragement to the child. Particularly for continuing the task; statements of self-worth, self-concept, love and acceptance in spite of the child's failure behavior are included in this category. However, the statement must denote continuation of the task in order to be coded in this category.
Examples:

Keep trying, you're doing fine.
Don't worry that it seems difficult, keep going.
This one is hard for me too, I think we can keep working on it though, don't you?

4. Parental Control:
This category is coded if the parent offers no instructional or informational component to the child in his/her verbalization and instead completes the task (or a portion of the task) without engaging the child in it. An example would be placing all of the blocks in their respective spaces of a given task and not including the child in the act. In other words, the parent is not doing the task in order to teach the child but, rather, just to get it done in time.

5. Giving Instructions:
Explaining how to do the task; usually introductory statements like "We are supposed to match the blocks to the correct picture" or "You slide the block into the space that matches the best." (Most of these responses will probably occur at the beginning of the teaching task.)

6. Direct Command:
This category is coded whenever the parent issues a direct, clearly stated order, demand, or direction in declarative form. The statement must be sufficiently specific as to clearly indicate the behavior that is expected from the child. In particular, these will tend to be statements that leave no choice for the child and do not foster independent problem-solving thinking. The child may either comply or not comply.

Examples:

Put that block over here, I said!
Sit down and keep working!
Stop throwing blocks right now!
7. **Indirect Command:**
This category is coded whenever the parent attempts to direct or redirect the child's verbal or physical behavior by giving a very specific suggestion, statement, or question indicating to the child exactly what behavior is expected. This category involves responses that are not as harsh or authoritarian as in the previous category of direct commands, but again, does not foster independent problem-solving thinking on the part of the child. The child has the choice of accepting or rejecting the parental suggestion. Example:

> Why don't you put the block over here?
> Do you think this block might go over here?
> Let's take all the blocks and put them in front.
> Why don't we put this one here...

8. **Prompts:**
A prompt includes any response on the part of the parent that fosters problem-solving thinking on the part of the child or is intended to do so. This would include suggestions that hint at or indicate a number of possible solutions that the child might implement. A prompt is coded if the parental response assists the child in the generation of a number of solutions to choose from also. This category is much more vague than direct or indirect commands and usually does not refer the child to specific behaviors to engage in order to solve the task. Examples:

> What do you think you should look for on each block?
> What are some blocks that might fit in this space?
> What does this picture remind you of?

9. **Modeling--Nonverbal:**
Any behavioral movement on the part of the parent that is clearly a model for the child to imitate. It must be clear that the parent would like the child to model him/her in order for this category
to be coded. An example would be the placing of a block in the space by the parent (coded modeling) followed by the statement of "Now you do one like that" (coded prompt). In order for an event of modeling to be coded, the observer may have to wait for following commands or prompts in order to identify the parental intent. In any case, modeling is coded only if the behavioral action on the part of the parent is followed or preceded by direction for the child to imitate, or watch the parent.

Examples:

Watch me, and I'll show you how to do it.
Okay, did you just see how I matched that one?
...now you try it.

10. Parental Problem-Solving:
This category includes any statements made by the parent that include self-talk, self-coping statements, and/or self-instructions. Typical of this category would be the parent's "thinking aloud" behavior.

Examples:

"Hmm, it says we place the blocks here in the matching spaces..."
"I guess this is supposed to be hard for adults too...I'm trying to understand this one..."
"I wonder if this is right"

11. Neutral Verbalizations/Acknowledgements:
This category includes parent verbalizations in response to the child's statements, questions, or compliance that contains no manifest content.

Examples:

Yeah
Yes
No (in response to question)
Sure
All-right...
Umm-hmm...
<table>
<thead>
<tr>
<th>CR</th>
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- **Code** -

- **CR**: Critical
- **PR**: Praise
- **EN**: Encouragement
- **ACK**: Acknowledgement
- **MO**: Modeling
- **INS**: Instructions
- **DC**: Direct Command
- **IC**: Indirect Command
- **PRO**: Prompting
- **PC**: Parental Control
- **PPS**: Parent Problem-Solving
All the different things that she could do.
ALL THE DIFFERENT THINGS THAT HE COULD DO