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The effects of a social problem-solving skills training intervention on problem-solving appraisal in aggressive adolescents

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The Ohio State University, 1994
The Effects of a Social Problem-Solving Skills Training Intervention on Problem-Solving Appraisal in Aggressive Adolescents

Dissertation

Presented in Partial Fulfillment of the Requirements for The Degree of Doctor of Philosophy in the Graduate School of The Ohio State University

By

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*****

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1994

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# Table of Contents

Acknowledgments ............................................. ii
Vita ........................................................... iii
List of Tables .................................................. vi

**Chapter**

**I. Introduction** ........................................... 1
  - Problem Statement ...................................... 3
  - Purpose of the Research ................................ 9
  - Research Questions ..................................... 9
  - Major Hypotheses ...................................... 10
  - Minor Hypotheses ...................................... 10
  - Justification for Research .............................. 11
  - Definition of Terms .................................... 12
  - Limitations ............................................ 14

**II. Literature Review** .................................... 17
  - Historical Background .................................. 18
  - Verbal Mediation ....................................... 21
  - Self-Verbalization and Hyperactivity ................. 26
  - Behavior .............................................. 28
  - Social Problem-Solving Skills ......................... 32
  - Training .............................................. 32
  - Cognitive-Behavioral Paradigm ......................... 36
  - Social Information Processing ......................... 38
  - Generalization Issues .................................. 44
  - Cognitive Mediation and Self-Schemata ............... 49
  - Problem-Solving Appraisal ............................. 51
  - Modifying Problem-Solving Appraisal ................... 55

**III. Methodology** ........................................... 60
  - Subjects .............................................. 60
  - Instrumentation ....................................... 61
  - Procedures ........................................... 66
  - Outline of Treatment Procedures ....................... 71
List of Tables

1. Statistics for Normative .................................. 64
2. Statistics for Clinical Samples ......................... 64
3. Distribution of Gender of Subjects for Treatment, Control Groups and Total Sample ............. 83
4. Distribution of Ages of Subjects for Treatment, Control Groups and Total Sample ............. 84
5. Distribution of Subjects in Educational Programs for Treatment, Control Groups and Total Sample .... 84
6. Distribution of Grade Level of Subjects in Treatment, Control Groups and Total Sample ............ 85
7. Distribution of DSM III-R Diagnoses of Subjects in Treatment, Control Groups and Total Sample .... 86
8. Distribution of GAF Scores of Subjects for Treatment, Control Groups and Total Sample ............ 86
9. Pretreatment Means and Standard Deviations for the Problem-Solving Inventory Scales and Connors' Rating Scales .......... 87
11. Means and Standard Deviations for Problem-Solving Inventory for the Normative Clinical and Nonclinical Samples and the Research Sample Pretreatment .... 88
12. Means and Standard Deviations for Problem-Solving Inventory for the Normative Clinical and Nonclinical Samples and the Research Sample Pretreatment .... 89
13. Analysis of Variance for Problem-Solving Confidence Scale ........................................ 90
14. Analysis of Variance for Approach-Avoidance Style Scale ........................................ 91
15. Analysis of Variance for Personal Control Scale ................................................. 92
16. Analysis of Variance for CPRS-93 ................................................. 93
17. Analysis of Variance for CTRS-39 ................................................. 94
Introduction

The saddest and most alarming phase of the present crime situation is not the loss of life and property nor the anxiety experienced by the law-abiding citizens, all of which are serious enough but what is infinitely more serious is the fact that youth play such an outstanding role in the "gruesome drama". (Sullenger, 1936, p. vii)

Interest in the treatment of aggressive and antisocial behavior in children and adolescents has a relatively long history (e.g. Healy, 1915; Goldstein, 1988). Over the years, treatment methodologies have reflected the psychological Zeitgeist. Within the past twenty years, social and interpersonal problem-solving skill training has emerged as a widely practiced modality for the treatment of childhood aggressive behavior.

Although Jahoda (1958) may have been one of the earliest theorists to recognize problem-solving skills as a criterion for positive mental health, it was not until the 1970's (e.g. D'Zurilla & Goldfried, 1971) that problem-solving skill training was accepted as a viable treatment modality in clinical practice. Based on a growing body of research at that time, it was being shown that aggressive children tend to have deficits in skills that are required to successfully negotiate social and interpersonal relationships (Camp, Blom, Hebert, & Van Doorninck. 1977;
Camp, 1977; Douglas, Parry, Marton, & Garson, 1976; Freedman, Rosenthal, Donohoe, Schlundt, & McFall, 1978; Meichenbaum & Goodman, 1971; Synder & White; Zahavi & Asher, 1978). With the growing acceptance of problem-solving skills training and the growing data documenting skill deficits, social problem-solving skill training was providing a measure of hope where other treatment modalities (e.g. psychoanalysis) have failed.

Throughout the 1970' and 1980's, social problem-solving skills training emerged as a popular intervention with aggressive children and adolescents. By the late 1980's, however, reservations were being expressed about the efficacy of social problem-solving skills training with aggressive adolescents and children. One problem noted by Dumas (1989) and Kazdin (1985, 1986, 1987) was that although skills training does bring about improvements in behavior, the changes rarely achieve normal ranges of functioning.

... when changes have been obtained, no study has shown that the intervention had been effective in bringing the subjects' level of antisocial conduct within the normative range; in other words, evidence of clinical (as opposed to statistical) significance is not available at this time. (Dumas, 1989, p. 203)

A second issue that was being expressed in the literature was that the skills that were being taught in training programs were not showing up in "real life" situations. That is to say, the research was showing that the skills taught in problem-solving skills training
programs were not being used by the participants to solve interpersonal problems and conflicts in their daily lives.

Problem Statement

The assumption was that once problem-solving skills are acquired, they will be put to use to solve interpersonal problems, whether the conflicts are with peers, parents or with teachers. That is to say, as noted by Urbain and Kendall (1980, p. 110), there is a "built in generalization" as part of the problem-solving treatment. Stated somewhat differently, problem-solving skills training was presented as an instrumental outcome (Nezu & Nezu, 1993). As an instrumental outcome, it is assumed that it would help the person achieve his/her ultimate outcome, such as the reduction of aggressive behavior.

However, based on their literature reviews, Amish, Gesten, Smith, Clark and Stark (1988), Dumas (1989), Gresham (1985), Hain (1984) and Tisdelle and St. Lawrence (1988) have concluded that there is no consistent evidence showing that social skills training with aggressive adolescent generalize across situations or over time. Discussing the generalization issue in anger control training programs, Fiendler (1991) makes the following point:

Adolescents report less anger, fewer conflicts or hassles with others and increased problem solving ability. However, these changes in verbal behavior do not seem to impact significantly on rates of aggression in the natural environment; if there is some effect, it is one of maintaining or slightly reducing levels of disruptive or aggressive behavior. (p. 84)
Despite the absence of consistent empirical support for training generalization, problem-solving skill training continues to be widely advocated and used in clinical practice with aggressive adolescents. One potential problem with this practice is that when faced with poor or unsuccessful treatment outcomes, clinicians may attribute the poor outcome to their clients. They may tend to perceive their clients as "resistant", uncooperative or too psychopathological to benefit from treatment. Such labeling, if not inaccurate, clearly is not helpful and perhaps even detrimental to future treatment efforts.

In his work, Developing Capable Young People, Glenn (1984) recognizes the problem of training generalization as lying in the perceptions individuals hold about themselves. Glenn's basic premise, which is grounded in Adlerian theory, is that perception is the most important aspect of human beings' psychology:

Perceptions are not strictly identical with reality, for man is able to transform his contact with the external world according to the demands of his uniqueness. Thus, what a person perceives, and how he does so, constitutes his particular uniqueness. Perception is more than a mere physical process. It is a psychological function, and from the way in which a man perceives, one can draw profound conclusions regarding his inner self. (Ansbacher & Ansbacher, 1956, p.210)

Glenn argues that a distinction must be made between skills, such as problem-solving and perceptions, the meaning an individual attaches to their experiences (Combs, Avila, & Purkey, 1978). He suggests that skills, like those taught
in social problem-solving training may be of little help if individuals do not perceive themselves as capable of solving interpersonal problems. These individuals are seen as "unmotivated" with the attitude of, "Why try?".

According to Glenn, an important feature distinguishing perceptions from skills are the processes by which they develop. For the development of skills, experiences may be the better teacher. That is to say, the assumption can be made that the more the environment requires a particular skill to be performed, the more one becomes proficient at it. In the case of perception, experience may not be the better teacher, according to Glenn. One can have the same experience many times and still not perceive the significance of the experience nor the importance or implication of one's response to the experience. Glenn argues for an intervention that not only teaches skills, but addresses perceptions as well. The goals of such an intervention is not only the acquisition of skills, but more importantly, to help individuals make fundamental changes along the lines of developing or strengthening the perception that they are capable, for example, capable of solving interpersonal problems and conflicts. Stated somewhat differently, one goal of working with perceptions is to modify an aspect of the individuals self-schemata. Self-schemata is defined as, "cognitive generalization about the Self, derived from past experiences, that organize and
guide the processing of self-related information contained in the individuals social experiences" (Markus, 1977, p. 63).

A conceivable dimension of an individual's self-schemata is the extent to which the individual perceives himself/herself as an effective and capable problem solver. Heppner and Petersen (1982) and Heppner and Krauskopf (1987) have used the term problem solving appraisal, suggesting it as a psychological construct that mediates problem-solving behavior. Conceptually problem solving appraisal parallels the problem orientation phase of the problem-solving process (Nezu & Nezu, 1993):

This first problem-solving process reflects one's overall set when attempting to understand and react to problems in general. These orienting responses include a group of beliefs, assumptions, appraisals, values, and expectations concerning problems in general and one's ability to effectively solve them. (p. 256)

The problem-solving appraisal construct continues to be developed by a line of research by Heppner and his colleagues (Heppner, Hibell, Neal, Weinstein, & Rabinowitz, 1982; Heppner & Petersen, 1982; Heppner & Anderson, 1985; Baumgardner, Heppner, & Arkin, 1986; Heppner & Krauskopf, 1987; Heppner, Kampa, & Brunning, 1987; Heppner, Baumgardner, Larson, & Petty, 1988; Larson, Piersel, Imao, & Allen, 1990). Their initial work focused on differentiating "successful" problem solvers from "unsuccessful" problem solvers. Their analyses suggested that relative to
"unsuccessful" problem solvers, "successful" problem solvers perceived themselves as confident in their problem-solving abilities, they tended to approach as opposed to avoiding problem-solving activities and they perceived themselves as having personal control over their emotions and behavior while engaging in problem-solving activities.

Problem-solving appraisal, as a form of self-appraisal encompasses the perceptions, belief and "self-statements" the individual brings to the problem-solving process. They are, to a large extent, sets of cognitive generalizations the individual holds about herself/himself. It reasonable to assume that these generalizations are stable over time and are manifested across situations.

Heppner, Reeder and Larson (1983) have suggested that problem-solving skills training should incorporate strategies for modifying such cognitive generalizations as "self-statements" with the idea that removing debilitating obstacles will strengthen the effects of skill training.

... evidence about generalization and maintenance of problem-solving training is needed to adequately determine the external validity of training on the mediating and oftentimes well-ingrained cognitive content and processes. For instance, if ones self-concept and self-regulating mechanisms affect the problem solving process, brief problem solving skill training many not be sufficient for successful long-term self management. Likewise, an indecisive client, after receiving counseling in decision-making skills, may still feel uncomfortable in making decision until his or her irrational beliefs are altered. (p.543)
Although Heppner and his colleagues have not offered specific interventions to impact problem-solving appraisal, recommendations have made in the clinical literature for modifying the self-schemata. These recommendations are in the form of clinical guidelines and have been made by Goldfried and Robins (1983) and Winfrey and Goldfried (1986). These guidelines are as follows:

1) Encourage the client to try new behaviors
2) Help the client to discriminate between past and present functioning
3) Encourage the client to view change from a objective point of view and not a subjective view
4) Help the client retrieve past successful experiences
5) Help the client align expectations, anticipatory feelings, behavior, objective consequences and subsequent self-evaluations

The ultimate goal of these guidelines or strategies is to facilitate lasting change in the individual's beliefs about the type of person he/she is and the things the individual is capable of doing.

The ultimate objective of these strategies is to effect lasting change in a client's self schema, that is, the integrated body of beliefs about the sort of person he or she is, and the sorts of things he or she can do. (Goldfried & Robins, 1983, p. 57)

The proposed intervention in this study combines a problem-solving skills training model with the clinical guidelines for modifying the self-schemata. The result, in effect, is a "hybrid" that taps the phenomenological aspects of the individual (i.e. perceptions) and the competency
aspects (i.e. skills), both of which influence responses to situations.

Two broad categories of information determine responses to a situation. One is the subjective perception, which includes interpretation and organization of ideas about the situation, the feelings evoked, as well as perceived self-efficacy in that situation. The other is the person's actual competency and problem-solving approaches, which can be observed by other and by the self. There is a continuing interplay between these inner and outer levels of experience. (Teglasi, 1993, p. 58).

Purpose of the Research

The primary purpose of this research is to test the effects of a problem-solving intervention which incorporates strategies for modifying self-schemata on an outcome measure of problem-solving appraisal. A second purpose is to test whether the intervention brings about reduction in levels of aggressive behavior. Three (3) major hypotheses were tested around the question of whether the intervention helped the subjects develop or strengthen their perceptions of themselves as capable and effective problem solvers. Two (2) minor hypotheses were tested as to whether the intervention lead to decreases in aggressive behavior.

Research Questions

This study examined the following questions:

1) Do subjects who participate in a problem-solving intervention, obtain scores on a measure of problem-solving confidence significantly different from subjects who do not participate in the problem-solving intervention?

2) Do subjects who participated in a problem-solving intervention obtain scores on a measure of
approach-avoidance style significantly different from subjects who do not participate in the problem-solving intervention?

3) Do subjects who participate in a problem-solving intervention obtain scores on a measure of personal control significantly different from subjects who do not participate in the problem-solving intervention?

4) Do subjects who participate in a problem-solving intervention obtain scores on a measure of aggressive behavior as reported by teachers significantly different from subjects who do not participate in the problem-solving intervention?

5) Do subjects who participate in a problem-solving intervention obtain scores on a measure of aggressive behavior as reported by parents significantly different from subjects who do not participate in the problem-solving intervention.

Major Hypotheses

Ho-1: The treatment group's posttreatment mean score on the Problem Solving Confidence scale of the Problem Solving Inventory will not be significantly different from the control group's posttreatment mean score on the Problem Solving Confidence scale of the Problem Solving Inventory.

Ho-2: The treatment group's posttreatment mean score on the Approach-Avoidance Style scale of the Problem Solving Inventory will not be significantly different from the control group's posttreatment mean score on the Approach-Avoidance Style scale of the Problem Solving Inventory.

Ho-3: The treatment group's posttreatment mean score on the Personal Control scale of the Problem Solving Inventory will not be significantly different from the control group's posttreatment mean score on the Personal Control scale of the Problem Solving Inventory.

Minor Hypotheses

Ho-4: The treatment group's posttreatment mean score on the Conduct Disorder scale of the CPRS-93 will not be significantly different from the control group's
posttreatment mean score on the Conduct Disorder scale of the CPRS-93.

Ho-5: The treatment group's posttreatment mean score on the Conduct Disorder scale of the CTRS-39 will not be significantly different from the control group's posttreatment mean score on the Conduct Disorder scale of the CTRS-39.

Justification for the Research

First, the research will add new knowledge to an existing body of research. It appears, based on a review of the literature, there are no published studies which experimentally tested ways of impacting problem-solving appraisal developing or strengthening problem-solving confidence in aggressively prone children and adolescents.

Secondly, the research has treatment implications. Results may help to refocus current practices. For example, research results may suggest that focusing on self-perceptions as opposed to developing skills may yield greater behavior changes. Clearly, this and similar information could be of immense help to practitioners trying to change adolescent aggressive behavior.

Having a viable intervention that could be utilized on an outpatient basis preempts the utilization of more restrictive, costly and disruptive interventions, such as residential programs and hospitalizations (Kazdin, 1993). For example, it is estimated that it costs $40,000 per year to incarcerate a juvenile (Zigler, Taussig & Black, 1992).

Lastly, the results of this research has the potential to impact on related social issues of childhood/adolescent
aggression. The data on the long term effects of aggressive behavior of childhood and adolescence has shown that as adults, these individuals are likely to be violent (Olweus, 1979; Farrington, 1991) they are likely also to be convicted of crimes such as homicide, forcible rape, aggravated assault, burglary and arson (Eron, Huesmann, Dubow, Romanoff, & Yarmel, 1987; Huesmann, Eron, Lefkowitz, & Walder, 1984; Loeber & Dishion, 1983; Loeber & Stouthamer-Loeber, 1987; McCord, 1983; Roff & Wirt, 1984, 1985; Roff, 1986). In addition, as adults, aggressive prone children and adolescents tend to experience greater psychiatric problems and higher rates of psychiatric hospitalizations, higher rates of unemployment and underemployment, and they are generally undereducated (Kazdin, 1987). Whether directly or indirectly, the results of this research may help the aggressive prone child or adolescent avoid becoming a dysfunctional adult and thereby becoming contributing member of society and opposed to being a burden to society.

Definition of Terms

The following terms are defined for this study:

Aggression

Aggression is defined as the delivery of noxious stimuli by an individual to another, the stimuli being delivered with the purpose to harm the other individual (i.e. victim), with the expectation on the part of the
aggressor that the noxious stimuli will have their intended effect (Green, 1990).

**Approach-Avoidance Style**

The extent to which an individual, when confronted with a problem, either actively enters into problem solving activities or evades problem solving activities (Heppner, 1988).

**Generalization**

Generalization is defined as, "...the occurrence of relevant behavior under different, nontraining conditions without the scheduling of the same events in those condition as had been scheduled in the training condition." (Stokes & Baer, 1977, p. 350)

**Personal Control**

The extent to which an individual perceives that he/she has the ability to modulate his/her emotions and behaviors while engaging in problem solving activities (Heppner, 1988).

**Problem-Solving**

As defined by D'Zurilla and Goldfried (1971), problem-solving is:

... a behavioral process, whether overt or cognitive in nature, which (a) makes available a variety of potentially effective response alternatives for dealing with the problematic situation and (b) increases the probability of selecting the most effective from these various alternatives. (p. 108)
The process includes five (5) steps:

1) General orientation
2) Problem definition and formulation
3) Generating alternative solutions
4) Making a decision
5) Verification (evaluating the solution)

**Problem-Solving Appraisal**

A psychological construct describing an individual's perception of himself or herself as a problem solver. The construct is suggested to mediate problem-solving behavior and problem-solving outcome (Heppner & Petersen, 1982).

**Problem-Solving Confidence**

The degree of self-assurance an individual has about his/her ability to successfully resolve problems (Heppner, 1988).

**Self-Schemata**

Self-schemata is defined as, "... cognitive generalizations about the self, derived from past experiences, that organize and guide the processing of self-related information contained in the individual's social experience." (Markus, 1977, p. 64)

**Limitations of the Study**

The limitations of this study are:

1. The study was limited to white adolescents. At the time the study was conducted, there were no ethnic minorities as clients of the agency or as students in the special education
2. Of the 17 subjects in the study, four (4) were female.

3. All the subjects were drawn from a rural population.

4. The age range of the sample crossed generally accepted important developmental stages.

5. There was a one week break in the group schedule for the Christmas holiday which may have resulted in a dose of continuity.

In summary, social problem-solving skills training has been used as an intervention with aggressive children and adolescents for over twenty years. The available empirical evidence, however, suggests that the skills learned in training are not maintained over time and are not transferred beyond the training conditions. It was suggested that transfer and maintenance of learning could be enhanced if individuals acquired the perception that they are capable of solving interpersonal problems and conflicts. Problem-solving appraisal was suggested as a construct that could be used to describe confident problem solvers from individuals who do not perceive themselves as confident problem solvers. The literature indicated that problem-solving appraisal mediated problem-solving behavior and outcome. To help individuals develop the perception that they are capable of solving interpersonal problems, an intervention was developed. The intervention combined a problem-solving skills based program with a set of interventions that are purported to impact on the perceptions individuals have about their capabilities for
behavior change. Five (5) hypotheses were developed to test the efficacy of the intervention.
Chapter II

Literature Review

Thought affords the sole method of escape from purely impulsive or purely routine action. A being with capacity for thought is moved only by instincts and appetites, as these are called forth by outward conditions and by the inner state of the organism. (Dewey, 1910, p. 14)

The literature reviewed in this chapter cover five (5) topics. First, there is a historical review of social problem-solving skills training. An attempt was made to show how training programs tended to reflect major themes or lines of research of the day. Secondly, there is brief review and discussion of the strategies generally suggested for promoting training generalization. An important theme of the discussion is that individual differences on cognitive variables mediate training generalization. Cognitive mediation and self-schemata is the third topic discussed. The fourth topic to be covered is the problem-solving appraisal construct, one of the dependent variables in the study. A brief historical review of the development of the construct is presented along with the results of several studies supporting the construct. The last topic to be discussed is a facet of the intervention which was used to impact on problem-solving appraisal.

17
Historical Background

Pellegrini and Urbain (1985) point out that research into human problem solving has a long and respected history in psychology. Reviews by Davis (1966) and Duncan (1959) indicate that long standing psychological paradigms (e.g. behaviorism), as well as contemporary systems (e.g. information processing) have been used to explain and describe how human beings go about the business of solving problems.

For example, Dewey (1933) proposed a five (5) phase model of problem-solving, (1) suggestion, (2) intellectualization, (3) hypothesis formation, (4) reasoning, and (5) testing. Involved in the initial phase is recognizing that a problem situation exists and a conscious decision to resolve the problem. In phase two, the goal is to explore the problem in detail and define all possible aspects of the problem. The next phase moves toward developing hypotheses as to which courses of actions will bring about the desired end result(s). In the next phase, reasoning and logical is applied in order to determine the consequences of various courses of action. Finally, the planned courses of action are implemented and the results observed and a determination is made whether the results are the desired ones.

Gagne (1959, 1964), employed theories of probability, mathematical rules and classic decision making theory to
arrive at his model of problem-solving. Newell, Shaw, and Simon (1958) describe human problem-solving as programs which specify action under varying environmental circumstances. Miller, Galanter and Pribram (1960) proposed metaplanes that could be combined, changed, etc. to deal with an infinite variety of unanticipated situations.

The contributions of these individuals as well as others, (e.g., Anderson, 1980) have advanced psychology's understanding of human problem-solving. Their collective efforts have offered descriptive theories of human problem-solving and decision making (Martin & Hiebert, 1985). However, their work may have little to do with "real life" problem-solving. That is to say, the type of problem-solving that occurs which enables people to cope with the demands of having to live in a social environment with its inherent interpersonal conflicts.

Real-life personal problem-solving is defined... as a goal directed sequence of cognitive and affective operations as well as behavioral responses for the purpose of adapting to internal or external demands or challenges (Heppner & Krauskopf, 1987, p. 375).

The application of problem-solving strategies to "real-life" problems was seen most readily in the context of counseling and psychotherapy (e.g. Krumboltz, 1966; D'Zurilla & Goldfried, 1971, Urban & Ford, 1971). One of the earliest studies of the clinical application of social
problem-solving was by Chittenden (1942). Chittenden believed that children could be trained to behave less domineering and more cooperative by teaching them to analyze social situations and select their responses based on their analysis. Seventy-one (71) 3 to 6 year olds, were divided into two groups. Those in the experimental group attended individual training sessions (15 minutes daily for 11 days) in which doll play was employed to act out social problem situations. There were three objectives to the training sessions:

1) to teach the child to differentiate between situations in which a satisfactory agreement had been reached and situations in which there was not such agreement

2) to teach the child methods of working out disagreements in the context of play, such as taking turns, common use or cooperative use

3) to make the child aware of productive ways of approaching other children

At posttest, the children in the experimental group demonstrated significantly less domineering behavior and significantly more cooperative behavior. However, at one month follow up, only the changed domineering behaviors persisted.

One of the significant aspects of this study was its methodology which employed a control group, matching the groups on the variable age and follow up testing. These, of course, have come to be standard methodologies over the years.
Chittenden's work, although important historically and for its methodology, appears to have been rather uninspiring for that day. Little, if any interest was generated by the work as suggested by the conspicuous absences in the literature of similar research studies. In fact, it seems it took 20 years for a line of research to develop addressing issues of skill development within the context of social situations.

Verbal Mediation. A major line of research in the 1960's sought to test the efficacy of self-instruction as a means of self-control via verbal mediation. The subjects for much of this research were "hyperactive" or "impulsive" children and to a lesser degree aggressive children.

The use of verbal mediation as an intervention for developing self control has its roots in the research and theorizing of L.S. Vygotsky (e.g. 1978, 1988) and A.R. Luria (e.g. 1966, 1973). The basic thesis is that there is a functional relationship between language and behavior, with language being the principle means by which behavior is regulated and organized. Vygotsky (1978, p. 25-26) makes the following points:

1) A child's speech is as important as the role of action in attaining the goal. Children not only speak about what they are doing; their speech and action are part of one and the same complex psychological function, directed toward the solution of the problem at hand.

2) The more complex the action demanded by the situation and the less direct its solution, the greater the importance played by speech in the
operation as a whole. Sometimes speech becomes of such vital importance that, if not permitted to use it, young children cannot accomplish the given task.

From the neurophysiological perspective, Luria argues that speech (i.e. language) as auxiliary stimuli has the capacity to initiate (excite) and inhibit neurological activity, tying together cortical zones and thereby making it possible to organize and regulate behavior.

The chief distinguishing feature of the regulation of human conscious activity is that this regulation takes place with the close participation of speech. Whereas the relatively elementary forms of regulations of organic processes and even of the simplest forms of behavior can take place without the aid of speech, higher mental processes are formed and take place on the basis of speech activity, .... It is therefore natural to seek the programming, regulating and verifying action of the human brain primarily in those forms of conscious activity whose regulation takes place through the intimate participation of speech. (Luria, 1973, p. 93-94)

The Vygotsky-Luria paradigm as well as research in America by J. H. Flavell, A. Jensen and W. L. Klein (For Further Review See Kohlberg, Yaeger & Hjertholm, 1968) were quite influential, frequently cited in research papers on self instruction, self control and verbal mediation.

Palkes, Stewart and Kahana (1968) for example working with hyperactive children demonstrated improved performance on a standardized tasks (e.g. Porteus Maze Test) could be enhanced by teaching children self-directed verbal commands. The experimental group was taught self directed commands such as "I must listen to directions" and "I must look and think before I answer" which were to be repeated by each
child just prior to being presented with a task. Analysis of pretest and posttest data indicated significant improvements on task performance following training. One of their conclusions was, "The results lend support to Luria's theoretical position, which holds that the process of verbalization, appropriately directed, becomes a means of increasing the degree of behavior integration." (p. 825)

The importance of the Palkes et al. study as well as several others studies (e.g. Bem, 1967; Kohlberg et al., 1968; Lovaas, 1964; O'Leary, 1968) was that they supported the Vygotsky-Luria paradigm. More specifically, they demonstrated the validity of applying the paradigm outside the context of neuropathology (i.e. not presenting major neurological impairments or disorders). Moreover, this line of research continued into the next decade and as a paradigm is clearly evident in contemporary self-instruction, self-control and social problem-solving skills training such as Think Aloud (Camp & Bash, 1981) and The Prepare Curriculum (Goldstein, 1988).

The 1970's brought with it a flurry of research activities on problem-solving interventions. While much of the research advanced ideas from the preceding decade, several new themes and ideas were emerging. One important outcome of this flurry of research was that it helped legitimatize social problem-solving as a clinical
intervention for childhood aggressive and antisocial behavior.

The increased attention being paid to problem solving interventions may have been driven by two issues. The first was the rising crime rate in the 1960s and 1970s. The second was the dissatisfaction with traditional or commonly practiced models of interventions.

According to Strasburg (1984) juvenile arrests grew by nearly 300% between 1960 and 1975, more than two-times the adult rate. The greatest rates of increases occurred for crimes of violence, including robbery, up by 376%, aggravated assault by 249% and homicide by 211%. By 1975, 74,505 juveniles were arrested for crimes of violence, accounting for 23% of all arrests for violent crimes.

Hidden in the figures was the fact that school students and teachers were increasingly becoming the victims of the violence (Menacker, Weldon, & Hurwitz, 1990; Rubel, 1977). For example, Harootunian & Apter (1983) reported that in 1955, 15,000 assaults on teachers were reported nationally. In 1971, the number of reported assaults were 41,000, in 1975, 63,000 were reported and 110,000 in 1979.

What was a problem in the community and the schools, was fast becoming a problem for the mental health system. It has been estimated that of all child/adolescent clinical referrals, 33% to 75% are for aggressive or antisocial behavior (Bernal, Duryee, Pruett, & Burns, 1968; Gilbert,
The other issue driving the problem-solving training interest was the growing dissatisfaction with traditional intervention methods. Goldstein and Glick (1987) make a number of points about this issue. They point out that traditional methods of interventions, like psychodynamic, humanistic and behavior modification all share the assumption that within the client, in this case, the aggressing child, lies, yet unexpressed nonaggressive and prosocial behaviors. The goal of the therapy is to find ways by which these behaviors can be expressed. Thus, practitioners have worked toward interpreting unconscious material, attempted to provide a warm and empathic helping relationship or developed a contingency management plan in an effort to "bring out" prosocial behavior. The issue was fast becoming rehabilitation verses habilitation, with the former connoting efforts to reinstate or "bring out" that which was learned earlier. By contrast, habilitation conveys teaching that which was never learned (Goldstein & Glick, 1987).

As a somewhat anecdotical note, Lawrence Pervin (1984) relates the following experience by Walter Mischel:

When I began to read psychology Freud fascinated me most. As a student at City College (in New York ... in 1939 ...) psychoanalysis seemed to provide a comprehensive view of man. But my excitement fizzled when I tried to apply ideas as a social worker with "juvenile delinquents" in
New York's Lower East Side: somehow trying to give those youngsters "insight" didn't help either them or me. The concepts did not fit what I saw, and I went looking for more useful ones. (p. 405)

There is an array of valid points, themes, conclusion that can be gleaned from the research of the 1970's. This discussion, however, will be limited to three points, which are believed to be historically and theoretically relevant:

1) the continued work on verbal self-instruction with hyperactive/impulsive children

2) the emergence of Interpersonal Cognitive Problem-Solving

3) the Cognitive-Behavioral intervention paradigm

Self-Verbalization and Hyperactivity. The widely cited paper by Meichenbaum and Goodman (1971) reported the results of two studies in which self-verbalization was demonstrated to have significant effects on nonverbal behavior. Basing their research on the Vygotsky-Luria paradigm as well as the work of Kagan (1966), Meichenbaum and Goodman trained hyperactive/impulsive elementary school children to use self verbalization as a means of guiding their behavior. In the one study, a five step process was used in the treatment:

1) The examiner performed the task talking out loud with the child observing.

2) The child performed the same task with the examiner this time instructing the child out loud.

3) The child performs the same task instructing him/her self out loud.

4) The child performs the task again, this time whispering the instructions.
5) The child performs the task one last time using covert self instructions (no lip movements).

Compared with the control group, the treatment group demonstrated improved performance on the Matching Familiar Figure Test (MFFT), the Picture Arrangement and Coding subtests from the Wechsler Intelligence Scale for Children and the Porteus Maze Test. These gains were maintained up to three weeks following the intervention. However, there were no significant changes in the classroom behavior of the children as assessed by classroom observers and teachers' ratings.

In another frequently cited paper, Douglas, Parry, Marton and Garson (1976) presented a self-guidance intervention designed to help hyperactive children be more effective and less impulsive when solving cognitive and academic problems as well as when dealing with social situations. The program, built on the Meichenbaum and Goodman study, employed a fading method in which the child moved from being an observer and listener to engaging in self instruction initially by way of overt verbalization through covert verbalization. The study also included both teachers and parents in the intervention becoming familiar with the training program and encouraged to implement the training in their homes and schools.

Douglas et al. expanded the number of dependent measures to include, the Matching Familiar Figures Test, the Porteus Maze Test, as cognitive measures, the Story
Completion Test as a measure of reaction to frustration, the Bender Visual-Motor Gestalt Test, the Detroit Tests of Learning Aptitude for short-term memory, Durrell Analysis of Reading difficulty and the Wide Range Achievement Tests as measures of academic achievements and The Conners Parent/Teacher Rating Scale.

The analysis of the pretest and posttest data as well as at the three month follow indicated that relative to the control group, the treatment group achieved significant improvement on all measures with the exception of the Porteus Maze Test. However, as in the case of Meichenbaum and Goodman, the Douglas et al. study gave no evidence that treatment effects generalized to classroom behavior.

Self-Verbalization and Aggressive Behavior. The Meichenbaum and Goodman studies as well as the Douglas et al. study and others (e.g. Bornstein & Quevillon, 1976; Kendall & Finch, 1976; Kendall & Finch, 1978) all focused on hyperactivity and impulsive behavior relative to cognitive performance. As demonstrated by the apparent poor generalization to social behavior (e.g. classroom behavior) poor performance on cognitive tasks may be only one deficit facing the hyperactive/impulsive child. A number of studies seem to bear this point out.

Using Kagan's (1966) cognitive styles construct, Reflection-Impulsivity, Montgomery and Finch (1975) demonstrated that impulsive children tend to external
conflicts. That is to say, impulsive children do not inhibit responding to or acting out conflictual situations in the social environment. Moreover, they seem to have little concern for the consequences of their behavior as well.

Finch and Nelson (1976) again, using the Kagan construct, reported data suggesting that impulsive children experience difficulties in their social environments. Using parents' rating of their children's behavior it was reported that compared with reflective children, impulsive children more frequently:

1) talked of others blaming them unfairly
2) threatened to injury self
3) would hit, spit, and throw objects at other children
4) were excessively rough in play
5) bullied other children

The differences between the two groups on these behaviors were statistically significant.

Correlational data reported by Glenwick (1976) not surprisingly indicated a positive relationship between impulsivity and being perceived by others as maladjusted. In the sample, teachers tended to see impulsive children relative to reflective children as having more behavior and learning problems. In relation to their peers, impulsive children tended to be unpopular when compared with their reflective counterparts, suggesting perhaps that the lack of
patience of impulsive children are carried into interpersonal situations.

With reference to the sample of studies just presented, two points can be made. First, hyperactive/impulsive children do experience difficulties in their social environments. Secondly, from a historical perspective, it can be suggested that this line of research may have facilitated a shift in focus with more attention being directed toward the social/interpersonal implications of self-instruction and problem-solving skill training, especially aggressive behavior.

A frequently cited study dealing with aggressive behavior is that by Camp, Blom, Herbert, and van Doorninck (1977). The Camp et al. study was conducted on aggressive boys aged 6 to 8 years old and was modeled on the Meichenbaum and Goodman study. The training procedure used adult modeling and verbalization followed by the child being encouraged to verbalize his own plans. The intervention moved from overt verbalization to covert verbalization of the child's plans. The training was conducted over a six week period with daily 30 minute sessions. Like the Meichenbaum and Goodman study, the treatment group in the Camp et al. study the treatment group relative to the control group showed significant improvement on a number of cognitive tasks. In addition, there was evidence that some measure of generalization took place, with the children
evidencing improved classroom behavior with teachers reporting increases in prosocial behavior.

Snyder and White (1977) using a sample of 15 behaviorally disturbed, institutionalized adolescents generated data supporting the use of self-instructional training. The subjects, nine males and six females were selected from the center's population because of their lack of progress in the program and minimal behavior change in response to the center's behavior modification program. The subjects were randomly placed into one of three groups, self-instructional training, alternative treatment or control.

The treatment sessions were six 45 minute meetings over a four week period. There were three phases to the treatment. In the first phase, the subjects were to identify problematic situations, their verbal responses to the situations, their subsequent behavior and the consequences of their behavior (See Example one). In phase two, the subjects are taught to replace the counterproductive and self-defeating self-verbalizations with more adaptive self-verbalizations (including statements of contingencies, the demands of the tasks and self-reinforcement for success) (See Example two). The subjects were to rehearse the verbalization, modifying them to include their own jargon. In the fail final phase, the
subjects were to use the technique in their day-to-day living in the institution.

Relative to the other two groups, the treatment group showed improvements on three measures at a six week follow up. The treatment group improved their class attendance, engaged in fewer impulsive behaviors and fewer failures of carrying out social and self care responsibilities.

Example One

<table>
<thead>
<tr>
<th>Situation</th>
<th>Verbalization</th>
<th>Behavior</th>
<th>Consequence</th>
</tr>
</thead>
<tbody>
<tr>
<td>A cottage counsellor says, &quot;Time to get up.&quot;</td>
<td>&quot;The hell with that, this feels good.&quot;</td>
<td>Staying in bed.</td>
<td>Lose token points for failure to get out of bed.</td>
</tr>
</tbody>
</table>

Example Two

<table>
<thead>
<tr>
<th>Situation</th>
<th>Verbalization</th>
<th>Behavior</th>
<th>Consequence</th>
</tr>
</thead>
<tbody>
<tr>
<td>A cottage counsellor says, &quot;Time to get up.&quot;</td>
<td>&quot;Already, damn. It feels good to stay in bed, but if I get up I'll get the points I need for cigarettes OK, just open my eyes, sit up. Good I made it.&quot;</td>
<td>Get out of bed.</td>
<td>Get token economy points, avoid hassle with counselor.</td>
</tr>
</tbody>
</table>

Source: Snyder & White (1977, p. 230)

Social Problem-Solving Skill Training. An interesting observation about the Snyder and White study is that the training procedure approximates the characteristics of problem-solving skill training models in general. According to Kazdin (1987), problem-solving skill training models
designed for treating aggressive behavior in children generally share five characteristics.

1) The emphasis is on how the child approaches situations with the primary focus being on the thought processes rather than on outcome per se.

2) The child is taught step-by-step using self verbalization (self instruction) to focus their attention on the elements of the problem or task and ways that may lead to an effective solution.

3) The treatment employs structured tasks (e.g. games) with increasing application to real life situations.

4) The therapist's role is active, using modeling, with self verbalization, providing cues and prompts, delivering feedback and providing encouragement.

5) The treatment combines several procedures such as modeling, rehearsal, role play, operant conditionings.

A very influential line of research since the mid-1970's was carried out by George Spivack and Associates, (Spivack & Shure, 1974; Spivack, Platt, & Shure, 1976; Shure & Spivack, 1978) at the Hahnemann Medical College.

The approach is based on the conception that if individuals can be helped to develop a cognitive problem-solving style for real-life problems and to generate their own ways of solving the typical interpersonal problems that arise during their day, they will be able to cope better than before and will manifest this improvement in changes in overt behavioral adjustment. (Spivack & Shure, 1974, p. X)

Their intervention program, eventually called Interpersonal Cognitive Problem-Solving was based on a number of years of research. The research identified a number of skill deficits in adult, child and adolescent psychiatric patients and their relationship to social
adjustment and coping in general (See Spivack & Shure, 1974).

Based on their research findings, Spivack and Associates initially identified six target skills believed critical for social adjustment and coping.

**Means-Ends Thinking** Means-Ends thinking refers to the ability to engage in careful step-by-step planning in order to reach an identified goal. It requires forethought to anticipate impediments to the goal and planning alternative courses of action for dealing with potential obstacles. It also involved an awareness that not all goals are reached immediately.

**Alternative Solution Thinking** This type of thinking refers to the ability to generate different solutions that have the potential for solving the problem. A good indicator of this type of thinking is the sheer number of solutions that an individual can generate.

**Consequential Thinking** The familiar "pro-con" approach to decision making is involved in this type of thinking. Specifically, consequential thinking concerns the ability to answer the question, "How will my decision affect me, others and what will be the reaction to my behavior?" In the context of ICPS programming, consequential thinking needs to provide answers to: What might happen to me?, How will this make me feel?, What will happen in the short run?, What will happen in the long run?
Causal Thinking  Causal thinking refers to the ability to understand and predict cause-and-effect. It is the ability to understand the relationships between events and "why" one particular event (e.g. a behavior) is followed by another event (e.g. a consequence).

Interpersonal Sensitivity  Broadly speaking, interpersonal sensitivity concerns an individual's awareness that a variety of problems arise in human interactions.

Perspective Taking  The thrust of perspective taking is characterized by the extent to which an individual recognizes and can integrate the idea that different people may have different motives and perspectives and as a consequence, may react differently in a given situation.

ICPS training tends to be composed of a sequential series of scripted games and group activities designed to encourage the emergence of problem-solving thought. Interpersonal problems introduced by the leader or group members serve as bases of discussion, focusing on, for example, generating alternative solutions, consideration of consequences and means-ends thinking. The training can be quite lengthy, lasting upwards to 56 sessions.

Although ICPS training has been used with young children, as young as four years old, adolescents and adults, the bulk of the research has been focused on young and middle childhood children (Little & Kendall, 1979). Because of the length of the training and as well as its age
focus, the strength of ICPS training may be in the area of prevention.

In the final analysis, the basic goal of ICPS skill training is to teach people how to think about interpersonal problems. With the acquisition of interpersonal skills, it is believed that the individual, in this case a child, will experience success in the interpersonal domain resulting in enhanced self-esteem, self-efficacy and social adjustment. The outcome data, however, is mixed. In a major review by Pellegrini and Urbain (1985), the conclusion is,

While ICPS training is sensible and appealing as a social skill training approach, outcome data indicate that its successful application is a matter of considerable complexity. A program's content and mode of presentation may differentially affect its outcome depending upon the age and sociodemographic attributes of target population. (p. 38)

Taken as a whole, however, ICPS training has had beneficial effects with changing some social behaviors, including decreasing impulsive and aggressive behavior and increasing cooperative behaviors. In addition, there is some evidence that behavioral changes persist over time (See Hughes, 1988). However, there appears to be no direct support for suggesting that ICPS training impacts on existing clinical problems like depression or personality variables such as locus of control (Pellegrini & Urbain, 1985).

Cognitive-Behavioral Paradigm. By the mid 1970's, social problem-solving training models like ICPS and self-
verbalization training (self-instruction) were coming under the general rubric of cognitive-behavioral interventions (Craighead, 1982; Meichenbaum, 1977). This fact is neither incidental nor is it trivial. The importance of this is that it implies that social problem-solving models share the characteristics of the cognitive-behavioral paradigm. These characteristics are embodied in the fundamental premises of the cognitive-behavioral paradigm as outlined for example by Kendall and Bemis, (1983, p. 565-566)

1. The human organism responds primarily to cognitive representations of its environments rather than to these environments per se.

2. Most human learning is cognitively mediated.

3. Thoughts, feelings, and behaviors are causally interrelated.

4. Attitudes, expectancies, attribution, [beliefs] and other cognitive activities are central to producing, predicting and understanding psychopathological behavior and the effects of therapeutic interventions.

5. Cognitive processes can be cast into testable formulations that are easily integrated with behavioral paradigms, to and it is possible and desirable to combine cognitive treatment strategies with an active techniques and behavioral contingency management.

6. The task of the cognitive-behavioral therapist is to act as a diagnostician, educator, and technical consultant who assesses maladaptive cognitive processes and works with the client to design learning experiences that may remediate these dysfunctional cognitions and the behavioral and affective patterns with which they correlate.

Of the points outlined by Kendall and Bemis, of particular interest in relation to this discussion are the
contributions of attitudes, expectancies, beliefs and attributions make to behavior. The most obvious examples of interventions solidly based on this premise are the works of Ellis (e.g. Ellis & Harper, 1977) and Beck (1976) in which the focus of attention is on changing beliefs and restructuring cognitive processes and content.

Tisdelle & St. Lawrence (1986) in their review of the social problem-solving literature however make the following observation.

To date, problem-solving interventions tend to ignore all other potential variables and focus exclusively on the second stage, the learning of cognitive "rules" for more effective problem-solving. However, problem-solving knowledge by itself does not fully account for an individual's observed behavior and cannot, at this time, be considered the primary mediating factor influencing performance. (p. 351)

One factor that may be responsible for directing attention to mediating variables, such as values or beliefs, was the emergence of social information processing models in the cognitive-behavioral literature.

Social Information Processing. Historically, information processing research has resided in the domain of cognitive psychology (e.g. Hunt, 1971; Miller, Galanter & Pribram, 1960; Minsky, 1975; Neisser, 1967; Newell, Shaw & Simon, 1958). Setting the stage for the application of information processing models to counseling and social problem-solving intervention was the growing person-environment interaction movement of the 1970's as conceptualized for example by Bandura's (1977, 1982) social learning theory and Mischel's
Applying information processing frameworks to the problem of aggressive behavior in child seems to have been further helped along with the knowledge gained that differences between aggressive and nonaggressive children are more complex than initially thought. For example, one of the fundamental thesis of the work by Spavick and associates is that the more solutions a child can generate the more likely the child will respond to interpersonal problems in prosocial ways. Krasnor and Rubin (1981), however, point out that the ability to generate many solutions to problems is only marginally related to prosocial outcomes.

Some have argued for a social information processing theory to explain the complexity of childhood aggressive behavior (Dodge, 1986; Dodge & Crick, 1990; Rubin & Krasnor, 1986; Rubin, Bream & Rose-Krasnor 1991).

This theory is based on an understanding of how specific aggressive behavioral responses come about in social interactions. This theory relies heavily on an understanding of how individuals perceive cues, make attributions and inferences about those cues, generate solutions to interpersonal cues and problems, and make behavioral decisions about how to respond to those problems (including decisions to aggress). (Dodge & Crick, 1990, p. 9-10)

Based on a number of years of research, Dodge (1986) proposes a five step model of social information processing to help explain aggressive behavior in children.
In Step One of the model, the child encodes social cues from the environment. The tasks are to attend to the social environment, learn to deal with large amounts of information from the environment by chunking or categorizing. All of this is to occur in a very brief period of time and with debilitating biases. Weaknesses in these skills have been referred to as "cue-utilization deficiency" (Milich & Dodge, 1984, p. 472).

In a study by Dodge and Newman (1981), it was found that relative to nonaggressive boys, aggressive boys collected fewer pieces of information, on the order of 30% fewer, prior to making an attribution about a peer's intention. Gouz (1987) demonstrated that relative to nonaggressive children, aggressive children tended to focus more on aggressive social cues.

In Step Two of the model, the process is that of integrating the social cues with memory of past experiences and coming to a meaningful understanding of the cues. The major concerning this step is "hostile attribution bias" (Milich & Dodge, 1984, p. 472). A number of studies have demonstrated that compared with nonaggressive children, aggressive children tend to attribute hostile intentions to several types of social interactions.

Dodge (1980) demonstrated that relative to non-aggressive boys, aggressive boys were 50% more likely to attribute hostile intent rather than benign intent to a
hypothetical provocation. Similar results were reported for girls (Dodge & Tomlin, 1983 in Dodge, 1986). In addition, studies by Dodge, Murphy and Buschsbaum (1984) and Dodge, Pettit, McClasky and Brown (1986) found that relative to nonaggressive children, aggressive children were more likely to attribute hostile intent in ambiguous and accidental provocations.

Step Three of the model is a response search. The task at this stem is to engage in a process of generating a behavioral response.

In Step Four, a behavioral response is chosen. The problem for the child is to weigh factors, taking into account the environmental context and social and interpersonal consequences of the behavioral response as well as evaluating whether he or she has the capabilities necessary for enacting the response.

The Fifth Step is the enacting of the chosen response. The task for the child is to initiate verbal and motoric behavior. In addition, the child needs to monitor the effects of the behavior not only in terms of achieving the goal, the solution of the problem, but the affects of the behavior on others in the social environment.

Tying together Steps Three, Four and Five is that of "response decision bias" (Milich & Dodge, 1984, p. 472). A number of studies have demonstrated that differences do exist between nonaggressive and aggressive children in terms
of their responses to hypothetical social problems. Dodge (1986) Richard and Dodge (1982) found that relative to nonaggressive children, aggressive children tend to generate more hostile and ineffective solutions to hypothetical social problems. Comparing hyperactive and aggressive (H/A) children with normal children, Milich and Dodge (1984) reported the H/A group was 60% more likely to respond to aggressively to a peer in a hypothetical situation in which the peer was instigating.

Supporting much of the work of Dodge and associates are data by Slaby and Guerra (1988) and Guerra and Slaby (1989). Their research identified the following as significant correlate of adolescent aggression.

1) defining social problems based on the perception of hostility
2) establishing goals consistent with the perception of hostility
3) seeks few facts in social interactions
4) develops few alternative solutions
5) generate few consequences for an aggressive solution
6) tendency to prioritize in favor of ineffective solutions.

Relevant to the work of Dodge, Rose-Krasnor (1991) offers a model to explain why adequately social cognitions sometimes fail to translate into adequate social actions. In other words, why plans of actions (e.g. prosocial behavior) which emerged from a problem-solving process fails
to emerge in the "real world" (p. 383) as initially conceptualized, emerging instead as an antisocial response. As noted by Rose-Krasnor one can readily observe and report incidents in which a child clearly had knowledge about nonaggressive strategies and the consequences of behaving aggressively, yet behaved aggressively in response to a social problem.

Rose-Krasnor suggests that planned actions pass through a series of filters before emerging in the real world. She suggests that behavioral responses (i.e. plans) can be blocked or distorted as a result of passing through these filters. These filters according to Rose-Krasnor may be external in nature, perhaps environmental constraints of some kind. For example, a plan of reporting aggressive behavior by a peer to a teacher in order to avoid fighting in school may be blocked if the child is rebuffed by the teacher.

In addition to external filters, Rose-Krasnor also suggests that filters may be internal in nature, such as skill deficiencies. While she made no mention of attributory variables, it is not at all unreasonable to include such variables as beliefs, attitudes, expectancies, or values, all capable of blocking or distorting behavioral responses or plans.

At this juncture, two points need to be made. First, the social information processing framework of the 1980's
conceptualized children as processors of information from their social environments. This was a clear departure from the "radical behaviorism" position that tended to drive the earlier problem-solving models (e.g. D'Zurilla & Goldfried, 1971). The research demonstrated, for example, that aggressive children encoded and attended to different social stimuli than their nonaggressive counterparts.

Secondly, the social information processing framework recognized that children's prior knowledge and social historical experiences significantly impact on their interpretations of social stimuli. For example, the research demonstrated that compared with nonaggressive children, aggressive children tended more often to interpret and attribute aggressive or hostile intentions to ambiguous events (stimuli).

The implications of these points is that what the child brings to social interactions is important in terms of mediating the relationship between social situations and the child's subsequent response to social stimuli. Thus cognitions in the forms of beliefs, attitudes, values, perceptions etc. take on greater importance with regard to understanding and predicting children's behaviors in interpersonal interactions.

Generalization Issues

The term "generalization" has been used to apply to a number of phenomena including "response maintenance", 
"transfer of training", or "transfer of learning" (Kazdin, 1980). Response maintenance (resistance to extinction) refers to the extent which changes in behavior are extended over time. Transfer of training refers to the extent to which changes in behavior extend across situations and settings.

Response maintenance and transfer of training are, perhaps, most often thought of as areas for investigation in experimental psychology. For example, a pigeon learns to discriminate between the presence and absence of a bright yellow light, pecking at the light, but continues to peck at a different color light even though it was not reinforced for the new color. The conclusion is that the pigeon generalized from the yellow light to the new color light (Mazur, 1986).

Historically, it was the behaviorist who was most explicitly concerned with matters like response maintenance and transfer of training. For the behavior therapist, strategies for promoting transfer of learning and response maintenance are integral components of the intervention and without them there would be no intervention. The problem of promoting transfer of learning and response maintenance, however, should be of concern to every practitioner regardless of his/her theoretical orientation. One hallmark of a successful counseling intervention is whether the
behaviors acquired as a result of the counseling experience are carry over to other conditions.

A final goal in most counseling interventions is for some transfer of training to occur. Most counseling objectives will framed so that they include transfer of training from the counseling setting to some real-life situation in which the client is involved. (Martin & Hiebert, 1985, p. 220)

Although transfer of training and response maintenance are german to all therapeutic interventions, the strategies used to enhance them are derived from the behavioral literature. Kazdin (1980, pp. 283-306) outlines several of these strategies.

1) **Bringing behavior under control of natural contingencies.** The strategy involves "trapping" the targeted behavior into a system of reinforcers that are available in the environment (i.e. natural consequences).

2) **Program "natural occurring" reinforcers.** Programming "natural occurring" reinforcers is an extension of the previous strategy. The distinguishing point is that latter of the two specifically programs into the intervention events and resources in the client's natural environment and may substitute for original reinforcers following the development of the targeted behavior.

3) **Fading the contingencies.** Fading the contingencies refers to the gradual withdrawal of the reinforcers following a period of time in which the targeted behavior has been consistently performed.

4) **Expanding stimulus control.** Because behaviors often become associated with a narrow range of cues (i.e. stimuli), it is necessary to expand the range of the stimuli for the targeted behaviors.
For example, having adolescents attend to anger provoking stimuli in the home as well as in the school.

5) **Schedules of reinforcement.**
Research has consistently shown that intermittent reinforcement tends to decrease rates of extinction. Intermittent reinforcement also referred to as "thinning" is the strategy whereby the targeted behavior is not reinforced each time it is performed, but rather reinforced on some other schedule such as every third time it is performed.

6) **Delay of reinforcement.**
Similar to intermittent reinforcement, delay of reinforcement refers to reinforcement of a targeted behavior within sometime period following the performance of the targeted behavior. In other words, the behavior is not immediately reinforced.

7) **Peer facilitators.**
The idea behind peer facilitators for peers such as siblings, classmates, inmates etc., to administer the contingencies.

8) **Self-control procedures.**
Self-control procedures refers to a number of behaviors individuals are taught to promote self-control. The idea is that if individual are taught of evaluate their behavior, set criteria for reinforcement and determine the quantity of reinforcement, there should be less reliance on external sources for cues, reinforcements etc..

As can be seen, the strategies for promoting response maintenance and transfer of learning are clearly derived from the behavioral literature. Therefore, it is of no surprise that there is no mention of "cognitive-affect" concepts for example in any of the above strategies. The influence of these strategies is quite notable within the social problem-solving literature as well. Critiques of social problem-solving skills training have by-and-large, not made mention of concepts outside of the behavioral
literature. For example, a frequent criticism of skill training programs, for example, is that the subjects may need long periods of practice before the skills become integrated into the individual's behavioral repertoire (e.g. Amish, Gesten, Smith, Clark, & Stark, 1988).

The conspicuous absence for example of "cognitive-affect" concepts or constructs suggest a restricted view and not universally supported. For example, Kirschenbaum and Tomarken (1982) tackle the maintenance and transfer problem pointing out that generalization is a function of the interaction of several elements:

\[ p(\text{Generalization}) = f(\text{Stimulus} \times \text{Organism} \times \text{Response} \times \text{Consequence}) \]

As previously suggested, the stimulus, response and consequence elements have long been noted as having promoted maintenance and transfer under various conditions. It is only recently, however that "organismic" variables have become targeted, "In recent years, large numbers of behaviorally oriented psychologists have begun focusing on the role of organismic variables, including self-generating private events, as mediators of behavior change." (Kirschenbaum & Tomarken, 1982, p. 124). Karoly (1980) for example, has identify 67 concepts that may be relevant to maintenance and transfer. Included among the concepts are: self-perception, attitudinal factors, performance attribution, persistence, commitment. The idea that as many
as 67 concepts may be relevant to transfer and maintenance illustrates the extent to which individual differences of all sorts can mediate behavior performance.

Cognitive Mediation and Self-Schemata

Cognitive mediation of behavior performance is as a broad and encompassing concept that cut across virtually all fields of psychological research. Within the clinical literature, Beck's Cognitive Therapy (Beck, 1967), Ellis' Rational-Emotive Therapy (Ellis, 1962) and Meichenbaum' Cognitive Behavior Modification (Meichenbaum, 1977) for example, are based on the proposition that cognitions mediate behavior performance. Terms such as automatic thoughts, cognitive distortions and irrational beliefs have been used to describe cognitive activities that mediate behavior performance. The automatic thoughts, cognitive distortions and irrational belief all have been associated with maladaptive behavior responses to environmental stimuli.

Automatic thoughts, cognitive distortions and irrational beliefs, though all cognitive in nature, represent different aspects of cognitions or the cognitive domain. Turk and Speers (1983), draw a distinction between cognitive processes and cognitive content or cognitive schemata. They suggest that, "It is through cognitive processes that individuals operate on information, select action plans and execute the action planes in sequential
response patterns."; cognitive schemata, however, refers to, "... hypothetical constructs that include all the individual" knowledge at any given moment about himself or herself and his or her world." (p. 5).

A subtype of cognitive schemata is the self-schemata. Self-schemata are conceptualized as "... cognitive generalizations about the self, derived from past experiences, that organize and guide the processing of self-related information contained in the individual's social experience." (Markus, 1977, p. 64)

The notion of schemata has been used in the clinical literature for some time. Beck (1967) for example, used the concept to explain the organization of the thought processes and their stability and consistency in depressed individuals.

A schema is a cognitive structure for screening, coding and evaluating the stimuli that impinge on the organism... On the basis of the matrix of schemata, the individual is able to orient himself in relation to time and space and to categorize and interpret experiences in a meaningful way. (p. 287)

Segal (1988) also makes use of the concept, "... organized elements of past reactions and experiences that form a relatively cohesive and persistent body of knowledge capable of guiding subsequent perceptions and appraisal" (p. 147). Young (1990) extensively employs concept of schemata in his theorizing about personality disorders and the application of cognitive therapy to treatment personality disorders.
The attractiveness of the schemata concept and self-schemata in particular is that it drives what the individual attends to in the social environment, what is learned, remembered and infer in any social situation. This in turn provides the observer with some sense or understanding of why, for example, depressed individuals continue to be depressed or "dependent" people continue to be "dependent".

Self-schemata are constructed from information processed by the individual in the past and influence both input and output of information related to the self. They represent the way the self has been differentiated and articulated in memory. Once established, these schemata function as selective mechanisms which determine whether information is attended to, how it is structured, how much importance is attached to it and what happens subsequently. As individuals accumulate repeated experiences, of a certain type, their self-schemata become increasingly resistant to inconsistent or contradictory information, although they are never totally invulnerable to it. (Markus, 1977, p. 64)

The mediating influence of the self-schemata on behavior performance is limitless. One area of functioning that may be influenced by the self-schemata is social problem solving performance. The extent to which an individual perceives himself/herself as an effective and capable problem solver is a cognitive generalization about the self.

Problem-Solving Appraisal

Heppner and Petersen (1982) have used the term problem-solving appraisal to describe a psychological
construct that is purported to mediate problem-solving behavior. It is conceptualized as a complex individual difference that accounts for variations in problem-solving behavior and outcome. Heppner and Krauskopf (1987) see problem-solving appraisal as sharing communalities with other individual differences such as self-esteem or self-efficacy (Bandura, 1977, 1982) in that for example they all impact on what is attended to in the social environment, the meaning that is attached to experiences and how the information is used to negotiate the demands of the social environment.

The problem-solving appraisal construct was empirically evaluated via a series of studies beginning in the early 1980's by Heppner and his colleagues. In the initial study using college students, Heppner and Petersen (1982) attempted to identify the dimensions underlying "real life" personal problem-solving behaviors. First, the problem-Solving Inventory was factor analyzed; three (3) factors were extracted. The factors were defined as the following:

1) Problem-Solving Confidence: the extent to which the individual perceives himself/herself as capable of solving personal problems.

2) Approach-Avoidance: the willingness to engage in problem-solving activities as opposed to avoiding problem-solving activities.

3) Personal Control: the extent to which the individual perceives himself/herself as having control over his/her emotions and behavior while engaging in problem-solving activities.
In addition, the research showed that PSI scores were related to self reports of the subjects rating themselves as either "good" or "poor" problem solvers and the degree to which they were satisfied with their problem-solving skills. The PSI was not related to measures of problem-solving skills per se, but group differences on PSI scores were detected following problem-solving skills training. Lastly, the PSI is only moderately associated with personality variables such as those measured by the Myers-Briggs Type Indicator and Rotter Internal-External Locus of control.

In a descriptive study using the PSI, Heppner et al. (1982) provided evidence differentiating "perceived confident problem solvers" from "perceived nonconfident problem solvers." Relative to nonconfident problem solvers, confident problem solvers were characterized as:

1) rating their abilities as more important in solving problems and placing less emphasis on chance or luck
2) rating themselves as less impulsive
3) more likely to engage in problem-solving activities
4) more systematic in their decision making
5) having a clearer understanding of the problem
6) more persistent

Heppner et al. (1983) investigated the relationship between the PSI and self-concept, irrational beliefs and dysfunctional thoughts. The data indicated that confident problem solvers (low scores on the PSI) relative to
nonconfident problem solvers (high scores on the PSI) had more positive self-concepts, they were less self-critical and more consistent in their perceptions of different aspects of the Self. They also endorsed fewer irrational beliefs and fewer dysfunctional or negative thoughts. Lastly, they reported enjoying thinking and understanding one's experiential world.

In a study by Heppner and Anderson (1985) using the PSI and the Minnesota Multiphasic Personality Inventory (MMPI), it was demonstrated that relative to nonconfident problem solvers, confident problem solvers tended to score lower on measures of psychopathology. For example, confident problem solvers (relative to nonconfident problem solvers) scored significantly lower on the Depression (D), Psychasthenia (Pt) and schizophrenia (Sc) scales. These findings suggest that relative to nonconfident problem solvers confident problem solvers are more satisfied with their lives, possess a more positive self-concept, are less anxious and have better coping skills.

Similar results were also reported by Heppner et al. (1987) using the PSI and the Cornell Medical Index and SCL-90. That is, relative to nonconfident problem solvers, confident problem solvers are less psychological distressed, reporting fewer clinical symptoms related to issues of interpersonal sensitivity, depression, obsessive compulsiveness, anxiety and psychotism.
Lawson et al. (1990), using a multiple regression model, demonstrated that PSI scores can be predicted by positive coping strategies, which include problem-focused behavior, cognitive reappraisal and the use of social resources. The data suggest that relative to nonconfident problem solvers, confident problem solvers are more likely to take action to solve problems, such as reconstructing the problem or engaging in increased social interactions.

**Modifying Problem-Solving Appraisal**

The extent to which nonconfident problem solvers can become confident problem solvers is largely an open question. Although Heppner and his colleagues (e.g. Heppner et al., 1983) have suggested that social problem-solving skills training should incorporate strategies for modifying problem-solving appraisal, they have not offered specific recommendations to impact on problem-solving appraisal. If, however, problem-solving appraisal is accepted as a dimension or aspect of the self-schemata, the application of the clinical guidelines for modifying self-schemata may be appropriate. The specific guidelines are discussed by Goldfried and Robins (1982; 1983) and Winfrey & Goldfried (1986).

The basic premise of the guidelines is that experiences need to processed if there is to be any measure of growth or modification of self-appraisal. Thus, Goldfried and Robins (1982) refer to the guidelines as "guidelines for processing
successful experiences" (p. 366). It is their observation, as is every clinicians' that there are clients who encounter successful experiences in particular areas of their lives but fail to benefit from them because of their tendency to overlook, ignore or distort the experience.

For clinicians this bias would suggest that when provided with potentially therapeutic information, clients may "get it" but not "use it" if the information is inconsistent with their self-schemata. Such roadblocks to treatment as reactance, resistance, and noncompliance can be seen as the tendency that clients have to preserve their self-consistency, however dysfunctional their thoughts, feelings and behaviors may be. (Winfrey & Goldfried, 1986, p. 251)

The clinical task is therefore one of encouraging clients to process thoughts and feelings that are associated with the performance of novel behaviors so as to build a new self-consistency (Goldfried & Robins, 1983).

The clinical guidelines for modifying the self-schemata (for processing success experiences) are discussed at length in Goldfried and Robins (1982, 1983) and Winfrey and Goldfried (1986). The guidelines are as follows:

1) Encouraging New Behavior: Having the individual attempt new behaviors is one way in which the client can be provided with feedback about his/her abilities. How the client experiences the new behaviors may be largely immaterial. That is to say, in-session practice of a new behavior may be as beneficial as having the client attempt it on his/her own.

2) Discrimination Between Past and Present: Having the client perform new behaviors may be of little significance if she/he does not understand the significance of the new behaviors. Helping the individual discriminate between the past and present provide a sort of anchor; the client is
encouraged to compare his/she new responses with responses he/she made in the past in identical or similar situations. The benefit processing this is, (a) it may aid the client in seeing that some progress has been made, perhaps small, still it is progress, (b) it may bring into focus specific areas of the client's life in which change has occurred and which areas need continued attention.

3) Adding an Objective Vantage Point to the Client's Subjective Outlook: The capacity for human beings to be both observers and participates allows for very different meanings to be attached to personal experiences (e.g. new behaviors). As participates, people tend to attribute the cause of their behavior to external factors or causes. However, as observes, the tendency is for people to find the causes with the participates themselves. The clinical task is to help the client accept the significance of his/her actions as causing or bring about the desired goal.

4) Retrieval of Past Experiences: The personal history of most clients tend to be characterized by more unsuccessful experiences than successful ones. Clients tend often to perceive that much of their lives as one failure after another. While their selectivity of memory may account for their perception of one failure after another, nevertheless they continue to define themselves using their failures as criteria. The goal of this strategy is to make past successes part of the client's personal history. The assumption is made, that clients have had successful and rewarding experiences in the past. The task is to bring these successful and rewarding experiences to the full awareness of the individual, thereby rewriting, to some extent, his/her personal history.

5) Aligning Expectancies, Feelings, Behavior, Objective Consequences, and Self-Evaluation: This strategy is, perhaps, the most complex and difficult to operationalize. The strategy is built on the proposition that negative self-perception is maintained by (a) inadequate behavior patterns, (b) unrealistically high standards for self-evaluation and/or (c) a lack of awareness of the impact the individual is making on the environment. Goldfried and Robins (1982) note that changes in self-perception general lag behind behavior changes. While new experiences and new
behaviors are providing the client with information and feedback, the individual may not necessarily incorporating the information. As a consequence, the client may for example continue to have low expectations for success or he/she may have emotional arousal the kind of which have been associated with past failures. The clinical objective at this point is to bring into alignment all of these elements so that no one of them is accepted or perceived by the client as a predictor of future failure.

In summary, much of what is currently practiced under the rubric of problem-solving intervention (e.g. social problem-solving training, instructional counseling, problem-solving therapy), reflects the convergence of several lines of research. For example, the influence of verbal mediation, that is, the use of speech to organize behavior is evident in every aspect of skills training models. Models also incorporated facets of cognitive-behavioral interventions such as irrational beliefs, distorted beliefs and dysfunctional cognitions. The influence of information processing is also seen. For example, a skill frequently emphasized in training models is for individuals to assess the problem based on what is observed not what they think they observed. Despite the influence of cognitive psychology and the cognitive-behavioral paradigm on social problem-solving skills training, promoting the generalization of skills relied on strategies derived from behaviorism. There was, however, a growing recognition that what the individual brought to the training situation may influence the degree to which skills learned in the training
setting are generalized to other "real-life" situations. One aspect of the individual that may influence training generalization are the perceptions individuals hold about themselves. One set of perceptions that may be particular relevant are the perceptions the individuals holds about his/her capabilities as a problem solver. The problem-solving appraisal construct was suggested as a mediator of problem-solving behavior and outcome.
Chapter III
Methodology

Subjects

A total number of nineteen (19) subjects, five (5) female and fourteen (14) males ranging in age from 11 to 16 years comprised the research sample at the beginning of the study. The 19 subjects were randomly assigned into two groups, treatment and control, with the odd numbered subject placed in the group that was randomly selected. The criteria for inclusion in the study were: 1) the subject was to be between the ages of 12 and 16 years, 2) the subject was to have a history of verbal and/or physical aggression of at least six (6) months as reported by a parent and/or a teacher. The subjects were recruited from a community mental health agency and a special education program both of which are located in Huron County, Ohio. The rationale for recruiting from a special education program was that some students in special education programs, such as a Severely Behaviorally Handicapped (SBH) program, tend to have a history of physical and or verbal aggressive behavior. Four (4) students were recruited from the special education program. Because they were to receive services from a staff member of the mental health agency, all four (4) subjects
were made clients of the agency. In an effort to have the research sample reflect the population of the area, individuals were also recruited from the community mental health agency serving Huron county. Fifteen (15) individuals were recruited from the mental health agency. They were clients who have been receiving services from the agency prior to the beginning of the study.

**Instrumentation**

Three (3) standardized instruments were used in the study:

1) Problem Solving Inventory (PSI)
2) Conners' Parent Rating Scale-93 (CPRS-93)
3) Conners' Teachers Rating Scale-39 (CTRS-39)

The Problem Solving Inventory (Heppner, 1988) was selected to provide information to answer the first three (3) research questions. Based on a review of the literature, the PSI was the only standardized instrument that seemed to tap the phenomenological aspect of problem-solving activities.

The Conners' rating scales were selected to provide information to answer the remaining two (2) research questions. The information needed were levels of aggressive behavior as observed by parents (caretakers) and teachers.

The PSI was designed to assess an individual's perceptions of his/her problem solving behavior and attitudes. The inventory is composed of three (3)
empirically derived scales each of which are described below.

1) Problem-Solving Confidence - is an eleven (11) item scale measuring self-confidence in problem-solving activities. (e.g. Item 11: Many problems I face are too complex for me to solve. Item 27: I trust my ability to solve new and difficult problems.)

2) Approach-Avoidance Style - is a sixteen (16) item scale measuring general tendency to either approach or avoid engaging in problem solving activities. (e.g. Item 16: When confronted with a problem, I stop and think about it before deciding on a next step. Item 1: When a solution to a problem was unsuccessful, I do not examine why it didn't work.)

3) Personal Control - is a five (5) item scale measuring the extent to which an individual believes she/he has control of his/her emotion and behavior while engaging in problem solving activities. (e.g. Item 26: I make snap judgments and later regret them. Item 32: Sometimes I get so charged up emotionally that I am unable to consider many ways of dealing with my problems.)

Individuals respond to each item indicating the degree to which they agree or disagree with the item. The range of responses is from Strongly Agree (1) to Strongly Disagree (6). The inventory is hand scored. Interpretation is based on raw scores which are compared with several normative sample populations in the manual. Low scores are indicative of strengths. The lower the score the more positively the individual is appraising his/her problem-solving abilities.

Heppner (1988) report reliability coefficients (Alpha) between .78 and .85 for the Problem Solving Confidence scale, .84 to .90 for the Approach-Avoidance Style scale and .72 to .74 for the Personal Control scale. Retest coefficients two (2) weeks to two (2) years are reported in
the literature range from .85 to .65 for the Problem Solving Confidence scale, .88 to .61 for the Approach-Avoidance Style scale and .83 to .44 for the Personal Control scale.

Concurrent and construct validity was established by several means, including demonstrating that problem-solving appraisal is positively correlated with measures of psychopathology. For example, Heppner and Anderson (1985) has shown that low scores on the Problem Solving Inventory has been statistically associated with low scores on several clinical scales of the Minnesota Multiphasic Personality Inventory, these included the Depression, Psychasthenia and Schizophrenia scales. Heppner, Kampa and Brunning (1987) has demonstrated that the Problem Solving Inventory provides an estimate of psychological adjustment by showing a statistically significant correlation between the Problem Solving Inventory and several measures of psychological adjustment such as the SCL-90, a psychological symptom inventory and the Cornell Medical Index, designed to assess physical and psychiatric complaints. In addition, low Problem Solving Inventory scores have been statistically associated with positive self-concept internal locus of control, and low incidents of problematic behavior (Larson, Piersel, Imao & Allen, 1990). Heppner (1988) also provided several normative data sets. Shown in Table 1 are the data Heppner (1988) reported in the manual.
Table 1
Statistics for Normative Sample

<table>
<thead>
<tr>
<th>Scales</th>
<th>Possible Range</th>
<th>M (n=402)</th>
<th>SD</th>
<th>SE</th>
<th>M (n=498)</th>
<th>SD</th>
<th>SE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Problem Solving Confidence</td>
<td>11-66</td>
<td>25</td>
<td>7</td>
<td>3</td>
<td>26</td>
<td>7</td>
<td>3</td>
</tr>
<tr>
<td>Approach-Avoidance Style</td>
<td>16-96</td>
<td>46</td>
<td>10</td>
<td>4</td>
<td>44</td>
<td>11</td>
<td>4</td>
</tr>
<tr>
<td>Personal Control</td>
<td>5-30</td>
<td>17</td>
<td>5</td>
<td>2</td>
<td>18</td>
<td>5</td>
<td>2</td>
</tr>
</tbody>
</table>

Heppner (1988) also reported normative data on two clinical samples, counseling center clients and inpatients alcoholics (See Table 2).

Table 2
Statistics for Clinical Samples

<table>
<thead>
<tr>
<th></th>
<th>Counseling clients</th>
<th>Alcoholics</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Sex</td>
<td>M</td>
</tr>
<tr>
<td>Problem Solving Confidence</td>
<td>M</td>
<td>29</td>
</tr>
<tr>
<td></td>
<td>F</td>
<td>28</td>
</tr>
<tr>
<td>Approach-Avoidance Style</td>
<td>M</td>
<td>48</td>
</tr>
<tr>
<td></td>
<td>F</td>
<td>43</td>
</tr>
<tr>
<td>Personal Control</td>
<td>M</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td>F</td>
<td>20</td>
</tr>
</tbody>
</table>

Aggressive behavior was measured using the Conduct Disorder scales of the Conners' Parent Rating Scale-93 (CPRS-93) and the Conners' Teacher Rating Scale-39 (CTRS-39). The rationale for obtaining information from teachers as well as from parents is the quantity and quality
of the behaviors' of the subjects will likely vary from the home environment to the classroom environment.

The Conners' rating scales are standardized instruments that have been in use for well over 20 years. The scales are completed by an individual who is familiar with the person being rated, in this case a subject in the study. Although the CTRS-39 and the CPRS-93 different in format from each other, the instructions to the rater is to indicate the extent to which a range of behaviors are problems. Some of the behaviors rated by the Conners' scales are: "fight constantly", "teases other children or interferes with their activities", "throws and breaks things", "temper outburst", "wants to run things", "picks on other children", "quarrelsome". In the case of the CTRS-39, the teacher was to rate the subject on 39 behaviors using the following responses: Not at All (0), Just a Little (1), Pretty Much (2), Very Much (3). Parents rated their children on 93 behaviors using the following responses: Not a All (1), Just a Little (2), Pretty Much (3), Very Much (4). Scale scores are obtained by summing the values indicated by the respondents. Raw scores are plotted on a profile showing T-scores equivalents. A T-score of 45-55 is interpreted as average.

Both the CPRS-93 and the CTRS-39 contain several scales for assessing a range of functioning (e.g. somatic complaints, hyperactivity, learning problems, anxiety). The
Conduct Disorder scales were the only ones used in the analysis. However, the respondents completed the entire instrument. Administering only those items which load on the Conduct Disorder scale would not have been practical in that there is considerable item overlap, with Conduct Disorder items loading on other scales.

Conners (1990) reports an Alpha Coefficient of .93 for the Conduct Disorder scale of the CPRS-39 and a Retest coefficient of .55. Conners reports that independent observations of disruptive behavior has correlated with the CTRS-39 Conduct Disorder scale from .51 to .73. Conners reported no reliability data on the Conduct Disorder scale of the CPRS-93. However, he does report interrater reliability .85 between mother and fathers and .33 between parents and teachers. The CPRS-93 Conduct Disorder scale was found to correlate at .50 with the Quay-Peterson Conduct Disorder scale in a normal sample and .75 in a clinical sample.

**Procedures**

The following procedures were employed in this study:

1) The researcher contacted the coordinator of the special education program and explained the research project to the coordination. The coordinator gave the researcher permission to address all of the students who met age criterion. A student two months short of his twelfth (12th)
birthday was included in this group. There were ten (10) students present at the meeting.

2) The nature of the research project was explained to the students. The researcher read the Information Script (See Appendix A) to the group. Students who wanted to participate in the study were given letters explaining the research projects which they were to give to their parents (See Appendix B) along with an Informed Consent Form. The students were instructed to return the Informed Consent Forms to their respective teachers within one week.

3) The subjects from the mental health agency were recruited through the agency's therapists. The researcher explained the research project to each of the therapists individually. The therapists were than asked to identify clients who met the previously outlined criteria. An eleven year old who was four months short of his twelfth (12th) birthday was included in the group. It was at the request of a parent that her child be included in the group.

4) Upon receiving the referrals from the therapists, each of the clients were contacted by the
researcher. The project was explained to each one individually, using the Information Script. The nature of project was also explained to their parents, using the information contained in the letter that was sent to the parents in special education group. Parents were also required to complete the Informed Consent Form.

**Administration of Instruments**

5) Prior to the first session of the intervention, a CPRS-93 was given to the parents of each subject. Only one CPRS-93 was given per household. In two parent households, the instruction was for the parents to arrive at a single rating. The instruments were distributed to the parents by one of three ways, either by one of the agencies case manager, a therapist or sent home with the subject. All of the instruments were returned within seven (7) to ten (10) days and all before the beginning of the intervention.

6) Also, prior to the first session of the intervention a CTRS-39 was given to a teacher who was most familiar with the behavior of that subject. One CTRS-39 was completed for each subject. In some cases, only one teacher was involved with the subject. In other cases,
subjects had several teachers. In these cases, several teachers were contacted in an effort to find one that was most familiar with the subject. A case manager from the agency distributed and collected the instruments. The process of distributing and collecting the instruments took approximately two weeks. One teacher refused to complete the instrument, stating that she had only known the subject for a short period of time.

7) The Problem Solving Inventory was administered to the subjects during the first group session. The items were read aloud by the group leader. The group leader explained inventory items that were not understood by subjects, there was no time limit nor were there any parameters placed on the amount of explaining the group leader was permitted to do.

8) The Problem Solving Inventory was administered to the control group subjects within a week of the first session of the group. The inventory was administered both in a group setting and individually. Four (4) subjects completed it in a group setting, with six (6) having it individually administered. In both cases the items were read by the researcher. Although most of the subjects had
a difficult time with some of the items, that is, the items needed to be explained and clarified, one subject asked for clarification of virtually every inventory item. Because of the amount of explaining that was necessary, the researcher concluded that the subject's responses would not be valid. The subject remained in the study but was not administered the Problem Solving Inventory at posttreatment.

9) Several days following the first session, the researcher was informed by a parent that her child did not want to continue with the group. In addition, the researcher was also informed that a subject would be moving out of the county and therefore would not continue in the group. One subject was replaced from a subject from the control group. The other subject was not replaced, resulting in a treatment group with eight (8) members. In addition to having to replace a subject in the treatment group, two subjects were also replaced in the control group. Again, the problem was with subjects moving out of the county. The two control group subjects were replaced by individuals recruited from the mental health agency. Both individuals were new clients to the
agency. The subjects were replaced by the third week into the intervention.

10) The Problem Solving Inventory was individually administered to the one replacement subject in the treatment group by the group leader. The Problem Solving Inventory was also individually administered to the two (2) replacement subjects in the control group by the researcher. An agency case manager distributed the two rating scales. They were returned to the researcher by the fourth week into the intervention.

11) Within one (1) week of the last session, agency case manager began the process of distributing the CTRS-39 and CPRS-93 to the subjects' teachers and parents. All of the instruments were returned to the researcher within two weeks of the last group session.

12) Problem-Solving Inventory was administered to treatment group on the eleventh session. Instrument was administered to control group subjects within the same week.

Outline of Treatment Intervention

The treatment intervention was composed of two phases, the "didactic phase" and the "processing phase." In the Didactic Phase, the subjects were presented with a
problem-solving model. In the processing phase of the intervention, the subjects processed personal or "real life" problems under the guidance of the group leader using a specific set of guidelines for processing the experiences. The treatment condition was designed to strengthen the problem solving appraisal of the subjects. It was developed with the idea that certain experiences, like those contained in the Processing Phase of the intervention, would result in subjects developing or strengthening their perception of themselves as effective and capable problem solvers. The intervention is presented in detail in Appendix D. The intervention combined Goldstein's (1988) problem-solving skills training with the procedures for modifying the self-schemata as presented by Goldfried and Robins (1982, 1983) and Winfrey and Goldfried (1986). The only significant modification of the Goldstein program was that the material was presented in five (5) sessions instead of the recommended ten (10) sessions. The rationale for presenting the model in five (5) sessions instead of ten (10) was to allow for adequate time for processing experiences within the ten (10) week time frame. Based on the review of the literature, it appears that this "hybrid" intervention has not been previously conducted with any population.
Didactic Phase

Session #1: Introduction

Rationale
To increase the probability that a student will profit from the intervention experience, he/she will have to "buy into" the program. That is to say, the student will have to see it as something he/she needs and consequently will take the program seriously.

Goal
To have the student commit to taking the program seriously by agreeing to and signing the treatment contract (See Appendix E).

Objectives
1) The student will identify at least two errors or deficits in his/her problem solving skills.
2) The student will identify at least two "negative" outcomes she/he usually experiences from the way she/he solves problems.

Session #2: Stop and Think

Rationale
The starting point for making productive and positive decision is to learn not to react or respond impulsively, that, not to respond with the first idea that comes to mind.

Goal
To help the student develop ways to avoid acting on the first idea that comes to mind.
Objectives
1) The student will identify at least three thoughts he/she experiences when faced with having to make a decision.
2) The student will identify at least three feelings she/he experiences when faced with having to make a decision.
3) The student will identify at least two techniques he/she can use to help him/her avoid the first idea that comes to mind.

Session #3: Problem Identification

Rationale
Fundamental to solving a problem is to frame it or specify it in such a way as to make it solvable.

Goal
The student will understand the necessity for asking specific questions as a way of framing a problem so as to make it solvable.

Objectives
1) The student will identify five critical questions used for framing a problem.
2) The student will learn the reason for framing a problem around his/her behavior.
Session #4: Gathering Information

Rationale

In order to frame a problem as solvable necessity securing information from two different perspectives-your perspective and the other person's perspective.

Goal

To help the student understand the necessity for gathering information before attempting a solution to a problem.

Objectives

1) The student will explain the concept of perception—that is, two people seeing the same event but having different interpretations or opinions about the event.

2) The student will identify six (6) questions to ask himself/herself to guide his/her thinking about gathering information:

   - What do I see?
   - What do I feel?
   - What am I thinking?
   - What do I need to know?
   - What do others see?
   - What do other think?

3) Student will identify three ways he/she can infer what others are feeling, seeing, thinking.

Session #5: Alternatives and Evaluations

Rationale

In order to have the best possible response, one must have many responses from which to select. Knowing whether
the response was effective can only be determined by whether the response help one accomplished the goal.

**Goal**

To help the student understand that several choices or action are better than only one and the success of a response is measures against what was to accomplished.

**Objectives**

1) Student will demonstrate brain storming.

2) Student will explain what is meant by the statement, "every action has some kind of consequence".

3) Student will identify four questions that can be asked to aid in evaluating a solution or course of action:
   -Is this action in my best interests?
   -Am I willing to pay the consequences?
   -Will this action get me want I want?
   -Is there anything else I need to think about or consider before I act?

4) Student will identify four (4) questions that can be asked to evaluate a tried solution:
   -Did I get what I wanted?
   -Were the consequences too great?
   -Who was hurt?
   -Was I hurt?
   -What did I learn?
   -Could I have done anything differently?

**Processing Phase**

Like the "didactic phase," the "processing phase" is also to be a learning experience. The methodology, however, is on dialogue and the content of the dialogue between the
group leader and the student. The function of the group leader is to process the "real life" experiences of the students using the learned strategies (skills), but applying the clinical guidelines for modifying self-schemata as well. The overall goal of the "processing phase" is to bring about changes in a student's self-schemata whereby the student begins to acquire the perception that he/she is capable of solving "real life"problems. In words, the "processing phase" is designed to impact on the student's problem-solving appraisal.

Unlike the "didactic phase," in the "processing phase," there are no session-by-session guidelines. The task of the group lead is to respond to each student's unique attempts and efforts at solving problems. Consequently, session-by-session detailed instructions are not practical and may even therapeutically counterproductive. The group leader, however, will operate within the parameters of the clinical guidelines for changing self-schemata (Goldfried & Robins, 1983, pp. 53-68; Winfrey & Goldfried, 1986, pp. 241-258).

For the next five (5) sessions (weeks), students presented problems they had encountered. The problems they presented could have been old and recurring ones or more recent ones. Their Problem Logs provided a substantial amount of material for processing.
The guidelines are:

1. **Encouraging new behavior**
   
   **Rationale**
   
   In an effort to break unproductive problem-solving behaviors, it is necessary to encourage the student to try new behaviors and demonstrate to him/her that new behaviors are possible.
   
   **Goal**
   
   To have the student demonstrate or report trying a new behavior.

2. **Discriminating between past and present**
   
   **Rationale**
   
   A short focus on past failures highlights current successes.
   
   **Goal**
   
   To have the student explore past failures to understand what he/she did to cause the failure.

3. **Adding an objective vantage point to the student's subjective outlook**
   
   **Rationale**
   
   Developing an internal locus of control is a requirement for acquiring a perception that he/she is capable of solving problems.
Goal
To have the student identify specific self-generated behaviors that brought about successful resolutions of problems.

(4) Retrieval of past successes

Rationale
Acknowledging past successes may help make successes part of the student's history.

Goal
Bring to the student's awareness past successes, that is, times when he/she successfully negotiated a solution to a problem.

(5) Aligning expectancies, feelings, behavior, objectives, consequences, and self-evaluation

Rationale
For effective performance in problem-solving, there needs to be some measure of consistency between emotional arousal and expectancies.

Goal
To help the student understand that negative expectancies and emotional arousal do not translate to ineffective performance.

The expectation was not for the group leader to apply each of the five (5) guideline to every problem presented in the sessions. However, the group leader was expected to
apply as many as was deemed appropriate across the five (5) sessions.

Group leader

Prior to beginning the intervention, four (4) training sessions each approximately two (2) in length were held with the group leader. All aspects of the intervention was discussed in detail several times over. At each session, the group leader presented, aloud, the material, reading verbatim from the treatment manual. The objective of detailed reading of the manual was to assure that the leader would not deviate from the material once in session and that the material would "flow" and thereby, perhaps, would keep the attention of the subjects focused on the content of the session. The group leader made several suggestions which were incorporated into the intervention. For example, she suggested that a second staff person help with the group. She also suggested that the problem solving steps be given to the subjects on a "handout" instead of simply having them written on the chalkboard. The group leader also suggested that the chalkboard be used more. It was also suggested that the items from Problem Solving Inventory be read aloud to the subjects. These suggestions were incorporated in the treatment.

Location and length

All of the group sessions were held at the mental health agency in a conference room. The subjects sat a
tables. Refreshments were served at the end of each group session. Eleven sessions were held, with a one week break for the Christmas Holiday. A "pizza party" was at the close of the session.

Design

The nonequivalent control group design (Campbell & Stanley, 1963) was used to test the five (5) hypotheses.

The nonequivalent control group design is a quasii-experimental design. The design is an alternative to a true experimental design in which subjects are randomly assigned to the treatment and control groups.

Relative to a true experimental design, a weakness of the non-equivalent control group design is that there is no control for the interaction of selection (self-selection) with other variables for example, maturation, intellectual ability, or socioeconomic status. Because the design does not adequately control for such interactions, alternative or rival explanations for the experimental outcome can not be ruled out. The effects of the independent variable (e.g. treatment condition) are therefore more tenuous.

Statistical Analyses

Means and standard deviations were computed for the variables: age, pretest and posttest distributions of scores for the (3) scales on the PSI and the distribution of scores
for the Conduct Disorder scales on the CPRS-93 and the
CTRS-39. Frequency counts were made for the variables,
gender, grade level educational program and diagnosis.
Statistical Package for the Social Sciences (SPSS) was used
to manage, analyze and display these data.

Hypotheses were tested using analysis of variance. The
model was mixed design of one between-one within-subjects
with repeated measures (e.g. Keppel, 1982; Kennedy & Bush,
1985). The designated between subjects factor was the
intervention, composed of two (2) levels, treatment group
and control group (A). The within subjects factor was the
repeated measures, consisting of two (2) levels
(pretreatment and posttreatment) of the Problem-Solving
Inventory scales and the Conners' Behavior Rating scales
(B). Subjects (S) were nested within levels of A and are
the third factor in the model. The model tested for the
main effect of treatment, the effect of the repeated
measures, that is, individual differences operationally
defined as the variability of scores which deviated from the
group means and the interaction of treatment and repeated
measures on the dependent variable, posttreatment scores of
the five (5) measures. The Statistical Analysis System
(SAS) was used for the analysis of variance.
Chapter IV
Results

Demographic Variables

The descriptive statistics for the demographic variables for the research sample are shown in Tables 3 through 6. In summary, males composed 76% of the sample and females 24% (See Table 3). No ethnic minorities were represented. The average age of the sample was 14 years (See Table 4).

Table 3
Distribution of Gender Subjects for Treatment, Control Groups and Total Sample

<table>
<thead>
<tr>
<th>Gender</th>
<th>Treatment Frequency</th>
<th>Control Frequency</th>
<th>Total Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female</td>
<td>2</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>Male</td>
<td>6</td>
<td>7</td>
<td>13</td>
</tr>
<tr>
<td>Totals</td>
<td>8</td>
<td>9</td>
<td>17</td>
</tr>
</tbody>
</table>
### Table 4
**Distribution of Ages of Subjects for Treatment, Control Groups and Total Samples**

<table>
<thead>
<tr>
<th>Ages</th>
<th>Treatment Frequency</th>
<th>Control Frequency</th>
<th>Total Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>11</td>
<td>0</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>12</td>
<td>1</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>13</td>
<td>3</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>14</td>
<td>1</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>15</td>
<td>2</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>16</td>
<td>1</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Totals</td>
<td>8</td>
<td>9</td>
<td>17</td>
</tr>
<tr>
<td>Means</td>
<td>13.88</td>
<td>13.89</td>
<td>13.88</td>
</tr>
<tr>
<td>Standard Deviations</td>
<td>1.36</td>
<td>1.76</td>
<td>1.54</td>
</tr>
</tbody>
</table>

Approximately 65% of the subjects were in the 7th and 8th grades (see Table 5) and 59% were in some type of special education program (see Table 6).

### Table 5
**Distribution of Subjects in Educational Programs for Treatment, Control Groups and Total Sample**

<table>
<thead>
<tr>
<th>Educational Programs</th>
<th>Treatment Frequency</th>
<th>Control Frequency</th>
<th>Total Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Special Education</td>
<td>4</td>
<td>6</td>
<td>10</td>
</tr>
<tr>
<td>Regular Education</td>
<td>4</td>
<td>3</td>
<td>7</td>
</tr>
<tr>
<td>Totals</td>
<td>8</td>
<td>9</td>
<td>17</td>
</tr>
</tbody>
</table>
Table 6
Distribution of Grade Level of Subjects of Treatment, Control Groups and Total Sample

<table>
<thead>
<tr>
<th>Grade Levels</th>
<th>Treatment Frequency</th>
<th>Control Frequency</th>
<th>Total Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>1</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>6</td>
<td>0</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>7</td>
<td>4</td>
<td>2</td>
<td>6</td>
</tr>
<tr>
<td>8</td>
<td>2</td>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td>9</td>
<td>0</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>10</td>
<td>1</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Totals</td>
<td>8</td>
<td>9</td>
<td>17</td>
</tr>
</tbody>
</table>

Additional characteristics of the sample include 53% of the subjects were from two parent homes and about 53% of the sample were involved with either juvenile court (e.g. probation) or county children's services.

Diagnostic Variables

Shown in Tables 7 and 8, are the descriptive statistics for two (2) diagnostic variables. Approximately 59% of the subjects carried a DSM III-R diagnosis of Oppositional Defiant disorder (See Table 7). To carry this diagnosis, subjects would have to have meet such criteria as (a) defies adult rules or requests, (b) argues with adults, (c) swears or uses obscene language, (d) has temper outbursts, (e) easily angers. The mean level of functioning of subjects, as measured by the Global Assessment Function (GAF) scale was 48.40 (See Table 8). Individuals with similar scores have been described as being moderately to severely impaired in the areas of social and academic functioning.
Approximately 76% of the subjects in the sample has GAF scores below 50, suggesting that a sizable percentage of the subjects were judged at time of their intake as being severely impaired.

Table 7
Distribution of DSM III-R Diagnoses of Subjects in Treatment, Control Groups and Total Sample

<table>
<thead>
<tr>
<th>Diagnoses</th>
<th>Treatment Frequency</th>
<th>Control Frequency</th>
<th>Total Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conduct Disorder</td>
<td>2</td>
<td>4</td>
<td>6</td>
</tr>
<tr>
<td>oppositional Defiant</td>
<td>6</td>
<td>4</td>
<td>10</td>
</tr>
<tr>
<td>Attention Deficit</td>
<td>0</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Totals</td>
<td>8</td>
<td>9</td>
<td>17</td>
</tr>
</tbody>
</table>

Table 8
Distribution of GAF Scores of Subjects for Treatment, Control Groups and Total Sample

<table>
<thead>
<tr>
<th>GAF Scores</th>
<th>Treatment Frequency</th>
<th>Control Frequency</th>
<th>Total Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>32</td>
<td>1</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>38</td>
<td>1</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>40</td>
<td>1</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>43</td>
<td>1</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>44</td>
<td>1</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>45</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>50</td>
<td>1</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>51</td>
<td>0</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>60</td>
<td>1</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>70</td>
<td>1</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Totals</td>
<td>8</td>
<td>9</td>
<td>17</td>
</tr>
<tr>
<td>Means</td>
<td>45.25</td>
<td>51.22</td>
<td>48.40</td>
</tr>
<tr>
<td>Standard Deviation</td>
<td>11.32</td>
<td>8.93</td>
<td>10.27</td>
</tr>
</tbody>
</table>
Measures

Descriptive statistics for the five (5) measures, pretreatment and posttreatment are shown in Table 9 and 10. The distributions of scores for all five (5) measures can be found in Appendix H.

Table 9
Pretreatment Means and Standard Deviations for the Problem-Solving Inventory Scales and Conners' Rating Scales

<table>
<thead>
<tr>
<th>Measures</th>
<th>Treatment</th>
<th>Control</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>M</td>
<td>SD</td>
</tr>
<tr>
<td>PSCa</td>
<td>8</td>
<td>33.13</td>
<td>8.41</td>
</tr>
<tr>
<td>AAb</td>
<td>8</td>
<td>51.38</td>
<td>5.30</td>
</tr>
<tr>
<td>PCC</td>
<td>8</td>
<td>20.00</td>
<td>3.67</td>
</tr>
<tr>
<td>CPRS--93d</td>
<td>8</td>
<td>58.13</td>
<td>10.80</td>
</tr>
<tr>
<td>CTRS-39e</td>
<td>8</td>
<td>55.14</td>
<td>8.11</td>
</tr>
</tbody>
</table>

Notes.  
aProblem-Solving Confidence Scale  
bApproach-Avoidance Style Scale  
cPersonal Control Scale  
dConduct Disorder Scale of Conners' Parent Rating Scale-93  
eConduct Disorder Scale of Conners' Teacher Rating Scale
Table 10

Posttreatment Means and Standard Deviations for the Problem-Solving Inventory Scales and Conners' Rating Scales

<table>
<thead>
<tr>
<th>Groups</th>
<th>Measures</th>
<th>n</th>
<th>M</th>
<th>SD</th>
<th>n</th>
<th>M</th>
<th>SD</th>
<th>n</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Treatment</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Control</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>PSCa</td>
<td>8</td>
<td>36.35</td>
<td>11.70</td>
<td>8</td>
<td>31.75</td>
<td>3.61</td>
<td>16</td>
<td>33.94</td>
<td>8.67</td>
</tr>
<tr>
<td></td>
<td>AAb</td>
<td>8</td>
<td>54.38</td>
<td>11.39</td>
<td>8</td>
<td>50.00</td>
<td>5.73</td>
<td>16</td>
<td>52.18</td>
<td>8.00</td>
</tr>
<tr>
<td></td>
<td>PCc</td>
<td>8</td>
<td>17.38</td>
<td>5.45</td>
<td>8</td>
<td>18.38</td>
<td>4.10</td>
<td>16</td>
<td>17.88</td>
<td>4.70</td>
</tr>
<tr>
<td></td>
<td>CPRS-93d</td>
<td>8</td>
<td>59.13</td>
<td>13.70</td>
<td>9</td>
<td>50.00</td>
<td>13.92</td>
<td>17</td>
<td>54.29</td>
<td>14.16</td>
</tr>
<tr>
<td></td>
<td>CTRS-39e</td>
<td>7</td>
<td>55.43</td>
<td>12.00</td>
<td>7</td>
<td>61.29</td>
<td>12.74</td>
<td>14</td>
<td>58.36</td>
<td>12.30</td>
</tr>
</tbody>
</table>

Notes. aProblem-Solving Confidence Scale
bApproach-Avoidance Style Scale
cPersonal Control Scale
dConduct Disorder Scale of Conners' Parent Rating Scale-93
eConduct Disorder Scale of Conners' Teacher Rating Scale

Tables 11 and 12 show the means and standard deviations for the normative samples reported by Heppner (1988) as well as the means and standard deviations for the research sample.

Table 11

Means and Standard Deviations for Problem-Solving Inventory for the Normative Clinical and Nonclinical Samples and the Research Sample Pretreatment

<table>
<thead>
<tr>
<th>Samples</th>
<th>Research (N=17) (Male &amp; Female)</th>
<th>Clinical (N=26) (Male)</th>
<th>Nonclinical (N=402) (Male)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scales</td>
<td>M</td>
<td>SD</td>
<td>M</td>
</tr>
<tr>
<td>PSCa</td>
<td>33.50</td>
<td>8.25</td>
<td>29.30</td>
</tr>
<tr>
<td>AAb</td>
<td>51.00</td>
<td>5.60</td>
<td>48.80</td>
</tr>
<tr>
<td>PCc</td>
<td>19.00</td>
<td>4.5</td>
<td>21.00</td>
</tr>
</tbody>
</table>
Table 12
Means and Standard Deviations for Problem-Solving Inventory for the Normative Clinical and Nonclinical Samples and the Research Sample Posttreatment

<table>
<thead>
<tr>
<th>Scales</th>
<th>Research (N=17)</th>
<th>Clinical (N=26)</th>
<th>Nonclinical (N=402)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M</td>
<td>SD</td>
<td>M</td>
</tr>
<tr>
<td>PSCa</td>
<td>33.94</td>
<td>8.67</td>
<td>29.30</td>
</tr>
<tr>
<td>AAb</td>
<td>52.19</td>
<td>9.00</td>
<td>48.80</td>
</tr>
<tr>
<td>PCCc</td>
<td>17.88</td>
<td>4.69</td>
<td>21.00</td>
</tr>
</tbody>
</table>

Notes. aProblem-Solving Confidence Scale, bApproach-AVOIDANCE STYLE SCALE, cPERSONAL CONTROL SCALE

The descriptive statistics for the Conduct Disorder Scales of the CPRS-93 and the CTRS-39 are shown in Table 10 with scores shown Appendix H. An interesting aspect about this data is that they can be interpreted as suggesting that the sample as a whole was no more aggressive than most adolescents. Their mean scores of 56.50 and 60.27 on the CPRS-93 and the CTRS-39 respectively were within one standard deviation of the scales' mean and would be given an interpretation of "slightly above average" (Conners, 1990, p. 27). This finding is interesting in that at time of their intakes into the agency, all of the subjects presented with a history and current problems involving verbal and or physical aggression. Their GAF scores were quite suggestive of serious impairment of functioning.
Hypotheses Testing

Ho-1: The treatment group's posttreatment mean score on the Problem-Solving Confidence scale of the Problem Solving Inventory will not be significantly different from the control group's posttreatment mean score on the Problem-Solving Confidence scale of the Problem Solving Inventory.

As indicated in the ANOVA summary table, (See Table 13), the main treatment effect was not statistically significant, $F(1,14) = .27$, $p = .61$. The null hypotheses was accepted. In addition, the main effect of the repeated measures was not statistically significant, $F(1,14) = .03$, $p = .86$, nor was the interaction between treatment and repeated measures significant, $F(1,14) = 1.06$, $p = .32$.

Table 13
Analysis of Variance for Problem-Solving Confidence Scale

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>SS</th>
<th>MS</th>
<th>F</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Ss</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Treatment</td>
<td>1</td>
<td>26.30</td>
<td>26.30</td>
<td>.27</td>
<td>.61</td>
</tr>
<tr>
<td>Residual</td>
<td>14</td>
<td>1371.69</td>
<td>97.98</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Within Ss</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Measures</td>
<td>1</td>
<td>1.53</td>
<td>1.53</td>
<td>.03</td>
<td>.86</td>
</tr>
<tr>
<td>Measures by</td>
<td>1</td>
<td>52.53</td>
<td>52.53</td>
<td>1.06</td>
<td>.33</td>
</tr>
<tr>
<td>Treatment</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Residual</td>
<td>14</td>
<td>696.44</td>
<td>49.75</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Totals</td>
<td>31</td>
<td>2148.49</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Ho-2: The treatments group's posttreatment mean score on the Approach-Avoidance Style scale of the Problems-Solving Inventory will not be significantly different from the control group's posttreatment mean score on the Approach-Avoidance Style scale of the Problem-Solving Inventory.
As shown in the ANOVA summary table (See Table 14), the main treatment effect was not statistically significant, $F(1,14) = .71, p = .41$. The null hypothesis was accepted. The effects of the repeated measures also was not statistically significant, $F(1,14) = .28, p = .60$, nor was the interaction between the treatment and repeated measures, $F(1,14) = .65, [ = .43$.

Table 14
Analysis of Variance for Approach-Avoidance Style Scale

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>SS</th>
<th>MS</th>
<th>F</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Ss</td>
<td>15</td>
<td>1093.22</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Treatment</td>
<td>1</td>
<td>52.53</td>
<td>52.53</td>
<td>.71</td>
<td>.41</td>
</tr>
<tr>
<td>Residual</td>
<td>14</td>
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<tr>
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<td>600.50</td>
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<td>26.28</td>
<td>.65</td>
<td>.43</td>
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<tr>
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<td>14</td>
<td>562.94</td>
<td>40.21</td>
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<td>Totals</td>
<td>31</td>
<td>1693.72</td>
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</table>

Ho-3: The treatment group's posttreatment mean score on the Personal Control scale of the Problem Solving Inventory will not be significantly different from the control group's posttreatment mean score on the Personal Control scale of the Problem-Solving Inventory.

As indicated in the ANOVA summary table, (Table 15), the main treatment effect was not statistically significant, $F(1,14) = .01, p = .97$. The null hypothesis was accepted. Also not statistically significant was the main effect of
the repeated measures, $F(1,14) = 2.0, p = .66$. Interaction between treatment and repeated measures was also not statistically significant, $F(1,14) = 2.68, p = .12$.

Table 15
Analysis of Variance for Personal Control Scale

<table>
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<tr>
<th>Source</th>
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<th>MS</th>
<th>F</th>
<th>P</th>
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<td></td>
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Ho-4: The treatment group's posttreatment mean score on the Conduct Disorder scale of the CPRS-93 will not be significantly different from the control group's posttreatment mean score on the Conduct Disorder scale of the CPRS-93.

As displayed in Table 16 of the ANOVA summary, the main effect of treatment was not statistically significant, $F(1,14) = 1.44, p = .25$. The null hypotheses was accepted. The main effect of the repeated measures was not statistically significant $F(1,14) = .44, p = .25$, nor was the interaction between treatment and repeated measures statistically significant, $F(1,14) = .97, p = .34$. 
Table 16  
Analysis of Variance for CPRS-93

<table>
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<tr>
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<td>.52</td>
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<td>31</td>
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</table>

Ho-5: The treatment group's posttreatment mean score on the Conduct Disorder scale of the CTRS-39 will not be significantly different form the control group's posttreatment mean score on the Conduct Disorder scale of the CTRS-39.

As shown in the ANOVA summary (See Table 17) the main effect of treatment was not statistically significant, $F(1,14) = 2.58$, $p = .13$. The null hypotheses was accepted. The main effect for the repeated measures was not statistically significant, $F(1,14) = .15$, $p = .71$, nor was the interaction between treatment and repeated measures statistically significant, $F(1,14) = .24$, $p = .63$. 
Table 17  
Analysis of Variance for CTRS-39

<table>
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<tr>
<th>Source</th>
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<th>SS</th>
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<td></td>
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<td>7.03</td>
<td>.15</td>
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Chapter V

Summary of Findings and Discussion for Future Research

Summary of Study

The major purpose of this study was to determine whether an intervention combining social problem-solving skills training with procedures for enhancing problem-solving appraisal would result in individuals appraising themselves as capable problem solvers. Capable problem solvers are characterized by:

1) the perception of having confidence in their problem-solving abilities problems

2) a willingness to engage in problem solving as opposed to avoiding the problem solving process

3) the perception of having control over their emotions and behavior while engaging in the problem solving process

A secondary objective was to determine the extent to which levels of aggressive behavior manifested by the subjects and reported by parents and teachers would change as a result of the intervention. The intervention was conducted on a sample of seventeen (17) preadolescent and adolescent males and females drawn from a rural county in northern Ohio. A nonequivalent control group designed was used with the treatment group being composed of eight (8) subjects and the control group having nine (9) subjects.
Three (3) major hypotheses were tested using the three (3) scales of the Problem-Solving Inventory as pretreatment and posttreatment measures. The two (2) minor hypotheses were tested using the Conners' Parent and Teachers rating scales as pretreatment and posttreatment measures of levels of aggressive behavior.

The major hypotheses stated that there would be no difference between the treatment and control groups at posttreatment with regard to: a) the subjects perceiving themselves as capable problem solvers, b) their willingness to engage in problem-solving activities, and c) the subjects perceiving themselves as having control over their emotions and behavior while engaging in problem-solving activities.

Each hypothesis was tested by one-way analysis of covariance. The covariate for each of the analysis was the pretreatment score.

Discussion of Findings

Major Hypotheses

Ho-1: The treatment group's posttreatment mean score on the Problem Solving Confidence scale of the Problem Solving Inventory will not be significantly different from the control group's posttreatment mean score on the Problem Solving Confidence scale of the Problem Solving Inventory.

The outcome of the analysis of variance for the Problem-Solving Confidence scale supported the null hypothesis. The $F$ for the treatment variable (between subjects) was not statistically significant, $F(1,14) = .27$, $p = .61$. It appears that as a group, subjects in treatment
group at posttreatment were no more confident in their problem-solving capabilities than were the subjects in the control group at posttreatment. The contribution of the within subjects variable (repeated measures) to posttreatment test variance was not statistically significant, $F(1,14) = .03$, $p = .86$. The interaction between the treatment by repeated measures variables also was not statistically significant, $F(1,14) = 1.06$, $p = .32$.

Ho-2: The treatment group's posttreatment mean score on the Approach-Avoidance Style scale of the Problem Solving Inventory will not be significantly different from the control group's posttreatment mean score on the Approach-Avoidance Style scale of the Problem Solving Inventory.

The results of the analysis of variance for the Approach-Avoidance Style scale was to accept the null hypothesis. The $F$ for the treatment variable (between subjects) was not statistically significant, $F(1,14) = .71$, $p = .41$. This is interpreted as indicating that at posttreatment, subjects in the treatment and control groups were about equal in terms of being more likely to avoid engaging in problem-solving activities as opposed to engaging in problem-solving activities. The contribution of the within subjects variable (repeated measures) to posttreatment test variance was not statistically significant, $F(1,14) = .28$, $p = .60$. The interaction between the treatment by repeated measures variables was not statistically significant, $F(1,14) = .65$, $p = .43$. 
Ho-3: The treatment group's posttreatment mean score on the Personal Control scale of the Problem Solving Inventory will not be significantly different from the control group's posttreatment mean score on the Personal Control scale of the Problem Solving Inventory.

The analysis of variance for the Personal Control scale resulted in accepting the null hypothesis. The $F$ for the treatment variable (between subjects) was not statistically significant, $F(1,14) = .01, p = .97$. The interpretation of the data is that at posttreatment, subjects in the treatment and control groups were about equal in terms of perceiving the amount of control they have over their emotions and behavior when engaging in problem-solving activities. The contribution of the within subjects variable (repeated measures) to posttreatment test variance was not statistically significant, $F(1,14) = .20, p = .66$. The interaction between the treatment by repeated measures variables also was not statistically significant, $F(1,14) = 2.68, p = .12$.

Minor Hypotheses

Ho-4: The treatment group's posttreatment mean score on the Conduct Disorder scale of the CPRS-93 will not be significantly different from the control group's posttreatment mean score on the Conduct Disorder scale of the CPRS-93.

The outcome of the analysis of variance for the Conduct Disorder Scale of the CPRS-93 supported the null hypothesis. The $F$ for the treatment variable (between subjects) was not statistically significant, $F(1,14) = 1.44, p = .25$. It would appear that levels of aggressive behavior reported by
the parents' of the subjects at posttreatment were about equal for both the treatment and control groups. The contribution of the within subjects variable (repeated measures) to posttreatment test variance was not statistically significant, $F(1,14) = .44, p = .25$. The interaction between the treatment by repeated measures variables also was not statistically significant, $F(1,14) = .97, p = .34$.

H0-5: The treatment group's posttreatment mean score on the Conduct Disorder scale of the CTRS-39 will not be significantly different from the control group's posttreatment mean score on the Conduct Disorder scale of the CTRS-39.

The results of the analysis of variance for the Conduct Disorder scale of the CTRS-39 was to accept the null hypothesis. The $F$ for the treatment variable (between subjects) was not statistically significant, $F(1,14) = 2.58$, $p = .13$. The data indicated that at posttreatment, the levels of aggressive behavior reported by the subjects' teachers were about equal for both groups. The contributions of the within subjects variable (repeated measures) was not statistically significant, $F(1,14) = .15$, $p = .71$. The interaction between the treatment by repeated measure variables also was not statistically significant, $F(1,14) = .24, p = .63$.

In summary, the evidence does not support the efficacy of the intervention as it was conducted at this study. Group means for the treatment and control groups on all five
(5) measures at posttreatment were not statistically different. Within subjects variability (individual differences) made no significant contribution in terms of accounting for posttreatment test variance. The combined variance of the between subjects variable and the within subjects variable made no significant contribution to posttreatment test variance.

The available evidence clearly does not support the efficacy of the intervention as it was conducted in this study. There were, however, several conditions that existed that may have had mediating influences and consequently impacted on the outcome of the study.

First, the Problem Solving Inventory was not designed for adolescents. Much of the normative data was derived from a college student population. Baker and Roberts (1989) in their factor analytic study of the PSI concluded that the factor structure of the PSI is similar for a sample of ninth grade students, compared with the factor structure reported by Heppner (1988). The group leader reported that in her opinion, many of the subjects had difficulty understanding a moderate percentage of the test items.

Second there is appears to be evidence suggesting that the research sample may not have been all that aggressive in the first place. For example, the range of CPRS-93 Conduct Disorder Scale scores for the treatment group was from 42 to 69, with a mean score of 58.13. According to the manual
(Conners, 1990), a "T" score of 58 is in the slightly above average range. Surveying the entire distribution of scores for the treatment group, one (1) score fell within the "below average range", one (1) in the "average range", three (3) scores fell within the "slightly above range" and one (1) in the "above average" and another in the "much above average" range. Based on clinical judgment, the bulk of the subjects' did not achieve elevations that would be considered clinically significant. Similar judgments can be made about the distribution of the Conduct Disorder Scale scores of the CTRS-39.

Third the age range of the sample crossed significant developmental lines (e.g. preoperational-operational stages of cognitive development) and the intervention made no provisions for different stages of cognitive development. Neither did the intervention make provisions for individual differences of cognitive, social and emotional maturity levels. Therefore, the interaction between learning and development was not tapped by the intervention.

Within the Vygotskyan framework (Vygotsky, 1935/1978) the intervention did not permit work to occur with regard to "zones of proximal development". Therefore, while some subjects may have understood the tasks and were capable of performing them on their own, other subjects may have been only capable of performing them under the guidance of an adult or a more capable peer. It is these latter
individuals who may have profited least from the intervention in the sense that their particular "zone of proximal development" was never bridged.

A fourth point that was briefly mentioned earlier, was the lack of incentives. Stated somewhat differently, were the subjects motivated to learn and change their behavior? This is a difficult question to answer with any degree of certainty. When similar research is carried out using subjects in residential programs, there is generally a built-in incentive to make changes if, for no other reason, than to just, "play the game" for awhile. The incentives usually take the form of privileges, such as passes for home visits, television time etc. This was not the case in the study.

Interestingly, all but one of the subjects had perfect attendance over the course of the program. In addition, the group leader consistently reported (at weekly supervision with the researcher) the subjects were cooperative, they appeared interested and involved in the sessions. It was further reported by the group leader that several subjects confronted peers about their behavior in group and their behavior outside of the group. On face value, it would seem that the subjects were reasonably motivated. However, there was no way of knowing whether the motivation extended outside the group, driven by some desire to change their behavior.
Related to this issue is that researcher had no control over the home and school environments. Consequently, there was no way of knowing whether appropriate behavior was being evenly minimally rewarded or even recognized by significant adults in the subjects' environments.

Last, it was assumed that learning a new set of beliefs (perceptions) about oneself can be acquired in a ten (10) week period of time. The current emphasis on "short-term" therapy (e.g. Goldstein, 1988) and the prevailing 10 to 15 week interventions program, (e.g. Walter & Peller, 1992) admittedly influenced the structure of the program. In retrospect, there was no adequate justification (including empirical) for limiting the intervention to 10 weeks. What may have been a very important missing element was repetition in the processing phase of the intervention.

As recalled, it was the processing phase of the intervention that was to have the greatest impact on changing perceptions. While the didactic phase posed the question, "What can I do?", the processing phase posed the question was, "What are my capabilities and my strengths?". Essentially, the intervention was a program to train the subjects to think differently about their abilities and capabilities as problem solvers. In this sense, the intervention parallels the goals of the cognitive-behavioral therapy paradigm. The instrumental goals of cognitive-behavioral therapy are to change or modify
distorted maladaptive cognitions, while strengthening rational and adaptive cognitions. One strategy used in the therapy (e.g. Burns, 1980) is repetition. Specifically, the individual is required to repeatedly self-challenge his or her distorted cognitions or beliefs, replacing them instead with more adaptive beliefs and cognitions. The degree of repetition frequently found in cognitive-Behavioral therapies was not required of the subjects in the study.

Recommendations for Future Research

1. Future research studies should be designed to test hypotheses on the impact of age on treatment outcomes. Consequently, the need is for multifactorial designs, with age, for example either "crossed" or "nested." The objective would be to determine the extent to which age mediates the relationship between intervention and outcome.

2. The intervention should be restructured, increasing the number of sessions in the processing phase of the intervention. As previously noted, the ten (10) week intervention format has no empirical support. The ten (10) week format seems to reflect more of a trend in the literature than anything else. While five (5) weeks may be sufficient time to learn the steps of a problem-solving model, acquiring new perceptions about one's ability to apply the model may require more time.
3. There are three (3) recommendations that can be made regarding incentives. First, researchers will need to develop for each subject a contingency schedule, using procedures similar to the procedures used in behavior modification programs. Secondly, the intervention will need to involve parents/caretakers. Their roles would be to augment the activities of the intervention in the home environment such as processing experiences and providing reinforcement according to the contingency schedule. Lastly, there needs to be greater attention given to the relationship between the subjects and the group leader. The group leader will need to be seen as a credible person, who can motivate and influence the subjects.

4. An adolescent version of the PSI should be developed. A potentially beneficial line of research would be to replicate the studies that were originally conducted with adults be conducted with children and adolescents. Reliability and validity studies of the PSI with the adolescent population could lead to a more useful version of the PSI, with adolescent norms.

5. With an adolescent version of the PSI, researchers would have a means for examining many relevant questions. For example, What is the relationship
between problem-solving appraisal and adjustment or mental health in the adolescent population? Is there a relationship between problem-solving appraisal and aggressive behavior? Are there parenting practices that predict positive problem-solving appraisal in adolescents? What is the relationship between problem-solving appraisal and the way adolescents encode and process stimuli from their social environments? Consistent findings in the literature are that compared with nonaggressive adolescents, aggressive adolescents attend more frequently to aggressive cues in their environments, they tend to mislabel the intentions of others as aggressive even when the intentions of others are clearly not aggressive in nature (Dodge, 1980; Dodge & Frame, 1982; Dodge & Newman, 1981; Dodge et al., 1986; Milich & Dodge, 1984). An interesting question might be whether individuals who perceive themselves as capable problem solvers are less likely to attend to aggressive cues or to mislabel the intentions of others compared with individuals who do not perceive themselves as poor problem solvers.

6. Additional strategies for modifying problem-solving appraisal needs to be researched. The intervention tested in this study combined two strategies which
were rather distant from each other in the literature. There is ample opportunity and reason for researchers to be creative in developing intervention for modifying problem-solving appraisal.

7. Researchers should make greater use of single-case or "small N" research designs. The use of large sample research to help further define and describe the problem-solving appraisal construct is necessary. However, this type of research may be of limited utility to the practicing clinician especially regarding the efficacy of clinical intervention. Hilliard (1993) argues that large sample studies do not provide the type of information which is important to understanding the therapeutic processes and how people change as a result of an intervention. The type of information that Hilliard sees as most important is, "the temporal unfolding of variables within the individual subjects." (p. 374) To obtain this type of information necessities the use of variations of the single-case or single-subject methodology.

The use of the single-case methodology for studying process has been advocated by others as well (e.g.
Kiesler, 1983; Greenberg, 1986). Summarizing the major issue, Hilliard writes:
... if we are ever to discover what aspects of a particular psychotherapeutic modality actually results in therapeutic change and how they do so, we must break down global outcome into a series of smaller interrelated changes and attempt to discover how the therapist's intervention and patient's response (i.e. the therapeutic process) contribute to or explain these smaller changes. In this approach, there is a shift from an exclusive focus on the therapeutic process or therapeutic outcome to a focus on the process of change or change process. (p. 374)
Appendix A

Information Script

I am conducting a study to help people, like yourself, learn different ways of solving problems instead of fighting or "copping an attitude". Your teacher (or counselor) thought that you might be interested in participating in the study. What you would have to do is to attend a group, like a class, for about one hour a week for ten weeks. In this group, you will learn and practice ways of solving problems—the kind you sometimes have with parents, teachers, or friends. Some of you will be in a group that will begin in about two weeks. Others of you will be in a group that will meet later on in the school year. In addition to the groups, you will also have to take a test twice. The test is not like the kind your teacher gives you. For this test, there are no right or wrong answers. The results will not be shared with your teacher or put in your school file. In fact, you don't even put your name on it. Also, whatever is said in the group will not be repeated by the group leader to any of your teachers. If, however, you tell the group or the group leader that you want to hurt yourself, hurt someone else, or that you are being physically or sexually abused, this information will need to be reported to others
such as Children Services, a teacher, or a parent. Lastly, we would like to have your permission to look at your school record for things like the number of times you had detentions this year.

While I hope you will want to participate, you don't have to. If you choose not to participate, nothing will happen to you. That is to say, there are no consequences for choosing not to participate. If you choose to participate, but later you want to drop out, you may and nothing will happen to you.

If you choose to participate, I would hope that you will stay with the group until the end and take it seriously. You will need to get one of your parent's permission to participate in the group. Both you and one of your parents will have to sign a permission form before I can let you into one of the groups.

Do you have any questions?
Appendix B

Dear Parent:

A study to help children deal more effectively with personal problems is to be conducted. We, Professor Susan Jones-Sears and John Miga, both of the Department of Educational Services and Research of The Ohio State University, will be conducting the study. A number of children will be assigned to one of two groups. The groups are designed to teach children ways of solving personal problems--the kind children often have with parents, teachers, and friends. The groups will begin at different times over the year. The groups will last about 10 weeks and will meet for about one hour a week.

The children will need to complete a questionnaire at different times in the study and parents will be asked to answer questions about their child's behaviors, again, at different times during the study. None of the information will be part of the child's school record and will be kept confidential.

We respectfully request your permission to include your child in the study, if he/she agrees to be part of the study. Your child can withdraw from the study at any time without any consequences. You can also withdraw your permission for your child to participate without any consequences.

If you are willing to give your permission, please sign the attached permission slip and return it to John Miga. If you have any questions, please call Dr. Sears, (614) 292-8936, or John Miga, (419) 663-3737.

Thank you for your time.

Signed:

Susan Jones-Sears
Principal Investigator
John Miga
Co-Investigator

Enclosure
Appendix C

THE OHIO STATE UNIVERSITY

CONSENT FOR PARTICIPATION IN
SOCIAL AND BEHAVIORAL RESEARCH

I consent to participating in (or my child's participation in) research entitled:

The Impact of Working with Social Problem-Solving Skills and Self-Schemata on Modifying Aggressive Behavior in Young Adolescents

Susan Jones-Sears, Ph.D. or his/her authorized (Principal Investigator)
representative has explained the purpose of the study, the procedures to be followed, and the expected duration of my (my child's) participation. Possible benefits of the study have been described as have alternative procedures, if such procedures are applicable and available.

I acknowledge that I have had the opportunity to obtain additional information regarding the study and that any questions I have raised have been answered to my full satisfaction. Further, I understand that I am (my child is) free to withdraw consent at any time and to discontinue participation in the study without prejudice to me (my child).

Finally, I acknowledge that I have read and fully understand the consent form. I sign it freely and voluntarily. A copy has been given to me.

Date: ______________________ Signed: ______________________
Signed: ______________________ (Person Authorized to Consent for Participate - If Required)

(Principal Investigator or his/her Authorized Representative)

Witness: ______________________

HS-027 (Rev. 3/87)--(To be used only in connection with social and behavioral research.)
Appendix D

Manual for Treatment Procedures

1) As the interventionist in this project, your primary responsibility is to the individual group members. Their welfare is to take priority over all other issues or concerns associated with the project. Consequently, you are responsible for reporting to the researcher any and all conditions, events, etc. you believe are potentially physically and/or psychologically dangerous to a particular individual or to the group at large. You are also responsible for reporting to the researcher information revealed by a group member, either in group or privately suggesting the individual having been or is currently a victim of physical and/or sexual abuse. In addition, you are to report to the researcher individuals who express suicidal and/or homicidal ideations.

2) Although the group members are research subjects, your relationship with them is a counselor-client relationship and accordingly, you are required to:

   a) treat each member with dignity and respect

   b) establish a therapeutic relationship with each member
c) maintain confidentiality (with expectations noted above)

3) You are required, to the best of your ability, as closely as possible, to follow the treatment procedures in the Manual for Treatment Procedures. However, you are also expected to use your professional judgment when appropriate. You are required to report to the researcher any and all significant deviations from the procedures.

4) Sessions will be held weekly and length of sessions will be approximately one hour.

5) You will be required to keep session notes for each group member.

6) You will be required to attend weekly supervision meetings with the researcher.

DIDACTIC PHASE

Session One: Introduction

Rationale

To increase the probability that a student will profit from the intervention experience, he/she will have to "buy into" the program. That is to say, the student will have to see it as something he/she needs and consequently will take the program seriously.

Goal

To have the student commit to taking the program seriously by agreeing to and signing the treatment contract.
Objectives
1) The student will identify at least two errors or deficits in his/her problem solving skills.
2) The student will identify at least two "negative" outcomes he/she usually experiences from the way he/she solves problems.

Activities
1) Get acquainted activity
2) Group Leader will say:
   a) We make decisions every day. Some are simple, like what to eat or what to wear and many decisions are made automatically.
   b) Some decisions, however, are harder to make because they are complicated or bigger or more serious. Often, when faced with these kind of decisions, we don't know what to do and we may say, I have a problem.
   c) Problems can be solved and what we hope we can do for you is to teach you ways of solving your problems so you don't do the first thing that comes to mind or give up and do nothing.
   d) Problems have two things in common. One is that there is a goal, that is, something you want. Secondly, there is an obstacle or something or somebody is preventing you from getting what you want which is your goal.
e) So what is a problem? Group leader is to wait for a response from the group. Help the group conceptualize by leading them toward a definition like: a problem is a situation or experience in which I have a goal or something I want and there is (are) obstacle(s) or something or somebody that gets in the way of what I want.

3) Probing where the students are regarding their decision making skills and outcome. Group leader is to ask the following questions, one at a time, allowing time for the students to respond to each question. Group leader is to record students' responses on the chalkboard.

a) Group leader is to say: Think back to a decision you made that turned out not to be so good, that is, it was a bad decision. Group leader is to ask: What was it that made it a bad decision? Group leader will focus or direct students toward identifying long-term and short-term negatives consequences of the "bad decision". Group leader will need to have the students be specific about the type of consequences. Group leader will not allow statements like, "I got in trouble" to go unchallenged. Have students be specific.

b) Group leader is to say: Think again about that "bad decision" and try to remember how you felt when you realized that the decision was not turning the way you thought it would? Group leader is to focus on the
emotionality resulting from the decision e.g. anger, frustration, disappointment.

c) Group leader is to say: Once more, think about that "bad decision", this time, tell me what did you do or not do that may have lead to that decision being a "bad decision". Group leader will direct the discussion toward the process that is, the steps the students took toward making the decision. The focus is on helping the students see that "short cuts" (e.g. not thinking first) generally results in "bad decisions".

4) Group leader is to say: So far today, you have heard the words decision making and problem solving, and you are probably wondering what we mean by problem solving and what exactly are we going to be doing over the next 10 to 12 weeks. First, we are going to talk a lot about the steps that one should be using when trying to solve a difficult problem.

a) Group leader is to distribute the handout outlining the six steps to problem solving (See Appendix F).

b) Group leader is to outline on the board the six steps:
   1) Stop and Think
   2) Problem Identification
      (What is the problem?)
   3) Gathering Information From One's Own Perspective
      (What do I see?)
(What do I feel?)
(What are the facts?)

4) Gathering Information From Others' Perspectives

(What do others see?)
(What do others feel?)
(What do others think?)

5) Alternative

(What can I do?)
(What can I say?)
(What are my choices?)

6) Evaluating Consequences and Outcomes

(What will happen if I do or say that?)
(How do I decide what to do?)

C) Group leader will say: After we learn the steps, we will begin to practice. For this part I will need your help.

1) Group will hand out the Problem Log (See Appendix G) giving 10 to each person.

2) Group leader will give the following instructions: Each week you are to complete your Problem Log. You are to choose a problem or something you didn't know exactly what to do about.

3) Group leader is to give an example of how to complete the log.

5) Group leader is to ask whether there are any questions either about the Problem Log or the program in general.
At this point, the group leader is to ask each student to sign the treatment contract (See Appendix E).

**Session Two Stop and Think**

**Rationale**

The starting point for making productive and positive decisions is to learn not to react or respond impulsively, that is, not to respond with the first idea that comes to mind.

**Goal**

To help the student develop ways to avoid acting on the first idea that comes to mind.

**Objectives**

1) The student will identify at least three thoughts he/she experiences when faced with having to make a decision.

2) The student will identify at least three feelings she/he experiences when faced with having to make a decision.

3) The student will identify at least two techniques he/she can use to help him/her avoid the first idea that comes to mind.

**Activities**

1) Group leader will say: As hard as it is for you to believe, you don't have to do the first thing that comes to mind when trying to solve a problem. (Group leader will remind students that a problem has a goal and an obstacle, last session's material). As you remember
from last session, often doing the first thing that comes to mind makes things only worse.

2) Group leader will say: The first thing we want to do is to talk about what you think and how you feel when faced with having to make a decision. Group leader is to list the students' responses.

3) Group leader is to ask the following questions: What do you think, what thoughts do you have when having to make a decision? (Record responses on board) What do you feel when you have to make a decision? (Record responses on board)

4) Group leader is to ask: Do you have to act on the first thing that comes to mind? Group leader is to stress the idea that having a thought or feeling does not necessarily mean that you have to act on it.

5) Group leader is to ask? Instead of acting on what comes to mind, what can a person do to avoid acting on the first thing that comes to mind? Group leader is to list the suggestions made by group members. The group leader is to say: In addition to the things you said (or let's talk more about the ones you suggested) there are these
   a) Self-talk
   b) Deep breathing
   c) The Ally
(Adopted from Wexler, 1991)
6) Group leader is to say: When we are faced with a problem, we talk to ourselves—we are always talking to ourselves. Often, however, the things we say to ourselves is not helpful, it makes matters worse. Group leader is to say: Tell me some of the things you tell yourselves that have made things worse for you. Group leader is to list responses on the board.

7) Group leader is to say: Now that we have a list of the negative stuff, what are some things we can say to ourselves that may be more helpful. (Group leader, remember the focus is on self-talk as a way of inhibiting impulse behavior) Examples of self-talk responses:
   -- stop and think
   -- if I do this, that might happen
   -- count to 50
   -- it is time to relax
   -- this is no big deal
   -- I don't need to react
   -- I'm cool

8) Group leader is to say: Another thing you can do to help yourself from doing the first thing that comes to mind, like losing control, is to breath. I know that sounds silly, we all breath. But what I am talking about is deep breathing, like this (Group leader is to demonstrate). Now all of you do it (Group leader is to
practice with the group and guide the group). The Group leader is to say: To help you, I want you to use your imagination. Close your eyes and imagine ten (10) candles burning, there they all are in a row—see them—there is a flame on each one. Now, as you breathe deeply, imagine that each time you exhale, you blow out one candle (Group leader is to demonstrate). Group leader is to say: Imagine your candles—breath in—now exhale—a second candle is out. Group leader is to continue for the remaining eight (8) candles.

9) Group leader is to say: There is still one other thing I want to teach you. Who knows what an ally is? Wait for a response. Guide the group toward the idea that an ally helps you. The kind of ally we want to have is one who:

-- reminds you of your freedom of choice
-- supports your efforts and trying
-- reminds you of the positive in your past and expects positives in your future
-- trusts you and lets you trust yourself
-- pays more attention to solution then to problems

Group leader is to say: Think about a person who helped you in the past. Think about a person who you see as your ally. Now try to relax and visualize your ally—visual and listen to what your ally is doing and saying
to you. Now, imagine some time in the near future, a situation, in which you are trying to control your self or trying to make a very important decision, what is your ally saying to you? Your ally is reminding you that you have a choice, that you have done well in the past, that your ally will help you and trusts you. Imagine solving the problem and feeling good that you did.

10) Group will have students write on a sheet of paper:
   -- three thoughts they experience when faced with having to make a decision
   -- three feelings they experience when faced with having to make a decision
   -- two techniques that can be used to avoid doing the first thing that comes to mind when faced with having to make a decision or respond to a situation

Session Three Problem Identification

Rationale

Fundamental to solving a problem is to frame it or specify it in such a way to make it solvable.

Goal

The student will understand the necessity for asking specific questions as a way of identifying the problems.

Objectives
1) The student will identify five critical questions used for framing a problem.

2) The student will learn the reason for framing a problem around his/her behavior.

Activities

1) Group leader will ask each member to identify/describe a problematic situation. Then ask how they would go about solving it. If the student presents a solution that requires another person to change his/her behavior, inquire how they plan to change that person's behavior. Group leader is to generate discussion on the idea that a solution to a problem is going to work only when the focus of the solution is on changing one's own behavior.

2) Group leader is to present the following questions which must be asked and answered to frame the problem so as to be solvable.
   -- What do I really want?
   -- What is my goal?
   -- What am I trying to accomplish?
   -- What don't I like?
   -- What is getting in the way of what I want?
   -- What needs to change?
   -- What changes do I need to make?

3) Group leader is to have each student use the critical questions to frame the problematic situation he/she earlier identified in a way that makes it solvable.
Group leader is to ask members for their input, that is, to help each other work through the process.

Session Four Gathering Information

Rationale

In order to frame a problem as solvable, necessity securing information from two different perspectives—yours and the other person's.

Goal

To help the student understand the necessity for gathering information before attempting a solution to a problem.

Objectives

1) The student will explain the concept of perception— that is, two people seeing the same event but having different interpretations or opinions about the event.

2) The student will know six (6) questions to ask himself/herself to guide his/her thinking about gathering information.
   -- What do I see?
   -- What do I feel?
   -- What am I thinking?
   -- What do I need to know?
   -- What do others see?
   -- What do others think?

3) Student will identify three ways he/she can infer what others are feeling, seeing, thinking.
Activities

1) Group leader will say: I am going to show you two pictures (Ink Blots) and I want you to write on a sheet of paper what the picture (Ink Blot) looks like to you. Don't say anything out loud, just write on the paper. Group leader is to show the first card—wait a few seconds and show the second card. The group leader is then to ask each member what he/she saw on each card.

2) Group leader is to divide the group into smaller groups of two or three. Group leader is to say: I am going to show you a picture. I want you to write a short story, as a group. The story must have a beginning, a middle, and an end. Also, I want you to be able to tell me who is the most important person in the story. Group leader is to present the picture and allow 15 minutes for the students to write the story.

3) After students have completed their stories, each group is to present their story.

4) The Group leader is now to emphasize differences in the stories. Group leader is to ask: Why are your stories not the same? Group leader is to make the point that we "read" into situations based on "who we are"--that is, our experiences.

5) Group leader is to say: Now that we have come to understand that we all see things differently, we need to have a way of getting information that is factual--
that is, how it really is not how I think it is. Group leader is to present the following questions emphasizing observations and self-assessment.

-- What do (did) I see?
-- What do (did) I feel?
-- What are (were) my thoughts?

6) Group leader is to say: Now that we have some questions to ask ourselves, what questions could be asked to help us get the other person's point of view. Group leader is simply to guide the students toward asking:

-- What does (did) the other person see?
-- What does (did) the other person feel?
-- What does (did) the other person think?
The focus is on helping the student see that there is another point of view.

7) Group leader is to ask: What are some ways we can get some information about other people's feelings, what they are seeing and thinking.

-- watch for facial expressions
-- ask them
-- listen carefully

Session Five Alternatives and Evaluations

Rationale

1) It is usually better to have several choices of actions than only one.
2) In order to know how "good" a chosen solution was it must be evaluated.

Goals
1) To help the student understand why many choices are better than having only one course of action.
2) To help students understand why it is necessary to evaluate a course of action.

Objectives
1) Student will demonstrate brain storming.
2) Student will explain what is meant by "every action has some kind of consequence".
3) Student will identify four questions that can be asked to aid in evaluating a solution or course of action.
   -- Is this action in my best interests?
   -- Am I willing to pay the consequences?
   -- Will this action get me what I want?
   -- Is there anything else I need to think about or consider before I act?
4) Student will identify four questions to be asked to evaluate the tried solution.
   -- Did I get what I wanted?
   -- Were the consequences too great?
      -- Who was hurt and how?
      -- Was I hurt and how?
      -- What did I learn?
      -- Could I have done anything differently, like?
Activities

1) Group leader is to give presentation on "brain storming". Use a common problem and demonstrate. Try to get at least three (3) workable solutions.

2) Group leader is to ask: What question could you ask yourself to figure out whether a solution or action is better than another. Group leader is to write suggestions on board. In the end focus on the questions

-- Is this action in my best interest?
-- Will this action get me what I want?
-- Am I willing to pay the consequences?
-- Is there anything else I need to think about or consider?

3) Group leader is to say: Now that you have made a
decision about which solutions to use, you try it out.
But how do you know whether it worked. What questions can you ask yourself? Group leader is to follow the same procedure above. This time, however, the focus is on questions like:

-- Did I get what I wanted?
-- Were the consequences too great?
-- Who was hurt and how?
-- Was I hurt and how?
-- What did I learn?
-- Could I have done anything differently, like?
Processing Phase

Like the "didactic phase," the "processing phase" is also to be a learning experience. The methodology, however, places a greater emphasis on dialogue and the content of the dialogue between the leader and the student. The function of the leader is to process the "real life" experiences of the students. The overall goal of the "processing phase" is to bring about changes in a student's self-schemata and to acquire the perception that he/she is capable of solving "real life" problems.

Unlike in the "didactic phase," in the "processing phase," there are no session-by-session guidelines. The task of the leader is to respond to each student's unique attempts and efforts at solving interpersonal and "real life" problems. Consequently, session-by-session guidelines are not practical and more importantly, may be therapeutically counterproductive. Leaders will, however, operate within the parameters of the clinical guidelines for changing self-schemata (Goldfried & Robins, 1983, p. 53-68; Winfrey & Goldfried, 1986, p. 241-258).

1) Encouraging new behavior.

Rehearsal, contracting, role play, and modeling have all be suggested as methods for promoting new behavior.

a) Group leader will model behaviors which are novel to the student.

-- for example, deep breathing to calm oneself down
b) Before having a student try a new behavior, they will role play with the student and will have to rehearse the behavior at home.

2) **Discriminating between past and present.**

The objective is to help the student see any gains, no matter how small, he/she has made within the course of treatment.

a) Group leader will search for and reinforce every positive/ productive behavior change, no matter how seemingly insignificant.  
   -- for example, a student swearing at a peer instead of hitting her/him

b) When a student deals with an old situation using new more positive and productive behaviors, the group leader will have the student evaluate the new behavior against past responses.  
   -- for example, "How might you have handled that situation before?"

3) **Adding an objective vantage point to the student's subjective outlook.**

The goal is to help the student develop an "internal locus of control" by having him/her become an observer of his/her behavior.

a) The group leader will provide feedback on all attempts (successful and unsuccessful) by a student with a "problem".
b) The group leader will challenge all attempts by a student to attribute successes or failures exclusively to external causes or factors.
- for example, "What did you do to cause that to happen?" or "What could you do to make that happen again?" or "What could you have done differently?"

4) **Retrieval of past successes.**

The goal is to make successes part of a student's history. While successes may be few and far between for the student, the group leader must bring into the student's awareness those successes that have occurred.

a) The group leader will have the student retrieve from memory past successes he/she experienced when dealing with a problem, situation etc. similar to the one he/she is currently dealing with.
- for example, "Can you remember a time when you were dealing with a similar problem?"

b) The group leader will direct the student's attention to the past success and process that distal experience.
- for example, "How are the two situations similar?"
  "Where did you do to solve the problem last time?"
  "Were you happy with the outcome last time?"
5) Aligning expectancies, feelings, behavior, objective consequences and self-evaluation.

The basic notion that the student needs to understand is that negative expectancies and emotional arousal may be salient at the time (i.e. in the current situation), but they do not necessarily predict ineffective performance or failure with regard to solving the current problem.

a) The group leader will need to be extremely sensitive to a student's affect (i.e. emotional arousal).
   - for example, "You seem to be very uptight about this problem?" "What would be helpful for me to know about your worry about this problem?"

b) The group leader will challenge the student's beliefs about the relationship between negative emotional arousal and expectancies and future success.
   - for example, "Have you ever felt this way before and still things worked out well for you?" "Can you remember a time when you thought you couldn't do something, but you did and you were successful?"
APPENDIX E

TREATMENT CONTRACT

I, ____________________________, having agreed

Student's Name

participate in this study, agree to do the following to the

very best of my ability.

1) Attend all treatment sessions

2) Complete my problem log every week

3) Follow the suggestion of my counselor

__________________________________________  ____________
Student's Signature                      Date

__________________________________________  ____________
Trainer's Signature                  Date
Appendix F

SIX STEPS TO PROBLEM-SOLVING

1) Stop and Think

2) Problem Identification
   (What is the problem)

3) Gathering Information (From One's Own Point of View)
   (What do I see?)
   (What do I feel?)
   (What are the facts?)

4) Gathering Information (From Others' Point of View)
   (What do others see?)
   (What do others feel?)
   (What do others think?)

5) Alternatives
   (What can I do?)
   (What can I say?)
   (What are my choices?)

6) Evaluating the Consequences and Outcomes
   (What will happen if I do or say that?)
   (How do I decide what to do?)
APPENDIX G

PROBLEM LOG

Date ____________________

What is the problem? Describe it (who is involved, where did it happen, and what happened?).

What do you want to happen?

What did you do or say to solve the problem?

Did your choice solve the problem?

How well did it work?

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Homework:
## Appendix H

### Pretest, Posttest and Gain Scores for the Treatment and Control Groups

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Notes: PSC SEM = 2.7; AA SEM = 10.6; PC SEM = 4.5 (n = 402, males)
CTRS and CPRS Mean = 50 Standard Deviation = 10
References


Loeber, R., & Dishion, T. J. (1983). Early predictions male


151


