1982

Social problem-solving ability and adolescent popularity.

Jo-Anne M. Lewicki
University of Windsor

CANADIAN THESES ON MICROFICHE.

I.S.B.N.

THESES CANADIENNES SUR MICROFICHE

National Library of Canada
Collections Development Branch

Canadian Theses on
Microfiche Service

Ottawa, Canada
K1A 0N4

Bibliothèque nationale du Canada
Direction du développement des collections

Service des thèses canadiennes
sur microfiche

NOTICE

The quality of this microfiche is heavily dependent upon the quality of the original thesis submitted for microfilming. Every effort has been made to ensure the highest quality of reproduction possible.

If pages are missing, contact the university which granted the degree.

Some pages may have indistinct print especially if the original pages were typed with a poor typewriter ribbon or if the university sent us a poor photocopy.

Previously copyrighted materials (journal articles, published tests, etc.) are not filmed.

Reproduction in full or in part of this film is governed by the Canadian Copyright Act, R.S.C. 1970, c. C-30. Please read the authorization forms which accompany this thesis.

THIS DISSERTATION
HAS BEEN MICROFILMED
EXACTLY AS RECEIVED

AVIS

La qualité de cette microfiche dépend grandement de la qualité de la thèse soumise au microfilmage. Nous avons tout fait pour assurer une qualité supérieure de reproduction.

S'il manque des pages, veuillez communiquer avec l'université qui a conféré le grade.

La qualité d'impression de certaines pages peut laisser à désirer, surtout si les pages originales ont été dactylographiées à l'aide d'un ruban usé ou si l'université nous a fait parvenir une photocopie de mauvaise qualité.

Les documents qui font déjà l'objet d'un droit d'auteur (articles de revue, examens publiés, etc.) ne sont pas microfilmés.

La reproduction, même partielle, de ce microfilm est soumise à la Loi canadienne sur le droit d'auteur, SRC 1970, c. C-30. Veuillez prendre connaissance des formules d'autorisation qui accompagnent cette thèse.

LA THÈSE A ÉTÉ
MICROFILMÉE TELLE QUE
NOUS L'AVONS REÇUE

NL-339 (r. 82/08)

Canada

SOCIAL PROBLEM-SOLVING ABILITY AND ADOLESCENT POPULARITY

by

© Jo-Anne M. Lewicki
B.A. Wilfrid Laurier University 1974

A Thesis
Submitted to the Faculty of Graduate Studies
through the Department of Psychology
in Partial Fulfillment of the
Requirements for the Degree
of Master of Arts at the
University of Windsor

Windsor, Ontario, Canada
1982

772916

ABSTRACT

The purpose of the present study was (a) to obtain normative information for social problem-solving skills in male adolescents, and (b) to determine the relationship between such skills and their peer popularity. Platt and Spivack's MEPS procedure (1975a), a measure of the ability to plan the sequence of acts to reach an interpersonal goal, was administered to the male adolescents in two Grade 7 classes and two Grade 10 classes. A measure of peer popularity was obtained by requiring subjects to rate male classmates for popularity using a nomination method.

The obtained normative data suggested that means-ends thinking, as measured by spontaneous responses to hypothetical dilemmas, shows no age-related improvement past the latency stage. Analysis of the content of the subjects' means-ends thinking indicated that normal adolescents are unlikely to consider either aggression or introspection (e.g., planning) as a step in reaching an interpersonal goal. Regarding means-ends thinking and popularity, no systematic relationships were found. This finding was interpreted as providing further evidence against the hypothesis that there is a direct link between social

cognition and social adjustment. A secondary finding of the present study was that the addition of prompt questions to the testing procedure resulted in significantly improved performance. These findings were discussed in the context of a number of conceptual and methodological issues that require attention in order to allow further explication of the social cognition - social adjustment relationship.

ACKNOWLEDGEMENTS

Appreciation is extended to various personnel of the Windsor Board of Education, who were extremely co-operative in providing a setting for this research.

I would also like to thank my committee members, Dr. M. Bunt and Dr. A. Foster, for their helpful suggestions and comments. I would especially like to extend my appreciation to the chairman of my committee, Dr. A. Kobasigawa, who through his commitment of great time and effort, conveyed to me a respect and enthusiasm for the field of developmental research. It was a stimulating and rewarding experience to work under Dr. Kobasigawa's direction.

A special thank you to Peter O'Neill, who was a model of tolerance and geniality during the many hours he provided direction regarding the computer analysis of this research.

Finally, I would like to acknowledge, and extend a heart-felt 'thank you' to my husband, Ron, for his support and patience over the course of this past year.

TABLE OF CONTENTS

LIST OF TABLES

Chapter I

INTRODUCTION

One of the key components of any theory of psychological adjustment is the quality of social relationships. However, there has been little empirical study of the underlying determinants of an individual's effectiveness in dealing with other people. The present investigation was concerned with one determinant of social effectiveness, namely, interpersonal cognitive problem-solving skills in adolescents. The specific purpose of the study was (a) to obtain normative information for social problem-solving skills in male adolescents, and (b) to determine the relationship between such skills and their peer popularity. In the subsequent sections, pertinent literature to the present investigation will be briefly reviewed. It will be demonstrated that, although research findings to date support the notion that interpersonal cognitive problem-solving skills relate to adjustment across the life span, definitive research of the adolescent is lacking. Furthermore, it will be demonstrated that social effectiveness contributes to level of popularity in adolescents.

Interpersonal Cognitive Problem-Solving Skills

The role of cognitive processes as mediators of social behaviour has recently received renewed interest (see, for example, Flavell, Note 1). Spivack and Shure, and their associates (Spivack & Shure, 1974; Spivack, Platt & Shure, 1976) have developed a model to examine specifically the cognitive processes involved in solving interpersonal problems. Essentially, they suggest that certain interpersonal cognitive problem-solving (ICPS) skills mediate the quality of social adjustment. These skills are conceptualized in terms of the processes involved in solving interpersonal problems, rather than the content of social problem-solving. Further, ICPS skills are learned, are distinct from abstract impersonal intellectual abilities (e.g., I.Q., impersonal problem-solving skills), and differ in their significance to social adjustment as a function of age. Finally, it follows that, if ICPS skills do mediate adjustment, then intervention programs which improve interpersonal problem-solving capabilities should enhance the quality of social adjustment.

ICPS skills involve the capacity to think about personal and interpersonal events. Spivack et al (1976) have differentiated five ICPS skills: (a) sensitivity to the possible existence of interpersonal problems; (b) capacity to generate alternative solutions to social

problems; (c) capacity to conceptualize step-by-step means of moving towards social goals; (d) ability to consider the potential consequences of social acts; and (e) awareness of social and personal motivation in behaviour. Each of these skills involves various subskills necessary to successful social problem-solving. For example, successful means-ends thinking, as conceptualized by Spivack et al (1976), includes the "ability to plan the sequence of potential acts, anticipate what may happen along the way, and, in the process, not lose sight of where they are going and for what reason" (p. 163). The ability to limit the emotions associated with the anticipated gratification, and an appreciation of temporal sequence are also characteristic of successful means-ends thinking. In contrast, poor means-ends thinking is characterized by a focus on feelings (e.g., how good it will feel when the goal is reached), plans that lose direction or become irrelevant, and gaps in the logical development of a plan.

The major method of assessing ICPS skills in individuals has been to elicit verbal responses to hypothetical dilemmas. For example, alternative thinking in young children is operationally defined as the number of relevent solutions produced in response to problem situations of the following type:

> Johnny has been playing with this truck for a long time, all morning, and now Jimmy wants a chance to play with it. What can Jimmy do, or say so he can have a chance to play with this truck? (Spivack et al, 1976, p. 20)

The procedure for measuring means-ends thinking (the MEPS) has been standardized for various groups (Platt & Spivack, 1975a). Basically, the MEPS procedure involves presenting the beginning and the end of a story, and asking the subject to make up the middle of the story. Each story depicts a situation in which a need is aroused at the beginning of the story, and is satisfied at the end of the story. The subject's responses are scored for various elements of means-ends thinking, such as: (a) number of relevant means, that is, sequential instrumental acts that enable the hero to reach the stated goal, or overcome obstacles to his doing so, (b) awareness of obstacles, that is, of events and situations which might prevent the hero from reaching his goal, and (c) awareness of time, that is, indications of the passage of a specific amount of time during the steps taken to reach the goal (Platt & Spivack, 1975a). Most recently, means-ends thinking has been operationally defined as the sum of the measures of these three components. This sum is referred to as the MEPS score (Spivack, Shure, & Platt, Note 2).

Various researchers (e.g., Larcen, Spivack & Shure, Note 3; Platt & Siegel, 1976; Shure, Newman, & Silver, Note 4; Siegel, Platt & Peizer, 1976) have studied the significance of ICPS skills to social adjustment for age groups ranging from preschoolers to adults. The evidence to date supports the notion that ICPS skills are not related to intelligence, and that such skills do significantly influence how effectively individuals handle interpersonal problem situations. For example, in preschool children, alternative thinking appears to be the most significant skill: this skill differentiates children displaying well-adjusted behaviour and those displaying inhibited or impulsive behaviour (Shure, Newman, & Silver, Note 4). For the latency child, alternative thinking continues to be an important skill, but means-ends thinking appears to develop as a mediator of adjustment: means-ends thinking differentiates children judged to be better adjusted and those displaying behavioural difficulties in the regular classroom (Spivack et al, 1976). By the period of adolescence, means-ends thinking emerges as the most significant process related to social adjustment, although several other skills (e.g., alternative thinking, consideration of consequences) also appear to be significant to social adjustment (Platt, Spivack, Altman, Altman, & Peizer, 1974; Spivack & Levine, Note 5). Finally, in adulthood, means-ends thinking, consideration

of causes, and awareness of motivation are all significantly related to adjustment, while the importance of alternative thinking has declined (Platt & Spivack, 1973).

Although such research supports the significance of ICPS skills to social adjustment at various age levels, it must be noted that adolescent social problem-solving ability has received much less attention than has the study of ICPS skills in younger children and in adults. Issues of adolescent social problem-solving requiring further study will be illustrated by describing various aspects of means-ends thinking which have been examined in various age groups.

With reference to middle childhood, number of relevant means, awareness of obstacles, and awareness of time have been found to differentiate not only adjusted and maladjusted children, but well-adjusted and less-adjusted children in the normal population (Spivack et al, 1976, pp. 66-68). However, the research to date regarding adolescents' social problem-solving skills has focused on comparing clinical populations with normal populations. For example, Spivack and Levine (Note 5) compared boys in a residential treatment center with normal adolescents, and Platt et al (1974) compared adolescents hospitalized for psychiatric problems with normal adolescents (average age, 15.83 years). Both of these studies found that maladjusted adolescents show a significantly lower number

of means than do adjusted adolescents. Further, means-ends ability appeared to be unrelated to verbal productivity or motivation. However, these two studies do not provide an extensive analysis of adolescent means-ends thinking. The Spivack and Levine (Note 5) research was conducted before the MEPS procedure had been standardized, and information regarding pertinent characteristics of the sample, such as mean age, is not readily available. Further, neither study provides information regarding awareness of obstacles, and awareness of time. Thus, these two studies are of limited value in contributing to an understanding of adolescent means-ends thinking, and the relationship of such thinking to adjustment.

In comparison, the study of adult means-ends thinking has been more extensive. Research employing the standardized MEPS procedure with various maladjusted and adjusted adult groups has demonstrated that the number of relevant means is an indicator of adjustment, while awareness of obstacles and of time are not significant predictors for adults (Platt & Spivack, Note 6; Platt & Spivack, 1972; Platt & Spivack, 1973). Another important contribution to an understanding of means-ends thinking has been the establishment of norms relating to number of relevant means and MEPS Scores for various adjusted and maladjusted groups. Such norms are available for adults (see Platt & Spivack, 1975a) but not for adolescents.

One aspect of means-ends thinking which has been studied in both the latency and adult stage, but not the adolescent stage, is the content of means-ends thought. During the latency period, well-adjusted children exhibit the ability to see a broader spectrum of possible means. Less-adjusted children are more likely to produce stories more limited to primitive, impulsive, and physically aggressive means (Spivack et al, 1976, pp. 69-70). That less-adjusted individuals have difficulty curbing impulses directed toward the immediate gratification of needs is further supported by the evidence regarding adult means-ends content. Normal adults are more likely than mal-adjusted adults to first use means involving the thinking process (e.g., planning, introspection) in contrast to those involving immediate action (Platt & Spivack, 1974). It appears that the study of the content of means-ends thought can be fruitful in determining the processes involved in successful interpersonal problem-solving.

The foregoing analysis demonstrates several areas of adolescent interpersonal problem-solving requiring examination. Critical to an understanding of the significance of interpersonal problem-solving to adolescent adjustment is the issue of the strength of the relationship between ICPS skills and adjustment within the normal adolescent population. It is not particularly surprising that maladjusted children are deficient in social problem-

solving ability. Children with emotional problems severe enough to require institutionalization are often emotionally and socially immature, and lacking in social skills. Therefore, their social cognitive skills are apt to be below that found in a normal comparison group. If ICPS skills are found capable of differentiating well-adjusted and less-adjusted normal adolescents, the significance of social problem-solving ability to adolescent adjustment would be further supported, providing an empirical rationale for further investigation of the hypothesized mediational relationship between these two variables.

Another area of adolescent social problem-solving requiring attention pertains to psychometric considerations. Adequate normative information is not available for this group. For instance, Platt et al (1974) report only the means and standard deviation for the Number of Relevant Means Score across four stories. Information relating to Number of Relevant Means Score, awareness of obstacles, awareness of time, and content categories employed, for each story, is needed for various groups of normal adolescents. Such data would increase the value of the MEPS procedure in interpreting the responses of "maladjusted" adolescents, and also in establishing the significance of various factors involved in adolescent means-ends thinking.

Since social relationships are of major importance during adolescence (Horrocks, 1976, p. 8), the study of the normal adolescent's social cognitive skills deserves more attention. The adolescent must cope with new patterns of social interaction in relation to both peers and adults. However, some adolescents have particular difficulty in dealing with the myriad forms of social situations which face them every day. Within the normal population, such individuals are often labelled by peers and adults as "hard to get along with," "unpopular," and sometimes, "delinquent." These "unpopular" adolescents may behave in social situations in a manner which is ineffectual in achieving either short-term goals (such as obtaining help) or long-term goals (such as establishing and maintaining social relationships). Although the antecedents contributing to this behaviour are certainly complex, it would be wise to examine the common-sense causal factor expressed by so many despairing teachers and parents in the comment, "He just doesn't think!"

The child who "just doesn't think" in interpersonal situations may be deficient in the ability to employ social cognitive skills. Perhaps he has never had the opportunity to learn such cognitive skills adequately -- or, certain social situations may arouse emotions which interfere with the child's ability to employ cognitive skills efficiently. In either case, the child's

interactions with peers and adults may be frustrating to him, and alienating to others. Thus, it is suggested that adolescents who are deficient in the ability to employ social cognitive skills are unpopular with their peers. This notion will be clarified by an examination of the literature regarding the relationship between adolescent popularity, adjustment, and social effectiveness.

Peer Popularity and Adjustment

Popularity, or peer acceptance, refers to the degree to which a child's peers wish to have some form of associative contact with him. Unpopularity, or peer rejection, implies avoidance of a child by peers or negative evaluation of him or sometimes simply indifference (Hartup, 1970). There are two general methods commonly used to assess peer popularity. The nomination method requires the individual to nominate other persons who fit a certain description. For example, the child may be asked to name his three best friends, or to name those children who the child would prefer to work with. Negative valuations may also be included, for example, the child may be asked who he would least want to work with, or who he would not invite to a party. The data obtained using the nomination method are used to establish various measures of popularity. However, the most common measure consists of the total number of choices received

by an individual across all positive criteria. The second general method of measuring popularity is the roster and rating approach. The child is provided with a list of all of the children in the class, and is asked to rate each child individually on several dimensions, using a 5 or 8 point scale. Typical dimensions include, "How well do you like this person," and "How much do you like to work with this person at school." An individual's average rating across all dimensions is usually identified as his level of popularity. Popularity, as measured by these various sociometric methods, has been shown to be quite stable over time, particularly among older children (Witryol & Thompson, 1953). It would appear, then, that certain fairly stable characteristics and skills of children contribute to their level of popularity.

It has been demonstrated that there is a significant positive correlation between measures of general adjustment and measures of popularity in normal adolescents (Hartup, 1970; Pathak, 1974). In addition, childhood popularity has been shown to be related to indices of later adjustment. For example, Cowen, Pederson, Babigian, Izzo and Trost (1973) found that young adults, previously identified as unpopular children, were disproportionately represented on a community-wide psychiatric register. The personal problems reported by unpopular adolescents are of a more persistent nature than those reported by

popular adolescents. Kuhlen and Bretsch (1947) found that the problems differentiating popular and unpopular adolescent girls were primarily those suggesting a lack of social skills on the part of the unpopular girls. Such problems included "getting acquainted with people," "bashfulness," and "being left out of things." Fewer social problems differentiated boys, although there were indications of subjective social insecurity (e.g., "having no one for a pal"), greater family difficulty, and an undesirable attitude toward school on the part of unpopular males.

Social characteristics correlated with adolescent popularity include sociability (Marks, 1954), helpfulness (Elkins, 1958), and friendliness (Gronlund & Anderson, 1957). Note, however, that the relationship between popularity and social characteristics may be reciprocal. The sociable child will be more popular, and this popularity may result in greater sociability. The unpopular child lacks social skills, and subsequently has less opportunity to develop social skills. This notion is supported by findings indicating that popularity is associated with the effective internalization of social norms. For example, correlates of adolescent popularity include conformity to group mores (Elkins, 1958), sex-appropriate behaviour (Iscoe & Carden, 1961), and sensitivity for the feelings of others (Loban, 1953). Adolescents themselves indicate that social skills relate to

popularity. Feinberg, Smith and Schmidt (1958) found that adolescent males of all social classes say that popular or accepted peers are fair, good company, conscientious, good sports, and able to take a joke, while rejected boys are pesty, noisy, conceited, silly and effeminate. The importance of social skills to adolescent popularity shows some generational consistency: in both 1960 and 1976, being friendly, courteous, and getting along with others were among the most frequently-mentioned criteria for popularity (Sebald, 1981).

Although the bulk of the research regarding the relationship among popularity, social characteristics, and adjustment is correlational in nature, it does appear that there are many characteristics which influence a child's rating of popularity. However, these characteristics and skills can probably be accounted for by a few underlying factors. It is suggested that the ability to solve social problems is one important determinant of the social characterisitcs an individual presents to the world. That social problem-solving ability also relates to adolescent adjustment has previously been suggested. Therefore, it is suggested that popular and unpopular adolescents differ in their ability to solve social problems.

In summary, it appears that ICPS skills may be significantly related to the normal adolescent's social

adjustment, and thus to the level of popularity he attains among his peers. The significance of such a relationship would lie in the potential for intervention and prevention techniques to optimize individual development. In the present context, this would involve training adolescents in problem-solving skills, with the expectation that such training would enable the adolescent to increase his level of social effectiveness, and thus his level of popularity.

However, before such an expectation is warranted, it is necessary to determine first, the normative characteristics of social problem-solving in the adolescent, and second, whether there is a relationship between normal adolescent popularity and social problem-solving ability.

Present Study

The purpose of the present study was to examine normal adolescents' interpersonal problem-solving, as measured by the means-ends procedure (MEPS). From among various ICPS skills, the means-ends task was selected because previous research (Platt et al, 1974; Spivack & Levine, Note 5) has shown that means-ends thinking appears to be the most significant process affecting adolescent adjustment.

The present study collected means-ends thinking normative information for two normal adolescent groups: Grade 7 males and Grade 10 males. Collection of data for the child-adolescent transition stage and for the mid-

adolescent stage provided a comprehensive picture of male adolescent social problem-solving ability. Similar data for female adolescents will be collected at a later date.

The normative data concerned the following aspects of means-ends thinking: a) number of relevant means produced for each story; b) MEPS Scores (means + obstacles + time) for each story; c) percentage of subjects employing means involving physical aggression for each story; and d) percentage of subjects employing means involving planning and introspection for each story.

Additionally, attempts were made to determine the relationship between means-ends thinking and adolescent popularity. If means-ends thinking is significantly related to adolescent social adjustment, then it should be capable of differentiating normal adolescents exhibiting differing levels of success in coping with interpersonal relationships. Thus, the first hypothesis of the present study was that low-popular male adolescents would exhibit a deficiency in means-ends thinking, as reflected in Number of Relevant Means Scores significantly lower than those of high-popular male adolescents. Further, it was hypothesized that unpopular adolescents would exhibit less awareness of obstacles to goal attainment and less awareness of the passage of time, resulting in MEPS scores significantly lower than those of high-popular adolescents. In reference to the content of

means-ends thinking, it was hypothesized that high-popular adolescents would be significantly more likely to use means involving the thinking process, and significantly less likely to use means involving physically aggressive content, than would low-popular adolescents.

Subjects' lower limits of understanding of social problem-solving skills was also assessed. The MEPS procedure assesses subjects' spontaneous responses to rather broad directives (e.g., "make up the middle of the story"). It is possible that adolescents posseas a better understanding of social problem-solving skills than is tapped by the MEPS procedure. Further, it is possible that high-popular and low-popular adolescents differ in their ability to spontaneously produce appropriate responses to the MEPS task. The present study introduced prompt questions designed to promote more reflective responding, and examined which type of responding - spontaneous or prompted - is a better predictor of popularity.

Chapter II

METHOD

Subjects

Grade 7 subjects were recruited from an elementary school which services a primarily middle-class population. Although efforts were made to insure the participation of all of the male children in the two Grade 7 classes at the school, three of the 13 male children in one class, and one of the 16 male children in the other class could not be interviewed. Thus, a total of 25 Grade 7 male students participated in the present study.

Grade 10 subjects were recruited from a secondary school which offers an academic program to a primarily middle-class population. Therefore, male adolescents favoring or requiring a vocationally-oriented secondary education were not represented in the present study. The Grade 10 subject pool consisted of all students enrolled in either of the two male physical education classes for that grade. Twenty-two of the 23 students enrolled in the one class, and 19 of the 21 students enrolled in the second class, participated in the present study, providing a total of 41 Grade 10 subjects.

Since the present study was conducted close to the end of the school year, it was assumed that all of the children had had sufficient opportunity to become acquainted with the other members of their class. Discussion with the appropriate teachers supported this assumption.

Materials

The rating of popularity was collected by means of a nomination method. An individual sheet for each student (see Appendix A) listed the names of all the male students in that class. This list was followed by instructions to use only the listed names to provide three answers to each of seven questions.

The seven questions were designed to elicit each child's ratings of the level of popularity attained by other members of the class. The first four questions were based on Northway's (1952/1967) suggestions for construction of sociometric criteria. Since the purpose of the present procedure was to obtain a general rating of popularity, rather than to examine patterns of interaction within the group, these four questions were worded such that each subject was asked to predict which students would be most likely to be chosen by the group as a whole. These questions inquired as to which students: a) would be the first to be invited to a party, b) would be most likely to be elected as Class Representative,

c) most people would want to work with on a group project, and d) would be invited to go on a camping trip. The fifth question (which students are likely to consider other people's feelings and problems) was designed to investigate one particular potential contributer to popularity, namely the ability to take the role of another. The last two questions were included as relatively transparent indicators of popularity: Question 6 (best liked in the class) again asked the subject to judge the evaluations of the whole group, and Question 7 (your best friends) was directed at the subject's personal selection (see Appendix A).

A second rating form was developed to elicit teachers' global ratings of the subjects' social adjustment (see Appendix B). This form requested the teachers to nominate the children who appeared to be the most a) withdrawn, b) impulsive, and c) socially adjusted. Teachers could select any number of students, to a maximum of five, for each category.

The measure of means-ends thinking was obtained by administering Stories #2, 3, 4, 7, 8, and 9, from the MEPS procedure (see Appendix C). These stories were chosen because they involve situations which are relevant to the typical adolescent: a) resolving an argument with a girlfriend (#2), b) finding a lost watch (#3), c) making friends in a new neighbourhood (#4),

d) obtaining money (#7), e) regaining estranged friends (#8), and f) getting even with someone (#9). These six stories have previously been used with adolescent populations (Platt et al, 1974; Spivack & Levine, Note 5).

The subjects' lower limits of understanding of social problem-solving skills was determined by the administration of the following prompt questions:

1. Tell me how the story started.
2. Tell me how I said the story ended.
3. What exactly did I ask you to do?
4. Did George have a problem at the beginning of the story? Why?
5. Can you think of anything else George should have thought about before going about getting even? ... Good. Anything else?
6. Now, I want you to tell me again how George went about getting even. This time I want you to make sure you tell me every step George would have to take to get to his goal of getting even and feeling happy about it. I also want you to think about any problems that could come up while George is trying to get even, and what he would do to solve the problems so he could reach his goal of getting even. So, tell me each step to get even, and any problems, and what he could do to solve the problems.

Procedure

First, the popularity measure was administered to each class as a group. The homeroom teachers administered the questionnaire for the Grade 7 level, and the Physical Education teacher, for the Grade 10 groups. The subjects were informed that the researcher was interested in how people get along with each other. The teacher also told the subjects that no one besides the researcher would ever see the answers that were to be written, and that the subjects were not to put their names on the questionnaire sheet. Each male student was provided with a copy of the questionnaire, and ample time was allowed for completion of the form. The teacher stressed that every blank must be filled, and he discouraged any conversation while the forms were being completed.

Approximately one week later, the MEPS procedure was administered individually to each student by the researcher. After briefly establishing rapport with the subject, the researcher read standard intructions (Appendix C) and ensured that the subject clearly understood the instructions. Each story stem was read to the subject once and his response was transcribed. A cassette recorder was also in operation. After the subject had responded to the last story, the researcher presented the subject with the prompt questions (see page 21) and recorded the responses. All MEPS interviews were

conducted in a private setting, and averaged 20 minutes in duration.

The teacher rating form (Appendix B) was completed during the same week that the popularity ratings were collected. The homeroom teachers, for the Grade 7 subjects, and the Physical Education teacher, for the Grade 10 subjects, were asked to fill in the form at their convenience.

Scoring

Popularity. A sociometric matrix was constructed from the questionnaire data. For each child, the number of choices received on each criteria, and also across all seven criteria, was computed. The correlations of the number of choices for each criteria with the total number of choices received ranged from .20 to .94 (see Appendix D), with 71 per cent of the correlations over .60. Therefore, the total choices received for each subject was chosen to be the appropriate index of popularity for the purpose of the present study.

An individual's raw popularity score is related to the size of his group. For instance, two children may receive the same raw score, but the meaning of that score in terms of level of popularity may differ as a function of the number of children providing choices. To correct this between-group difference, the raw popularity scores were transformed to t-scores for each group. A ranking of the standardized popularity scores was then established, and

three popularity groups were formed for each grade: high-popular (upper quartile), average-popular (quartile around the mean), and low-popular (lower quartile). There were seven subjects in each of the Grade 7 popularity groups, and 11 subjects in each of the Grade 10 popularity groups. Only those subjects who had completed the MEPS interview were included in these groupings. Interestingly, all seven of the children who did not receive permission to participate in the MEPS interview session would have been included in the low-popular groupings.

MEPS. Regarding the MEPS procedure, transcripts of all responses were established from reference to the long-hand notes and the tape recordings. Following the directives provided in the MEPS Manual (Platt & Spivack, 1975a), and the Means-Ends Problem Solving Stimuli and Scoring Procedures Supplement (Spivack et al, Note 2), each story was scored for Number of Relevant Means (i.e., sequential instrumental acts that enable the hero to reach the stated goal), Number of Obstacles (i.e., events and situations which might prevent the hero from reaching his goal), and presence or absence of an awareness of time (i.e., indications of the passage of a specific amount of time during the steps taken to reach the goal). Each relevant means generated by the subject was placed in one of a number of empirically-derived categories (e.g., introspection, asking for help). Generally, the means

categories of Platt and Spivack (1975a) were utilized; however, in a few cases, the nature of the responses suggested the inclusion of additional categories. In such cases appropriate categories were generated through the collaborative efforts of two scorers. Appendix E provides examples of means categories, and also the criteria for scoring obstacles and time. Two categories of the relevant means were of particular interest for the present study: (a) Introspective means (defined as relevant means involving the thinking process, e.g., "First he planned what he would do"), and (b) Aggressive means (defined as relevant means involving physical aggression, e.g., "He beat him up").

The Number of Relevant Means Score for each story consisted of the sum of the relevant means produced for that story. The Number of Obstacles Score was similarly derived. The Awareness of Time Score for each story was either "1" (awareness present) or "0" (awareness absent). The MEPS Score for each story consisted of the sum of the Number of Relevant Means, the Number of Obstacles, and the Awareness of Time. Scores were also summed across stories, to establish Total Number of Relevant Means, Total Number of Obstacles, Total Awareness of Time, Total MEPS Scores, Total Introspective Means, and Total Aggressive Means.

Of the 396 protocols, 120 (30%) were scored by two judges. Interjudge reliability for each story was calculated by dividing the number of instances in which the coders agreed on the use of particular categories by the sum of the agreements plus the disagreements regarding the use of the categories. The interjudge reliability scores for various stories ranged from 75% to 95% (see Appendix F).

Regarding the prompt questions, any additional Relevant Means produced to Question 6 (see page 21) were added to the Number of Relevant Means Score for Story 9 (getting even), to produce a new score: Prompted Number of Relevant Means. Also credit for Prompted Introspection was given to those subjects who generated a means involving introspection in response to Question 6, but who had not done so in response to the original Story 9 stem.

Chapter III

RESULTS

There were three major dependent measures in the present study: (a) Number of Relevant Means Scores, (b) MEPS Scores (Relevant Means + Obstacles + Time), and (c) Content. The findings are organized in this chapter according to each of these dependent measures.

Number of Relevant Means

Six stories combined. Previous researchers (e.g., Platt & Spivack, 1974) have shown that significant differences in means-ends thinking observed between "clinical" and "control" groups are not accounted for by any one or only a few stories. Accordingly, analyses of Number of Relevant Means Scores (and MEPS Scores) have generally been confined to that of total scores across all stories administered. Consequently, total scores across the six stories used in the present study will be examined first.

The mean total number of relevant means for each of the three popularity groups at each grade level is summarized in the upper half of Table 1. A 3 (popularity) x 2 (grade) analysis of variance was performed on these

TABLE 1

Means of the Total Number of Relevant Means as a Function of Grade and Popularity

Across Six Stories

	Popularity			
	High	Average	Low	Total
Grade 7	16.57	13.29	13.86	14.57
Grade 10	14.64	12.91	16.00	14.52
Total	15.39	13.06	15.17	14.54

Across Four Stories

	Popularity			
	High	Average	Low	Total
Grade 7	11.15	8.58	8.58	9.43
Grade 10	9.09	7.64	10.09	8.94
Total	9.89	8.00	9.50	9.13

data. The analysis revealed that the main effect grade was not significant, F (1, 48) < 1, indicating that the seventh graders generated as many relevant means as the tenth graders. Similarly, the main effect of popularity was nonsignificant, F (2, 48) = 1.42, suggesting that highly popular adolescents did not generate more strategies than less popular adolescents. Popular seventh graders tended to indicate more relevant means than less popular seventh graders, whereas less popular tenth graders tended to indicate more strategies than highly popular tenth graders (see Table 1). However, the interaction of grade and popularity was not statistically reliable, F (2, 48) < 1.

Four stories combined. While examining the content of the stories, it became apparent to us that two of the six stories used in this study (#3, finding a watch, and #7, obtaining money) do not deal with interpersonal problems directly. Recently, Spivack and his associates (Note 2) also have suggested that these two stories no longer be used to measure means-ends thinking. Accordingly, the mean total Number of Relevant Means across four stories (Numbers 2, 4, 8, and 9) for each popularity group at each grade level is reported in the lower half of Table 1. The analysis performed on these data revealed that the main effect of grade was nonsignificant, F (2, 48) < 1. The main effect of popularity approached significance,

F (2, 48) = 1.74, $p < .12$. Inspection of Table 1 reveals that children of average popularity generated fewer relevant means than children of either high or low popularity. The grade x popularity interaction failed to reach the significant level, F (2, 48) = 1.74.

Individual stories. Although it is understood that analyses of individual stories may result in significant results on the basis of chance alone, the present study performed such analyses in the interest of obtaining some indication of any differences in the various stories' ability to differentiate various groups (e.g., grade, popularity). The Number of Relevant Means Scores for each story are summarized in Table 2. None of the individual analyses of variance showed statistical significance; however, there were some interesting trends. For the making-friends story (#4), Grade 7 adolescents generated more relevant means than did Grade 10 adolescents, F (1, 48) = 2.04, $p < .16$. Examination of the interaction of popularity and grade for Story #4 indicates that the data for this story conforms to the pattern shown across all six stories: popular seventh graders tended to indicate more relevant means than less popular seventh graders, whereas less popular tenth graders tended to indicate more strategies than highly popular tenth graders, F (2, 48) = 2.05, $p < .14$. For the resolving-an-argument story (#2), the trend was for adolescents of

TABLE 2

Means of the Number of Relevant Means for Each Story

	Popularity			
	High	Average	Low	Total
Story #3 - Finding a watch				
Grade 7	3.00	2.14	2.43	2.52
Grade 10	2.82	2.55	3.09	2.82
Total	2.89	2.39	2.83	2.68
Story #4 - Making friends				
Grade 7	3.00	2.43	2.29	2.57
Grade 10	2.18	1.82	2.64	2.21
Total	2.50	2.06	2.50	2.37
Story #2 - Resolving an argument				
Grade 7	2.86	2.14	2.29	2.43
Grade 10	2.91	2.36	3.09	2.79
Total	2.89	2.28	2.78	2.63
Story #7 - Obtaining money				
Grade 7	2.43	2.57	2.86	2.62
Grade 10	2.73	2.73	2.82	2.76
Total	2.61	2.67	2.83	2.69
Story #8 - Regaining friends				
Grade 7	2.29	1.71	2.14	2.05
Grade 10	2.00	2.00	2.18	2.06
Total	2.11	1.89	2.17	2.06
Story #9 - Getting even				
Grade 7	3.00	2.29	1.86	2.38
Grade 10	2.00	1.45	2.18	1.88
Total	2.39	1.78	2.06	2.07
Story #9 - Prompted				
Grade 7	3.71	3.14	3.14	3.33
Grade 10	3.00	2.55	3.27	2.94
Total	3.28	2.78	3.22	3.09

average popularity to achieve lower Relevant Means Scores than either high or low popular adolescents, F (2, 48) = 2.01, $p < .15$. Finally, for the getting-even story (#9), Grade 7 adolescents tended to generate more relevant means than Grade 10 adolescents, F (1, 48) = 2.08, $p < .16$.

Prompted versus spontaneous responding. Table 2 also provides the Number of Relevant Means Scores for the getting-even story (#9) under the prompted condition. A 3 (popularity) x 2 (grade) x 2 (prompted versus spontaneous responding) analysis of variance, with repeated measures on the last factor, was performed on the data from the spontaneous responses to Story #9, and the data from the prompted responses to this story. The analysis indicated that the adolescents generated significantly more means under the prompted condition than they did under the spontaneous condition, F (1, 48) = 70.25, $p < .0001$. None of the other main effects, and none of the interactions, were significant.

Appendix G provides normative data for Relevant Number of Means Scores for the full sample of 66 adolescents.

MEPS Scores

Six stories combined. The mean Total MEPS Scores for each of the three popularity groups at each grade level is summarized in the upper half of Table 3. A 3 (popularity) x 2 (grade) analysis of variance revealed no significant main effects, indicating that the seventh

TABLE 3

Means of the Total MEPS Scores

as a Function of Grade and Popularity

Across Six Stories

	Popularity			
	High	Average	Low	Total
Grade 7	23.14	16.43	18.29	19.29
Grade 10	18.64	16.36	20.00	18.33
Total	20.39	16.39	19.33	18.70

Across Four Stories

	Popularity			
	High	Average	Low	Total
Grade 7	14.86	9.86	10.71	11.81
Grade 10	10.91	9.00	12.36	10.76
Total	12.44	9.33	11.72	11.17

graders performed as well as tenth graders on this combined measure of means-ends thinking, F (1, 48) < 1, and that highly popular adolescents did not produce more relevant means, obstacles, and references to time than did less popular adolescents, F (2, 48) = 1.54. As was the case for Total Number of Relevant Means Scores, popular seventh graders tended to achieve higher MEPS Scores than less popular seventh graders, and less popular tenth graders tended to achieve higher MEPS scores than highly popular tenth graders (see Table 3). However, the interaction of grade and popularity was not statistically reliable, F (2, 48) < 1.

Four stories combined. The mean MEPS Scores across four stories (Numbers 2, 4, 8, and 9) for each popularity group at each grade level are reported in the lower half of Table 3. In this case, the analysis of variance revealed that the main effect of grade was not significant, F (1, 48) < 1, while the main effect of popularity approached significance, F (2, 48) = 2.76, $p < .07$. The Duncan's Multiple Range Test indicated that highly popular adolescents ($\bar{X}$ = 12.44) produced significantly higher MEPS Scores than average-popular adolescents ($\bar{X}$ = 9.33), but the highly-popular adolescents did not perform significantly better than low-popular adolescents ($\bar{X}$ = 11.72). The interaction of grade and popularity was only marginally significant, F (2, 48) = 1.95,

$p < .15$, showing the same pattern of responses indicated for the six story total.

Individual stories. The mean MEPS Scores for each story are summarized in Table 4. The individual analyses revealed no significant effects for four of the stories (Numbers 3, 7, 8, and 9). For the making friends story (#4), the main effect of grade was significant, F (1, 48) = 4.49, $p < .04$, indicating that seventh graders achieved higher MEPS Scores for Story #4 than did tenth graders. However, the grade x popularity interaction was also significant, F (2, 48) = 3.09, $p < .05$, thus indicating that highly popular seventh graders achieved higher MEPS Scores than low-popular seventh graders, whereas less popular tenth graders achieved higher MEPS Scores than highly popular tenth graders (see Table 4). For the resolving-an-argument story (#2) only the main effect of popularity approached significance, F (2, 48) = 2.48, $p < .10$, indicating that average popular adolescents tended to produce lower MEPS Scores for Story #2 than either highly popular or unpopular adolescents (see Table 4).

Prompted versus spontaneous responding. Table 4 also provides the MEPS Scores for the getting-even story (#9) under the prompted condition. A 3 (popularity) x 2 (grade) x 2 (prompted versus spontaneous responding) analysis of variance, with repeated measures on the last

TABLE 4

Means of the MEPS Scores for Each Story

	Popularity			
	High	Average	Low	Total
Story #3 - Finding a watch				
Grade 7	3.86	2.86	3.14	3.29
Grade 10	3.55	3.37	3.82	3.58
Total	3.67	3.17	3.56	3.45
Story #4 - Making friends				
Grade 7	4.00	2.86	2.57	3.14
Grade 10	2.36	2.09	2.91	2.46
Total	3.00	2.39	2.78	2.77
Story #2 - Resolving an argument				
Grade 7	3.71	2.57	3.29	3.19
Grade 10	3.64	2.82	3.91	3.45
Total	3.67	2.72	3.67	3.34
Story #7 - Obtaining money				
Grade 7	4.43	3.71	4.43	4.19
Grade 10	4.18	4.00	3.82	4.00
Total	4.28	3.89	4.06	4.09
Story #8 - Regaining friends				
Grade 7	3.29	2.00	2.71	2.67
Grade 10	2.36	2.27	2.82	2.49
Total	2.72	2.17	2.78	2.57
Story #9 - Getting even				
Grade 7	3.86	2.43	2.14	2.81
Grade 10	2.55	1.82	2.72	2.36
Total	3.06	2.06	2.50	2.56
Story #9 - Prompted				
Grade 7	5.86	4.71	4.86	5.14
Grade 10	4.73	4.09	5.00	4.61
Total	5.17	4.33	4.94	4.83

factor, was performed on the data from the prompted responses and the data from the spontaneous responses to Story #9. The analysis revealed that adolescents achieved significantly higher MEPS Scores under the prompted condition than under the spontaneous condition, F (1, 48) = 114.28, $p < .0001$. However, none of the remaining effects were statistically significant, $F < 1$ in all cases.

Appendix H provides normative data regarding MEPS Scores for the full sample of 66 male adolescents.

Introspective Content

Two aspects of the content of strategies, aggression and introspection, were of particular interest in the present study. However, the number of aggressive means generated by the subjects was extremely sparse[1], and therefore, the analysis of aggressive content was dropped from the current study. Regarding introspective content, we were interested in examining the number of children who spontaneously suggested introspective means, as defined in the Scoring Section (pg. 25). Introspective content was examined by performing a 2 (grade) x 3 (popu-

[1]Only one story (getting even, #9) was apt to promote aggressive responses. Even in this case, few children produced an aggressive mean: for Grade 7, five aggressive means were suggested, and at the Grade 10 level, eight aggressive means were suggested.

larity) categorical analysis of variance on the number of subjects generating an introspective means for each story, and across stories[2]. Since the cell frequencies for Introspective Means were rather sparse, the data matrix was doubled, and .2 was added to each cell, before the categorical analysis was applied.

Six stories combined. The upper half of Table 5 indicates the proportion of adolescents who provided an introspective response to at least one out of six stories, as a function of grade and popularity. The categorical analysis revealed that the effect of grade was not significant, $\chi^2 = .05$, thus demonstrating that Grade 7 adolescents were as likely to provide introspective responses as were Grade 10 adolescents. The main effect of popularity approached significance, $\chi^2 = 4.15$, $p < .12$. The categorical analysis revealed that this effect was due to the greater likelihood of unpopular children producing introspective responses as compared to highly popular children. This pattern was evident in both grades, and the interaction of grade and popularity was not significant, $\chi^2 = 3.15$.

---

[2]The FUNCAT (Categorical Analysis of Variance) Procedure was employed. Since this computer program uses frequency scores and uses a categorical classification technique, the procedure assumes approximation of the chi square distribution as the most appropriate distribution for deriving an error term. This technique also allows for the generation of error terms to test interactions (Helwig & Council, 1979).

TABLE 5

Proportion of Subjects Providing an Introspective Response to One or More Stories

Of a Total of Six Stories

	Popularity			
	High	Average	Low	Total
Grade 7	.71	1.00	.86	.86
Grade 10	.82	.82	1.00	.88
Total	.78	.89	.94	.87

Of a Total of Four Stories

	Popularity			
	High	Average	Low	Total
Grade 7	.71	.86	.71	.76
Grade 10	.73	.82	.91	.82
Total	.72	.83	.83	.80

Four stories combined. The lower half of Table 5 indicates the proportion of adolescents who provided an introspective response to at least one out of four stories. The categorical analysis revealed no significant effects: χ^2 = .60 for grade, χ^2 = 1.72 for popularity, and χ^2 = 1.71 for the interaction of grade and popularity.

Individual stories. Table 6 provides a summary of the proportion of adolescents providing an introspective mean to each of the six stories. Only the regaining-friends story (#8) revealed no significant effects. For the resolving-an-argument story (#2) and the obtaining-money story (#7), the main effect of grade was significant, χ^2 = 4.36, $p < .04$ and χ^2 = 5.10, $p < .02$ respectively. However, for Story #2 Grade 10 adolescents were more likely to produce introspective responses than were Grade 7 adolescents, while for Story #7, seventh graders were more likely to produce such responses than were tenth graders. For both the finding-a-watch story (#3) and the making-friends story (#4), the interaction of grade and popularity was significant, χ^2 = 5.74, $p < .06$, and χ^2 = 6.95, $p < .03$ respectively. In both cases, at the tenth grade level, unpopular children were the most likely to produce an introspective means, and average children were the least likely to do so. At the seventh grade level, average-popular adolescents were

TABLE 6

Proportion of Subjects Providing an Introspective Response for Each Story

	Popularity			
	High	Average	Low	Total
Story #3 - Finding a watch				
Grade 7	.29	.43	.14	.29
Grade 10	.27	.18	.46	.30
Total	.28	.28	.33	.30
Story #4 - Making friends				
Grade 7	.00	.29	.14	.14
Grade 10	.27	.09	.46	.27
Total	.17	.17	.33	.22
Story #2 - Resolving an argument				
Grade 7	.00	.43	.29	.24
Grade 10	.27	.46	.73	.49
Total	.17	.44	.56	.39
Story #7 - Obtaining money				
Grade 7	.29	.29	.43	.33
Grade 10	.27	.09	.09	.15
Total	.28	.17	.22	.22
Story #8 - Regaining friends				
Grade 7	.57	.43	.43	.48
Grade 10	.55	.27	.36	.40
Total	.56	.33	.39	.43
Story #9 - Getting even				
Grade 7	.29	.71	.00	.33
Grade 10	.18	.27	.46	.30
Total	.22	.44	.28	.32
Story #9 - Prompted				
Grade 7	.57	.71	.14	.48
Grade 10	.18	.55	.55	.42
Total	.33	.61	.39	.41

more likely than high or low popular subjects to produce an introspective response.

Spontaneous versus prompted responding. Table 6 also provides a summary of the proportion of adolescents who generated an introspective means to the getting-even story (#9) after prompting. The categorical analyses indicated that the main effect of popularity was significant for both the spontaneous and the prompted responses to Story #9, $\chi^2 = 6.33$, $p < .04$, and $\chi^2 = 7.03$, $p < .03$ respectively. However, for both of these conditions, average popular adolescents were more likely to produce an introspective response than either popular or unpopular adolescents. The interaction of grade and popularity was also significant for both the spontaneous and the prompted responses to Story #9, $\chi^2 = 6.49$, $p < .04$ and $\chi^2 = 10.65$, $p < .005$ respectively. For seventh graders under the spontaneous condition, the highly popular adolescents were more likely to produce an introspective response than were the unpopular adolescents, although average-popular adolescents were the most likely of all to produce such a response. At the Grade 10 level, the low-popular children were most likely to produce an introspective response spontaneously. However, after prompting, both popular and unpopular seventh grade children were more likely to produce an introspective response than before prompting, although average children were still the most

likely to do so. At the Grade 10 level, prompting resulted in an equal tendency to produce an introspective mean in low-popular and average-popular adolescents, this tendency being greater than that of the highly popular children (see Table 6).

Appendix I provides normative data regarding the introspective means for the full sample of 66 subjects.

Additional Analyses

Appendix J provides the results of a 2 (grade) x 2 (teachers' ratings of adjustment) analysis of variance. Since this analysis suggested no relationships between teachers' ratings of students' adjustment and means-ends thinking, no further analyses of this aspect will be reported.

Appendix K provides the correlations of the Number of Relevant Means Scores for each story and of the MEPS Scores for each story.

Chapter IV

DISCUSSION

The purpose of the present study was (a) to obtain normative information for social problem-solving skills in adolescents, and (b) to determine the relationship between such skills and their peer popularity. The following discussion will address the meaning of the obtained results as they relate to the purpose of the present study, and to existing research on ICPS skills. The limitations of the current study will be considered, and suggestions will be offerred as to appropriate directions for future research regarding social problem-solving skills.

Normative Information

Conceptual advance regarding the contribution of ICPS skills to healthy functioning across the life-span must be preceded by a delineation of the typical nature of social problem-solving skills at various developmental levels. Accordingly, the present study examined one component of social problem-solving ability, namely means-ends thinking, as it is evidenced by the normal male adolescent at two grade levels, namely

Grade 7 and Grade 10.

The normative information collected in the present study suggests that means-ends thinking is quite stable across the adolescent period. One aspect of means-ends thinking as assessed by Platt and Spivack's (1975a) MEPS procedure is concerned with a quantitative measure of the strategies employed to reach a goal. The present study found no difference in the Total Number of Relevant Means, or in the Total MEPS Scores (relevant means + obstacles + time), achieved by seventh grade and tenth grade adolescents. The analyses for individual stories indicated only one significant difference - seventh graders achieved higher MEPS Scores on the making-friends story than did tenth grade adolescents. Thus, one conclusion derived from the present data is that individuals at the child-adolescent stage and at the mid-adolescent stage do not differ regarding a quantitative measure of means-ends thinking.

Another aspect of means-ends thinking which may be derived from the MEPS procedure is concerned with a measure of the quality, or actual content, of the strategies employed to reach an interpersonal goal. The present study demonstrated that male adolescents are unlikely to suggest means that involve aggressive actions: only 20% of seventh grade and tenth grade adolescents generated this type of mean. This finding may reflect

the adolescent's ability to employ methods other than aggressive acts to achieve their interpersonal goals (e.g., methods involving verbal skills such as discussion), or it may simply reflect the adolescent's awareness of the inappropriateness of suggesting aggressive acts in an interview situation.

Regarding introspective content, slightly more Grade 10 adolescents than Grade 7 adolescent produced a "thinking" mean to at least one story, although this difference is not significant. The analyses of the introspective responses to individual stories did show some significant differences, but these were not systematic. For most of the stories, only about one third of the adolescents interviewed were apt to suggest that the hero of the story plan or think before acting. It is apparent that most adolescents are not likely to view introspection as a discrete, first step in solving a social problem. It may be concluded that, regardless of grade level, normal adolescents are not apt to consider introspection as a step in achieving a goal, and they are even more unlikely to suggest using an aggressive response as a strategy.

The utility of the collected normative data would be enhanced if it allowed for comparison of normative I.C.P.S. functioning at differing developmental levels. Table 7 provides a comparison of the mean Number of Relevant

TABLE 7

Summary of Research: Number of Relevant Means for Various Normal Groups

Sample	# of Stories Administered	Mean # of Relevant Means per Story	Researcher
Latency			
Grade 3	2	1.49	Weissberg et al, 1981b
8 years Males only	5	1.00	Walters & Peters, Note 8
10 years Males only	5	2.10	Walters & Peters, Note 8
12 years Males only	5	2.00	Walters & Peters, Note 8
10-12 years Lower-class	6	2.17	Shure & Spivack, 1972
10-12 years Middle-class	6	3.36	Shure & Spivack, 1972
Adolescence			
Grade 7 - males	6*	2.38	Present study
Grade 7 - males	4**	2.30	Present study
Grade 7 - males	1 - prompted	3.33	Present study
Grade 8	4	2.96	Marsh et al, 1980
Grade 10 - males	6*	2.36	Present study
Grade 10 - males	4**	2.21	Present study
Grade 10 - males	1 - prompted	2.94	Present study
16 years old Males only	4	2.22	Platt et al, 1974
Adults			
Hospital Employees	6*	1.28	Platt & Spivack 1975a
Hospital Employees	4**	1.38	Platt & Spivack 1975a
University Students	6*	2.11	Platt & Spivack 1975a
University Students	4**	2.13	Platt & Spivack 1975a

* Stories #3, 4, 2, 7, 8, & 9.

** Stories 4, 2, 8, & 9.

Means generated by the present sample and by various other samples studied by other researchers. Examination of Table 7 suggests that there is no age-related improvement in the quantitative aspect of means-ends thinking, as measured by spontaneous responses to hypothetical dilemmas, past the latency stage. For instance, the average Number of Relevant Means for university students (2.11) does not appear different than that obtained by Grade 7 students (2.38) or Grade 10 students (2.36). Whereas the data summarized in Table 7 may suggest that means-ends thinking is well-established by late-latency, this conclusion requires further empirical validation. The studies reported in Table 7 varied in the administration and scoring procedures used to measure means-ends thinking. For example, Weissberg, Gesten, Rapkin, Cowen, Davidson, Flores de Apodaca, and McKim (1981b) did not utilize the story stems provided by Platt and Spivack (1975a), and also modified the scoring criteria. Indeed, Platt and Spivack themselves have modified their scoring procedures over the last six years; the Scoring Supplement (Spivack et al, Note 2) suggests several changes in the scoring procedure. It is apparent that an accurate picture of normative means-ends thinking throughout childhood will require collection of age-related data in a reliable manner.

The present study also examined the effect of providing standard prompt questions on subsequent means-ends thinking performance. For the quantitative measures of means-ends thinking, the present data indicated that Grade 7 and Grade 10 adolescents did not differ in their performance under either the spontaneous or the prompted condition. For the one qualitative measure of means-ends thinking examined under both types of responding (introspection), providing prompt questions only slightly changed the pattern of the interaction between grade and popularity. Although the present study did not find that prompting resulted in any changes in the relationship between grade and means-ends thinking, it is suggested that the effect of prompting on means-ends performance requires further study. The MEPS procedure attempts to measure the number of sequential steps generated by an individual. In scoring protocols, it is sometimes difficult to determine whether the means provided by a child are actually logically-developed, sequential steps resulting in an integrated set of strategies to reach a goal[3]. The inclusion of further questioning after the child has produced a story may enable the interviewer to better determine

---

[3]Consider: (a) He broke the window and then (b) he hit him. From a subject's viewpoint, does (a) logically lead to (b), or are (a) and (b) unrelated strategies?

the degree of integration of the child's responses. It is possible that age differences in means-ends thinking may be found when the scoring of relevant means allows for a more precise determination of the logical sequence of an individual's thinking. The importance of determining the meaning behind a child's verbalizations will be further considered in the section "Methodological Issues".

Means-Ends Thinking and Popularity

Spivack and Shure (1976) have suggested that social problem-solving ability mediates the quality of social adjustment. Support for this notion would start with the demonstration that social problem-solving ability differentiates not only well-adjusted and maladjusted groups, but also well-adjusted and less-adjusted groups within the normal population. That social problem-solving ability differentiates well-adjusted and maladjusted groups at various developmental levels has been demonstrated (Spivack et al, 1976). There has also been support for the position that social problem-solving ability differentiates well-adjusted and less-adjusted groups within the normal population at some developmental levels, specifically, early childhood (Shure, Newman, & Silver, Note 3) and latency (Spivack et al, 1976). The present study examined the ability of one component of social problem-solving ability, namely means-ends thinking, to differentiate low-popular and high-popular groups within

a sample of normal male adolescents. The level of popularity attained by an adolescent was considered to be generally reflective of his social effectiveness, particularly for those subjects represented in the upper and lower quartiles of the popularity distribution.

The results of the present study did not support the mediation hypothesis suggested by Spivack and Shure's data (e.g., Spivack et al, 1976). Overall, high-popular and low-popular male adolescents did not significantly differ for either of two quantitative measures of means-ends thinking: production of relevant means to hypothetical dilemmas, and awareness of obstacles and of the passage of time. The analyses of individual stories indicated only one significant difference - for the making-friends story, popular seventh grade children achieved higher MEPS scores than unpopular seventh grade children, and unpopular tenth grade children achieved higher MEPS scores than popular tenth grade children. The findings of the present study regarding the relationship between popularity and means-ends thinking will be discussed as they relate to both the conceptual and the methodological issues involved in examining the relationship between social problem-solving skills and social adjustment.

Conceptual Issues

Conceptually, it seems appropriate to assume that the manner in which an individual thinks about his social world affects the way in which he interacts with his social world. More specifically, one would expect that the maturity of the processes available to solve interpersonal problems would relate to the individual's actual success in dealing with interpersonal problems. This is the assumption which has formed the basis for the research dealing with problem-solving skills. Of import to conceptual clarification is the problem of the exact nature of the hypothesized relation. That is, should social problem-solving ability be considered to be a cause of social adjustment, should it be considered as a necessary, but not sufficient basis for social adjustment, or should it be considered as a factor which is of import to social adjustment only under certain conditions?

An examination of the research to date relevant to this issue indicates that a definitive picture of the nature of the social problem-solving - adjustment relationship has not emerged. For example, the finding that social problem-solving ability differentiates those individuals at the extremes of the adjustment continuum (Spivack et al, 1976) is not indicative of a causal link, and may not even necessarily reflect the role of ICPS abilities as a necessary basis for social adjustment. It

is certainly plausible that some other factor (e.g., environmental history) underlies both the ICPS ability and the level of adjustment displayed by an individual. If ICPS abilities were demonstrated to differentiate well-adjusted and less-adjusted groups within the normal population, then one would have some support for further consideration of ICPS ability as a basis for social adjustment. Attempts to demonstrate such a relation have presented a confusing picture. For example, Krasnor and Rubin (Note 7) demonstrated that preschoolers' ICPS ability is not related to either actual behaviour, or to a rating of adjustment. Walters and Peters (Note 8) found that aggressive children and nonaggressive children at the latency stage did not differ in their means-ends ability. Finally, the results of the present study suggest that means-ends thinking does not differentiate among normal adolescents with differing levels of social effectiveness. Even when adolescents are prompted to promote optimal performance, differences in ICPS abilities are not found.

Thus, the results of investigations of ICPS skills in normal groups at various age levels suggest that the ability to produce solutions to hypothetical dilemmas may not be related to level of adjustment in the normal population. A more powerful test of the social cognition - social adjustment relationship may involve examing the

effects of ICPS training on subsequent level of adjustment. However, evaluation of ICPS training programs has produced conflicting results. For instance, Spivack and Shure (1974) found that such training is effective in increasing both problem-solving ability and level of adjustment in preschool children. Further, the finding that those children who exhibited the greatest increase in problem-solving ability also showed the most behavioural change appeared indicative of a mediational relationship. In contrast, Weissberg, Gesten, Carnrike, Toro, Rapkin, Davidson, and Cowen (1981a) demonstrated that although latency-aged children trained in ICPS skills improved in various measures of adjustment, there was no relationship between problem-solving skill improvements and adjustive gains. Of even greater import is Allen, Chinsky, Larcen, Lockman, and Selinger's (1976) study of latency-aged children trained in ICPS skills, which found that training increased social problem-solving ability, but had no effect on behavioural adjustment or on sociometric peer ratings.

To conclude this review of the research relevant to the nature of the social problem-solving - adjustment relationship, it appears that clarification of the role of social problem-solving skills in social adjustment necessitates attention to a number of complex issues. The ensuing discussion will focus on three of the most

pertinent problems, namely, (a) the specific components[4] of social cognitive abilities which may contribute to adjustment, (b) the possible relationships among the various aspects of social cognition, and (c) the distinction between social cognitive capacity and social cognitive performance.

Regarding the components of social cognition, Shure and Spivack, and their associates (Spivack & Shure, 1974; Spivack, Platt & Shure, 1976) have focused on the processes involved in solving interpersonal problems. However, it has been suggested (e.g., Selman, 1980) that the content (i.e., beliefs, opinions and choices about the social world) of social cognition may be an important factor relating to adjustment. For instance, Walters and Peters (Note 8) demonstrated that aggressive children give aggressive solutions to interpersonal problems more consistently, and their initial solutions concern aggression more often, than do the solutions of unaggressive children. These researchers also found that the difference between aggressive and nonaggressive children was not due to a lack of awareness of socially appropriate solutions. The present study found that males at the adolescent level were very unlikely to produce aggressive responses, regardless of their level of social effectiveness. It is quite possible that the

---

[4] Components of social cognition include both processes (e.g., alternative thinking, means-ends thinking) and content (e.g., conceptions of friendship, peer group relations).

socially-ineffective adolescents would be more apt to use an aggressive means to reach a goal than would socially-effective adolescents, but at this developmental stage demonstrated an awareness of the inappropriateness of suggesting such a means in a testing situation.

The present study also examined whether socially-ineffective children would be less likely to consider introspection (e.g., planning) as a step in reaching a goal. However, it was found that overall, children at various levels of social effectiveness do not significantly differ in their likelihood of considering introspection as a step in reaching an interpersonal goal. Platt and Spivack (1974) found that well-adjusted and maladjusted adults differ in their likelihood of producing an introspective response. Since the present study found that adolescents as a group are unlikely to consider introspection, it appears that this aspect of means-ends content may not be an indicator of adjustment until the adult stage.

Studies such as that of Krasnor and Rubin (Note 7) and Walters and Peters (Note 8) provide some support for the notion that the content of ICPS thinking may be as important as the processes of ICPS thinking to adjustment. However, further support for this notion would require extensive analysis of the relative quality of solutions offerred by children to interpersonal dilemmas.

It is suggested that an adequate theory of the relation of social cognition to social adjustment requires attention to both the various processes involved in understanding the social world, and the content or knowledge applied in understanding the social world. The second conceptual issue requiring clarification concerns the relationships among various social-cognitive factors. For instance, the present study examined only one component of ICPS skills, namely means-ends thinking. It may be that the prediction of social adjustment from social cognitive abilities requires knowledge of the interactive effects of various levels of proficiency for various social-cognitive abilities. For example, does the development of proficient means-ends thinking require the ability to generate many alternative solutions? Is means-ends ability related to adjustment only when the particular steps employed to reach a goal (i.e., the content) reflect a mature awareness of the social world? Such questions must be addressed.

The above remarks have focused on social cognitive capabilities -- that is, the individual's highest capacities for social cognitive thought. However, an explication of the social cognition - social adjustment relation also requires attention to social cognitive performance. Thus, the third conceptual issue concerns the necessity of distinguishing between capacity and performance. For

instance, it may be that socially-ineffective individuals do not differ from more effective individuals in their ability to generate effective solutions to interpersonal problems, but do differ in their ability to apply, monitor, and regulate social cognitive abilities in every-day social situations. Krasnor and Rubin's (Note 7) study of preschool children supported this notion: "The ability to emit myriads of solutions to hypothetical social problems bore no relationship to the ability to successfully and behaviourally manage social problems in the preschool" (pg. 14). The ability to apply one's social cognitive capabilities in particular situations may be mediated by such factors as personality characteristics and demands of the current environment. Thus, an impulsive personality style, or an extremely stressful social situation, may interfere with optimal use of social cognitive capabilities. Social cognitive performance may also involve knowledge about how to apply social cognitive skills -- for example, at what point in a social situation social cognitive skills should be employed, and what types of social situations should involve particular aspects of social cognition.

To summarize these remarks regarding the conceptualization of the social cognition - social adjustment relationship, it is suggested that social cognitive abilities, and more specifically, ICPS skills, may be a necessary, but not sufficient basis for social adjustment. Clarifi-

cation of the role of social cognition in contributing to social adjustment requires understanding of the relationships among various social cognitive factors, and the conditions under which social cognitive abilities will actually be applied in everyday life.

Methodological Issues

Explication of the social cognition - social adjustment relationship also requires attention to the methodology used to obtain information regarding both these factors. A number of the most pertinent methodological issues will be discussed.

In the present study, social cognition was measured through responses to hypothetical dilemmas in a one-to-one interview situation. This type of measurement is often considered to reflect an individual's social cognitive capacity (i.e., his highest level of reasoning), since it provides the individual with some distance from the social problem, and is apt to promote reflective reasoning under conditions low in ego-involvement and thus defensiveness. However, the level of social cognition expressed may be affected by such factors as the individual's understanding of the task requirements, and his ability to verbalize his knowledge. That performance in a hypothetical dilemma in a new situation may not accurately reflect social cognitive capability was demonstrated in the current study -- the addition of prompt

questions resulted in significantly higher performance on the means-ends task. As suggested earlier, it may be difficult to accurately determine the meaning behind a child's spontaneous responses. Therefore, and in view of the present results concerning prompted responding, it is suggested that the measurement of social cognitive capability should include procedures for ensuring that the child understands the requirements of the task, and also ensuring that the child is given adequate opportunity to display the range of his social cognitive capabilities. For instance, probe questions such as those utilized in the present study (see page 21), and also follow-up questions, should help the child to communicate to the interviewer his highest level of social cognitive reasoning.

As was suggested in a preceeding section of this discussion, an individual's level of social cognition as expressed in the interview situation may not be synchronous with the level of reasoning he typically utilizes in everyday life. Therefore, it may also be important to determine the quality of an individual's "reasoning-in-action." The focus in this case is on assessing an individual's reasoning as he goes about solving social problems which are spontaneously encountered. A discussion of the complexities involved in measuring an individual's ability to apply social cognition in actual interpersonal situa-

tions is beyond the scope of the present paper; however, it should be noted that an accurate understanding of a child's interpersonal functioning may well require attention to the measurement of both social cognitive capabilities and social cognitive performance (see Selman, 1980 for further discussion of this issue).

Another important methodological issue concerns the content validity and item-equivalence reliability of the MEPS instrument. Platt and Spivack (1975b) demonstrated that, for male and female psychiatric patients, and for delinquent adolescents, all MEPS stories load on a single factor. This finding suggests that all stories measure the same quality of thinking -- means-ends cognition. However, the various stories may differ in the degree to which they measure the same quality of thinking. For instance, the present data indicated that some stories did differentiate groups, either by grade or by popularity. Also, there is some evidence from the present study that the correlations of individual story scores with total scores are stronger when certain stories are omitted ("obtaining money" and "finding a watch") (see Appendix K). It is suggested that interview techniques should be improved first, and then, based on such improved techniques, factor analytic studies should be performed. These procedures should allow for a more accurate approximation of the content validity and item-equivalence reliability

of the MEPS instrument.

The foregoing comments have suggested that there are several methodological concerns relating to the measurement of ICPS abilities. Also of concern is the methodology employed to obtain information regarding social adjustment. For instance, peer ratings have often been used by researchers studying ICPS skills (e.g., Allen et al, 1976; Weissberg et al, 1980b), as a general measure of social effectiveness. However, there are some difficulties associated with this type of measurement. Although peer popularity has been shown to be related to social adjustment (Hartup, 1970), it is certainly possible that a particular child may evidence an adequate degree of social adjustment, and still be unpopullar with peers. Similarly, the popular child may have achieved that status due to some particular attribute unrelated to social effectiveness. Confidence in the peer rating instrument's ability to discriminate groups differing in level of social effectiveness is enhanced if one focuses on individuals at the extremes of the popularity distribution. However, the present study suffered from the added difficulty that those children who did not participate in the MEPS interview would all have been included in the low-popular group. Thus, the children who were involved in the present study did not fully represent the distribution of levels of popularity within the groups.

Various other measures have been employed by researchers interested in obtaining a measure of social adjustment, including teacher ratings, pencil and paper personality inventories, and direct behavioural observation. Each of these methods carries with it its own unique set of advantages and disadvantages. For instance, the present study also included a teacher ratings instrument, whereby teachers were asked to nominate those individuals most well adjusted, most impulsive, and most withdrawn. However, it was not clear that all of the teachers involved in providing these ratings attached the same meaning to these labels. Also, it has been suggested (see Selman, 1980) that a teacher's rating of a particular child as well-adjusted may not accurately reflect that child's level of socially mature behaviour, but may instead simply reflect the child's lack of disruptiveness to the school situation.

The preceeding comments are only suggestive of the difficulty involved in obtaining an accurate measure of a child's level of social adjustment. In light of these difficulties, it is suggested that, when possible, the selection of well-adjusted and less-adjusted groups should be made on the basis of multiple measurements of social adjustment, covering a range of reporting techniques.

A final methodological issue concerns the selection of appropriate statistical techniques for comparing the means-ends ability of various groups. The Analysis of

Variance has been the method of choice of researchers examining ICPS skills. However, it is suggested that the characteristics of the scores derived from the MEPS procedure, as well as other ICPS skills procedures, are such that a categorical analysis of variance, such as the FUNCAT procedure (Helwig & Council, 1979) used in the present study for Introspection Scores, is a more appropriate form of statistical analysis. The MEPS procedure provides a frequency count of various aspects of means-ends thinking -- it does not provide for infinite sequential steps between responses. Therefore, the data obtained from the MEPS procedure are of a categorical nature, not a continuous nature. Since the Analysis of Variance assumes continuous variables and a normal distribution, it would appear more appropriate to apply a categorical analysis of variance technique to MEPS data.

Summary and Conclusions

The present study collected normative information regarding the means-ends thinking of male adolescents at two grade levels, Grade 7 and Grade 10. The normative data, in conjunction with that of previous studies, suggest that means-ends thinking, as measured by spontaneous responses to hypothetical dilemmas, shows no age-related improvement past the latency stage. Regarding the content of the strategies employed to reach an interpersonal goal, normal adolescents are not apt to consider

introspection as a step in achieving a goal, and they are even more unlikely to suggest using an aggressive response as a strategy.

The present study also examined the relationship between means-ends thinking and popularity. No systematic relationships were found. High-popular and low-popular male adolescents did not significantly differ in their disposition to produce relevant means to hypothetical dilemmas. Neither did they differ in their awareness of obstacles or of the passage of time. Finally, high-popular and low-popular adolescents did not generally differ in their likelihood of viewing introspection as a relevant step in reaching a goal.

The results of the present study concerning means-ends thinking and popularity were interpreted as providing further evidence against the hypothesis that there is a direct link between social cognition and social adjustment. It was suggested that explication of the social cognition - social adjustment relationship requires attention to complex issues concerning both conceptual and methodological difficulties. Of primary importance to conceptual advance is clarification of the specific components (both processes and knowledge) of social cognition which may contribute to social adjustment, and of the relationships among the various components of social cognition. Also critical is consideration of the conditions which mediate

an individual's ability to apply social cognitive abilities in actual social situations.

Concerning the methodology used to obtain a measure of social cognition, the present study demonstrated that the addition of prompt questions significantly increases adolescents' ability to communicate their social cognitive capabilities. This finding indicates that great care must be taken to design interview procedures which will allow children to demonstrate the full range of their capabilities. At the same time, standardization of both testing and scoring procedures must develop, in order to increase the utility of the MEPS procedure for both research and clinical purposes. Also required is further attention to issues of content validity and inter-item reliability.

It should be remembered that the importance of clarifying the social cognition - social adjustment relationship lies not only in providing a better theoretical model of human functioning, but also in the potential for social cognitive intervention and prevention techniques to optimize individual development. Given that the present research, as well as that of other researchers dealing with other age groups (e.g., Krasnor & Rubin, Note 7) found no relation between ICPS abilities, as measured by interview techniques, and various measures of social adjustment, the question remains as to the

utility of training children in ICPS skills. It is the opinion of this writer that such training programs may have the potential for improving children's social adjustment; however, the fulfillment of this potential will require the determination of the components of social-problem solving which should be focused upon in such training situations. Thus, should further research support the notion that effective social problem-solving in everyday life involves both social cognitive capacities and the ability to use such capacities in an optimal manner, training programs should be devised which incorporate both of these components.

APPENDIX A

POPULARITY QUESTIONNAIRE

Popularity Questionnaire

Here is a list of all of the boys in this class:

Use these names to answer the following questions. Do NOT use any of the girls' names and do NOT use anyone outside of this class. Please fill in every blank.

1. Suppose there was going to be a party. Which students from this classroom do you think would be the first to be invited to the party? Name three.
   1. _____
   2. _____
   3. _____
2. Suppose there was going to be a class election. Which students from this class would be the most likely to be elected as Class Representative? Name three.
   1. _____
   2. _____
   3. _____
3. Suppose everyone in the class had to do a group project. Which students would most people want to work with? Name three.
   1. _____
   2. _____
   3. _____
4. Who do you think most people in this class would invite to go on a week-end camping trip? Name three.
   1. _____
   2. _____
   3. _____
5. Among the students listed above, which ones are likely to consider other people's feelings and problems?
   1. _____
   2. _____
   3. _____

6. Among the students listed above, which ones are most liked by everyone else in this class? Name three.

   1. _____
   2. _____
   3. _____

7. Name your three best friends from this class.

   1. _____
   2. _____
   3. _____

APPENDIX B

TEACHER RATING FORM

Teacher Rating Form

1. Please name the five children in this class who appear to be the most withdrawn in their relationships with other children. If you don't think there are five children who fit this category, just name whatever number you think is appropriate.

   1. _____
   2. _____
   3. _____
   4. _____
   5. _____

2. Please name the five children in this class who appear to be the most impulsive (i.e., likely to act aggressively when frustrated, easily upset) in their relationships with other children. Again, if you don't think there are five children who fit this category, that's fine.

   1. _____
   2. _____
   3. _____
   4. _____
   5. _____

3. Please name the five children in this class who appear to be the best socially adjusted (i.e., get along well with other children, consider other children's feelings, are friendly and co-operative).

   1. _____
   2. _____
   3. _____
   4. _____
   5. _____

APPENDIX C

MEPS INSTRUCTIONS AND STORIES

MEPS Instructions and Stories

In this procedure we are interested in your imagination. You are to make up some stories. For each story you will be given the beginning of the story and how the story ends. Your job is to make up a story that connects the beginning that is given to you with the ending given you. In other words, you will make up the middle of the story.

(#3) Mr. P. came home after shopping and found that he had lost his watch. He was very upset about it. The story ends with Mr. P. finding his watch and feeling good about it. You begin the story where Mr. P. found that he had lost his watch.

(#4) Mr. C. had just moved in that day and didn't know anyone. Mr. C. wanted to have friends in the neighbourhood. The story ends with Mr. C. having many good friends and feeling at home in the neighbourhood. You begin the story with Mr. C. in his room immediately after arriving in the neighbourhood.

(#2) Henry loved his girlfriend very much, but they had many arguments. One day she left him. Henry wanted things to be better. The story ends with everything fine between him and his girlfriend. You begin the story with his girlfriend leaving him after an argument.

(#7) Bob needed money badly. The story begins one day when he notices a valuable diamond in a shop window. Bob decides to steal it. The story ends when he succeeds in stealing the diamond. You begin when he sees the diamond.

(#8) John noticed that his friends seemed to be avoiding him. John wanted to have friends and be liked. The story ends when John's friends like him again. You begin where he first notices his friends avoiding him.

(#9) One day George was standing around with some other people when one of them said something very nasty to George. George got very mad. George got so mad he decided to get even with the other person. The story ends with George happy because he got even. You begin the story when George decided to get even.

APPENDIX D

PEARSON PRODUCT-MOMENT CORRELATION COEFFICIENTS FOR POPULARITY SCORES

Pearson Product-Moment Correlation Coefficients for Popularity Scores - Grade Seven

Question*	(1)	(2)	(3)	(4)	(1-4) Total	(5)	(6)	(5-6) Total	(7)	Class 1 (1-7) Total
(1) party		.49[a]	-.16	.55[a]	.63[b]	.09	.70[b]	.60[b]	.63[b]	.69[b]
(2) elect	.74[b]		.49[a]	.11	.85[c]	.14	.85[c]	.74[c]	.28	.83[c]
(3) project	.01	.47		-.29	.55[a]	-.01	.10	.08	.09	.39
(4) camping	.86[c]	.77[b]	.01		.46	.54[a]	.40	.55[a]	.56[a]	.55[a]
(1-4) Total	.83[c]	.96[c]	.49	.84[c]		.30	.77[c]	.74[c]	.57[a]	.96[c]
(5) consider	-.16	.28	.41	-.33	.08		.27	.63[b]	.32	.45
(6) liked	.76[b]	.84[c]	.39	.74[b]	.88[c]	.18		.92[c]	.43	.86[c]
(5-6) Total	.55	.81[c]	.50	.45	.75[b]	.60[a]	.89[c]		.48	.88[c]
(7) friends	.39	.52	.67[b]	.47	.66[b]	-.07	.71[b]	.54		.66[b]
(1-7) Total	.76[b]	.94[c]	.57[a]	.77[b]	.98[c]	.20	.94[c]	.85[c]	.74[b]	
	Class 2									

* Refer to Appendix A for actual questions.

[a] $p < .05$.

[b] $p < .01$.

[c] $p < .001$.

Pearson Product-Moment Correlation Coefficients for Popularity Scores - Grade Ten

Question*	(1)	(2)	(3)	(4)	(1-4) Total	(5)	(6)	(5-6) Total	(7)	Class 1 (1-7) Total
(1) party		$.42^{a}$	$.56^{b}$	$.59^{b}$	$.86^{c}$	.15	$.68^{c}$	$.53^{b}$	$.44^{a}$	$.79^{c}$
(2) elect	$.51^{a}$		$.63^{c}$	.12	$.71^{c}$	.27	$.73^{c}$	$.62^{c}$	$.40^{a}$	$.72^{c}$
(3) project	.40	$.49^{a}$		.32	$.84^{c}$	.38	$.77^{c}$	$.69^{c}$	$.79^{c}$	$.88^{c}$
(4) camping	$.91^{c}$	$.52^{a}$	.22		$.62^{c}$	.04	$.43^{a}$	.31	.23	$.53^{b}$
(1-4) Total	$.90^{c}$	$.79^{c}$	$.63^{b}$	$.85^{c}$		.28	$.86^{c}$	$.72^{c}$	$.63^{c}$	$.96^{c}$
(5) consider	.03	$.45^{a}$	$.68^{c}$	-.17	.28		$.54^{b}$	$.82^{c}$	.36	$.50^{b}$
(6) liked	$.54^{b}$	$.83^{c}$	$.68^{c}$	$.50^{a}$	$.79^{c}$	.42		$.93^{c}$	$.53^{b}$	$.93^{c}$
(5-6) Total	.37	$.78^{c}$	$.80^{c}$	.24	$.67^{c}$	$.80^{c}$	$.88^{c}$		$.52^{b}$	$.85^{c}$
(7) friends	.27	$.49^{a}$	$.67^{c}$	.15	$.48^{a}$	$.60^{b}$	$.50^{a}$	$.64^{b}$		$.73^{c}$
(1-7) Total	$.76^{c}$	$.85^{c}$	$.77^{c}$	$.66^{c}$	$.95^{c}$	$.54^{b}$	$.88^{c}$	$.86^{c}$	$.66^{c}$	
	Class 2									

* Refer to Appendix A for actual questions.

[a] $p < .05$.

[b] $p < .01$.

[c] $p < .001$.

APPENDIX E

EXCERPTS FROM THE MEPS MANUAL:

SCORING CRITERIA

(Platt & Spivack, 1975a)

Scoring Criteria

Relevant Means, or Means

A. An individual "means" is scored for each discrete step which is effective in enabling the hero of the story to reach the resolution stage of the story or to overcome any obstacles preventing the hero from reaching the goal in the story. Thus, more than one mean can be scored for a subject's response to a given story.

B. Categories of means--Each means scored is not only tallied, but also placed in one of several categories empirically developed for each story. To keep the number of categories of means as small as possible, each category is broad enough to include several different means which are similar, although their exact form differs because of being given by different Ss.

e.g., In Story 7, the following responses can all be placed in the category of shoplifting:

"He takes the diamond when no one is looking."

"When the salesman's back is turned, he takes it."

"He placed the ring into his pocket and walked out."

C. Enumerations of means--See "Additional Scoring Criteria" below.

Other story-directed responses-- If S's responses are story-directed, but fail to include any relevant means, then the entire response is scored as either one Irrelevant

Means or one No-Means.

A. Irrelevant Means (IM)

1. An irrelevant means is scored for a response which includes only steps which are not effective within the context of the story. Such steps, however, would be reasonable and effective if the ending of the story were different.

e.g., In Story 4, "He went back to his old neighbourhood to see his friends," is an irrelevant means because that act does not help the hero make new friends. If the goal of the story were simply to have friends (not necessarily in a new neighbourhood), the above response would be considered a relevant means.

2. An irrelevant means is also scored if S provides steps which lack the appropriate foundation upon which the middle and end of the story should be built, even though the steps provided are effective within the context of the story. The underlying means, or first step, is left out.

B. A No-Means (NM) is scored for a response which fails to provide the steps necessary to reach the goal. There are three types of no-means responses possible for each story, plus an additional type occurring only in Story 3.

1. If a response fails to specify in sufficient detail how the goal is reached, it is a no-means.

e.g., In Story 7, "He must have done somthing clever to steal the diamond." What he did is not explained.

2. If the response is only the repetition or rewording of the story as given, it is a no-means.

e.g., In Story 7, "He needed the money, so he stole the diamond."

3. If the response is simply a value judgment, it is scored as a no-means.

e.g., In Story 7, "It was not right for him to steal. He should not have done it."

4. In Story 3, if S has the hero reach the goal through an accidental or "miracle-type" solution, the response is scored as a no-means.

e.g., If Mr. P. accidentally finds his watch on the desk where he left it or in his coat pocket, for instance, it is a no-means. This type of response may cause confusion in scoring, for if S says Mr. P. searched for the watch and then found it in either of the two places mentioned above, S would receive a score of two means (one for searching and one for accidentally finding the watch).

No Response (NR) -- If S fails to respond to a particular story or if his response is not story-directed, he is given a score of one NR for that story.

Additional Scoring Criteria

I. Enumerations of Means -- If S explains or gives some additional details concerning a particular step in the story. the additional explanation is scored as one or more enumerations of a means. The most common form is found

in Story 1:

e.g., "Mr. A. made a speech. In this speech he said that if elected, he would form a committee to plant flowers, and that he would organize a group to supervise the teenagers. Finally, he proposed that the people cooperate in the removal of trash."

Each of the three underlined phrases is a component of the means, "giving a speech." Because each phrase is an elaboration of the basic idea, that of making a speech, it is scored as an enumeration. The scorer must be careful to correctly distinguish between the distinctly separate steps (which are scored as individual means) that S provides and the elaborations (scored as enumerations) based on one means.

II. Obstacles

A. Any obstacle or difficulty in reaching the goal which S mentions is scored as an obstacle. It may be either internal or external to the hero of the story. Some examples are: a guilty conscience, high moral principles, shyness, a burglar alarm, and fear of being sent to prison.

B. Enumerations of Obstacles -- Any problem or difficulty that S mentions which is an addition to, or an enlargement upon, a previously mentioned obstacles is scored as an enumeration of an obstacle.

e.g., In Story 7, "Bob waits until night to steal the diamond. When he goes back to the shop, he sees a night

watchman (the obstacle). Bob decides to divert his attention by bringing him some liquor to get him drunk. The guard gets drunk and starts to sleep, but wakes up suddenly (enumeration of the obstacle), so Bob hits him on the head, then breaks into the shop and steals the diamond."

III. Time -- If S specifies an amount of time elapsing between the beginning and the end of the story, 1 unit of time is scored.

e.g., In Story 2, "He waited three days before calling his girlfiend to apologize.

Examples of Categories of Relevant Means

Story 2 "Regaining girl (boy) friend"

A. Have a discussion

B. Introspection (A statement of introspection is not sufficient by itself to be scored as a means, e.g., use of the word "realize" is not adequate to assume introspection. However, if the hero acts upon his introspection, e.g., by apologizing, two means should be scored, one for introspection and one for his action.)

C. Call or make date

D. Solve problem (specifying how)

E. Apology. (A statement of apology receives a score of one means, regardless of who apologizes, since the story calls for a happy ending without specifying whose actions are necessary for this objective to be obtained.)

Story 4 "Making new friends"

A. Visit neighbors

B. Neighbors visit

C. Give party

D. Invited to party

E. Introspection (To be scored as a means introspection must lead to some action, such as inviting neighbors.)

F. Be a good neighbor (this category includes such acts as a service to the community, helping one of the neighbors, assisting in a project, etc.)

Story 8 "Regaining friends"

A. Improve self

B. Discover problem (S can receive one means for discovering problem and one or more for his solution.)

C. Introspection (See B.)

D. Ask friends or family (Same as B and C).

E. Be nice to them

Story 9 "Getting even"

A. Physically harm

B. Spread false rumors

C. Prank

D. Be nice

E. Humiliate, insult

F. Do the same back ("get even" verbally)

G. Use group pressure

(excerpted from Platt & Spivack, 1975a, pp. 21 - 41)

APPENDIX F

PERCENTAGES OF AGREEMENT IN SCORING

Percentages of Agreement in Scoring

Story	Grade 7	Grade 10	Total
(3) watch	93	91	92
(4) friends	82	78	80
(2) argument	83	90	86
(7) money	80	86	85
(8) regain	75	75	75
(9) even	86	95	90
Total	83	86	85

APPENDIX G

NORMATIVE INFORMATION:

NUMBER OF RELEVANT MEANS

Normative Information: Means and Standard Deviations for Number of Relevant Means

Sample (Male)	Grade 7 N=25			Grade 10 N=41			12-16 year old Adolescents N=66		
Story	$\bar{X}$	S.D.	Range	$\bar{X}$	S.D.	Range	$\bar{X}$	S.D.	Range
(3) finding a watch	2.40	1.29	1-5	2.78	1.26	1-5	2.64	1.27	1-5
(4) making friends	2.44	0.93	1-4	2.15	0.94	0-4	2.26	0.93	0-4
(2) resolving argument	2.40	1.04	1-4	2.73	0.92	1-5	2.61	0.97	1-5
(7) obtaining money	2.64	1.22	1-6	2.56	1.29	0-5	2.59	1.25	0-6
(8) regaining friends	2.12	0.97	0-4	2.05	0.77	1-3	2.08	0.85	0-4
(9) getting even	2.24	1.45	1-5	1.90	1.09	0-5	2.03	1.24	0-5
Total of 6 stories	14.24	4.74	7-27	14.17	4.24	7-23	14.20	4.40	7-27
Mean for 6 stories	2.38			2.36			2.37		
Total of 4 stories (Numbers 4, 2, 8, & 9)	9.20	3.16	5-16	8.83	2.65	4-14	8.97	2.84	4-16
Mean for 4 stories	2.30			2.21			2.24		

APPENDIX H

NORMATIVE INFORMATION:

MEPS SCORES, OBSTACLES, AND TIME

Normative Information: Means and Standard Deviations for MEPS Scores (Means + Obstacles + Time)

Sample (Males)	Grade 7 N=25			Grade 10 N=41			12-16 year old Adolescents N=66		
Story	$\bar{X}$	S.D.	Range	$\bar{X}$	S.D.	Range	$\bar{X}$	S.D.	Range
(3) finding a watch	3.12	1.94	1-8	3.54	1.82	1-7	3.38	1.86	1-8
(4) making friends	2.92	1.44	1-6	2.44	1.16	0-6	2.62	1.29	0-6
(2) resolving argument	3.04	1.62	1-6	3.32	1.32	1-7	3.21	1.43	1-7
(7) obtaining money	4.16	2.37	1-10	3.76	2.02	1-8	3.91	2.15	1-10
(8) regaining friends	2.72	1.37	1-6	2.46	1.16	1-5	2.56	1.24	1-6
(9) getting even	2.64	2.06	1-8	2.32	1.35	0-5	2.44	1.65	0-8
Total of 6 stories	18.60	8.16	7-43	17.84	6.20	8-30	18.12	6.95	7-43
Mean for 6 stories	3.10			2.97			3.02		
Total of 4 stories (Numbers 4, 2, 8, & 9)	11.32	4.96	5-25	10.54	3.61	4-19	10.83	4.16	4-25
Mean for 4 stories	2.83			2.64			2.71		

Normative Information: Means and Standard Deviations for Number of Obstacles

Sample (Males)	Grade 7 N=25			Grade 10 N=41			12-16 year old Adolescents N=66		
Story	$\bar{X}$	S.D.	Range	$\bar{X}$	S.D.	Range	$\bar{X}$	S.D.	Range
(3) finding a watch	.48	.71	0-2	.49	.64	0-2	.48	.66	0-2
(4) making friends	.32	.56	0-2	.22	.47	0-2	.26	.51	0-2
(2) resolving argument	.36	.49	0-1	.37	.54	0-2	.36	.52	0-2
(7) obtaining money	1.20	1.15	0-4	.93	.82	0-3	1.03	.96	0-4
(8) regaining friends	.48	.51	0-1	.27	.45	0-1	.35	.48	0-1
(9) getting even	.32	.75	0-3	.24	.43	0-1	.27	.57	0-3
Total of 6 stories	3.16	2.91	0-11	2.51	1.93	0-7	2.76	2.35	0-11
Mean of 6 stories	.53			.42			.46		

Normative Information: Awareness of the Passage of Time

Sample (Males)	Grade 7 N=25	Grade 10 N=41	12-16 year old Adolescents N=66
Proportion of Subjects Generating a Reference to the Passage of Time			
Story			
(3) finding a watch	.24	.27	.26
(4) making friends	.16	.07	.11
(2) resolving argument	.28	.22	.24
(7) obtaining money	.32	.27	.29
(8) regaining friends	.12	.15	.14
(9) getting even	.08	.17	.14
Mean proportion - 6 stories	.20	.19	.20
Mean proportion - 4 stories (4, 2, 8, & 9)	.16	.15	.16
Mean Number of References to the Passage of Time Across Stories			
Across 6 stories	1.20	1.15	1.17
Across 4 stories (4, 2, 8, & 9)	.64	.61	.62

APPENDIX I

NORMATIVE INFORMATION: INTROSPECTIVE MEANS

Normative Information: Introspective Means

Sample	Grade 7 N=25	Grade 10 N=41	12-16 year old Adolescents N=66
Proportion of Subjects Generating an Introspective Mean			
Story			
(3) finding a watch	.24	.29	.27
(4) making friends	.12	.27	.20
(2) resolving argument	.24	.49	.39
(7) obtaining money	.32	.15	.24
(8) regaining friends	.52	.39	.44
(9) getting even	.32	.32	.32
Mean proportion - 6 stories	.29	.32	.31
Mean proportion - 4 stories (4, 2, 8, & 9)	.30	.37	.34
Mean Number of Introspective Means Across Stories			
Across 6 stories	1.76	1.90	1.83
Across 4 stories (4, 2, 8, & 9)	1.20	1.50	1.35

APPENDIX J

SUMMARY OF ANOVA TESTS FOR TEACHERS' RATINGS OF ADJUSTMENT

Summary of ANOVA Tests
for Teachers' Ratings of Adjustment*

Total Number of Relevant Means Across Six Stories

Source	SS	df	MS	F
Grade (A)	7.74	1	7.74	.35
Adjustment (B)	7.74	1	7.74	.35
A x B	14.64	1	14.64	.66
Error	617.75	28	22.06	

Total MEPS Score Across Six Stories

Source	SS	df	MS	F
Grade (A)	71.23	1	71.23	1.21
Adjustment (B)	2.20	1	2.20	.04
A x B	31.23	1	31.23	.53
Error	1,642.98	28	58.68	

*Model: Total = Grade (7 & 10), Adjustment (well adjusted & withdrawn), Grade x Adjustment.
N = 32

APPENDIX K

PEARSON PRODUCT-MOMENT CORRELATION COEFFICIENTS FOR ALL STORIES

Pearson Product-Moment Correlation Coefficients for Number of Relevant Means

Grade 7.

Story	(3)	(4)	(2)	(7)	(8)	(9)	Total of 6*	Total of 4**	(9) Prompted
(3) watch		.44[a]	.28	.60[b]	.36	.33	.75[c]		.26
(4) friends	.37[a]		.33	.07	.13	.39	.55[b]	.62[c]	.28
(2) argument	.25	.54[c]		.32	.45[a]	.46[a]	.67[c]	.77[c]	.32
(7) money	.36[a]	.37[a]	.34[a]		.46[a]	.40[a]	.72[c]		.42[a]
(8) regain	.14	.30	.33[a]	.45[b]		.30	.64[c]	.63[c]	.32
(9) even	.42[b]	.33[a]	.32[a]	.38[a]	.21		.74[c]	.82[c]	.91[c]
Total of 6*	.68[c]	.70[c]	.66[c]	.74[c]	.56[c]	.68[c]			.65[c]
Total of 4**		.76[c]	.77[c]		.60[c]	.70[c]			
(9) Prompted	.26	.30	.17	.25	.17	.83[c]	.50[c]		

Grade 10

* Numbers 3, 4, 2, 7, 8, and 9.

* Numbers 4, 2, 8, and 9.

[a] $p < .05$.

[b] $p < .01$.

[c] $p < .001$.

Pearson Product-Moment Correlation Coefficients for MEPS Scores

Story	(3)	(4)	(2)	(7)	(8)	(9)	Total of 6*	Total of 4**	(9) Prompted
									Grade 7
(3) watch		.50[b]	.33	.71[c]	.51[b]	.54[b]	.82[c]		.47[a]
(4) friends	.45[b]		.63[c]	.31	.33	.45[a]	.68[c]	.77[c]	.34
(2) argument	.40[b]	.43[b]		.42[a]	.42[a]	.45[a]	.70[c]	.81[c]	.42[a]
(7) money	.38[b]	.25	.41[b]		.69[c]	.43[a]	.82[c]		.36
(8) regain	.32[a]	.27	.57[c]	.55[c]		.36	.72[c]	.66[c]	.32
(9) even	.43[b]	.26	.37[a]	.36[a]	.29		.74[c]	.79[c]	.88[c]
Total of 6*	.74[c]	.60[c]	.73[c]	.75[c]	.69[c]	.64[c]			.64[c]
Total of 4*		.66[c]	.82[c]		.72[c]	.68[c]			
(9) Prompted	.24	.29	.11	.24	.22	.71[c]	.42[b]		
	Grade 10								

* Numbers 3, 4, 2, 7, 8, and 9.

** Numbers 4, 2, 8, and 9.

[a] $p < .05$.

[b] $p < .01$.

[c] $p < .001$.

REFERENCE NOTES

1. Flavell, J. H. Monitoring social-coginitive enterprises: Something else that may develop in the area of social cognition. Paper prepared for the Social Science Research Council Committee on Social and Affective Development During Childhood. January, 1979.
2. Spivack, G., Shure, M., & Platt, J. J. Means-ends problem solving stimuli and scoring procedures supplement. Unpublished manuscript, Hahnemann Medical College and Hospital, Philadelphia, 1981.
3. Larcen, S. W., Spivack, G., & Shure, M. Problem-solving thinking and adjustment among dependent-neglected preadolescents. Paper presented at the Eastern Psychological Association, Boston, 1972.
4. Shure, M. B., Newman, S., & Silver, S. Problem-solving thinking among adjusted, impulsive and inhibited Head Start children. Paper presented at the Eastern Psychological Association, Washington, D. C., 1973.
5. Spivack, G., & Levine, M. Self-regulation in acting-out and normal adolescents. Report M-4531, National Institute of Health, Washington, D. C., 1963.

6. Platt, J. J., & Spivack, G. Real-life problem-solving thinking in neuropsychiatric patients and controls. Paper presented at the Eastern Psychological Association, Atlantic City, New Jersey, 1970.

7. Krasnor, L. R., & Rubin, K. H. Preschoolers' verbal and behavioural solutions to social problems. Paper presented as part of a symposium entitled Social Development in Children, Canadian Psychological Association, Ottawa, Ontario, 1978.

8. Walters, J., and Peters, R. Social problem solving in aggressive elementary school boys. Unpublished manuscript, University of Guelph, Guelph, Ontario, 1980.

REFERENCES

Allen, G. J., Chinsky, J. M., Larcen, S. W., Lochman, J. E., & Selinger, H. V. Community psychology and the schools: A behaviourally oriented multi-level preventative approach. Hillsdale, N. J.: Lawrence J. Erlbaum Associates, 1976.

Cowen, E. L., Pederson, A., Babigian, H., Izzo, L. D., & Trost, M. A. Long-term follow-up on early detected vulnerable children. Journal of Consulting and Clinical Psychology, 1973, 41, 438-446.

Elkins, D. Some factors related to the choice status of ninety eighth-grade children in a school society. Genetic Psychology Monographs, 1958, 58, 207-272.

Feinberg, M. R., Smith, M., & Schmidt, R. An analysis of expressions used by adolescents of varying economic levels to describe accepted and rejected peers. Journal of Genetic Psychology, 1958, 93, 133-148.

Gronlund, N. E., & Anderson, L. Personality characteristics of socially accepted, socially neglected and socially rejected junior high school pupils. Educational Administration and Supervision, 1957, 43, 329-338.

Hartup, W. W. Peer interaction and social organization. In P. H. Mussen, (Ed.), Carmichael's manual of child psychology (Vol. II) (3rd ed.). New York: John Wiley & Sons, 1970.

Helwig, J. T., & Council, K. A. (Eds.). SAS user's guide, 1979 edition. Raleigh, N.C.: SAS Institute Inc., 1979.

Horrocks, J. E. The psychology of adolescence (4th ed.). Boston: Houghton Mifflin Company, 1976.

Iscoe, I., & Carden, J. A. Field dependence, manifest anxiety, and sociometric status in children. Journal of Consulting Psychology, 1961, 25, 184.

Kuhlen, R. G., & Bretsch, H. S. Sociometric status and personal problems of adolescents. Sociometry, 1947, 10, 122-132.

Loban, W. A study of social sensitivity (sympathy) among adolescents. Journal of Educational Psychology, 1953, 44, 102-112.

Marks, J. B. Interests, leadership, and sociometric status among adolescents. Sociometry, 1954, 17, 340-349.

Marsh, D. T., Serafica, F. C., & Barenboim, C. Effect of perspective-taking training on interpersonal problem solving. Child Development, 1980, 51, 140-145.

Northway, M. L. A primer of sociometry. Toronto: University of Toronto Press, 1967. (Originally published, 1952).

Pathak, R. Adjustment level of sociometrically selected groups of peers. Psychological Studies, 1974, 19, 130-137.

Platt, J. J., & Siegel, J. M. MMPI characteristics of good and poor social problem-solvers among psychiatric patients. Journal of Psychology, 1976, 94, 245-251.

Platt, J. J., & Spivack, G. Problem-solving thinking of psychiatric patients. Journal of Consulting and Clinical Psychology, 1972, 39, 148-151.

Platt, J. J., & Spivack, G. Studies in problem-solving thinking of psychiatric patients: patient-control differences and factorial structure of problem-solving thinking. Paper presented at American Psychological Association, Montreal, 1973. In Proceedings, 81st Annual Convention of the American Psychological Association, 1973, 8, 461-462.

Platt, J. J., & Spivack, G. Means of solving real-life problems: I. Psychiatric patients versus controls, and cross-cultural comparisons of normal females. Journal of Community Psychology, 1974, 2, 45-58.

Platt, J. J., & Spivack, G. Manual for the means-ends problem-solving procedure. Philadelphia: Department of Mental Health Sciences, Hahnemann Community Mental Health/Mental Retardation Center, 1975a.

Platt, J. J., & Spivack, G. Unidimensionality of the means-ends problem-solving (MEPS) procedure. Journal of Clinical Psychology, 1975b, 31, 15-16.

Platt, J. J., Spivack, G., Altman, N., Altman, D., & Peizer, S. E. Adolescent problem-solving thinking. Journal of Consulting and Clinical Psychology, 1974, 42, 787-793.

Sebald, H. Adolescents' concept of popularity and unpopularity, comparing 1960 with 1976. Adolescence, 1981, 16, 187-193.

Selman, R. L. The growth of interpersonal understanding. Developmental and clinical analyses. New York: Academic Press, 1980.

Shure, M. B., & Spivack, G. Means-ends thinking, adjustment and social class among elementary school-aged children. Journal of Consulting and Clinical Psychology, 1972, 38, 348-353.

Siegal, J. M., Platt, J. J., & Peizer, S. B. Emotional and real-life problem-solving thinking in adolescent and adult psychiatric patients. Journal of Clinical Psychology, 1976, 32, 230-232.

Spivack, G., Platt, J. J., & Shure, M. B. The problem-solving approach to adjustment. San Francisco: Jossey-Bass Publishers, 1976.

Spivack, G., & Shure, M. B. Social adjustment of young children: A cognitive approach to solving real-life problems. San Francisco: Jossey-Bass, 1974.

Weissberg, R. P., Gesten, E. L., Carnrike, C. L., Toro, P. A., Rapkin, B. D., Davidson, E., & Cowen, E. L. Social problem-solving skills training: a competence-building intervention with 2nd-4th grade children. American Journal of Community Psychology, 1981a, 9, 411-423.

Weissberg, R. P., Gesten, E. L., Rapkin, B. D., Cowen, E. D., Flores de Apodaca, R., & McKim, B. J. The evaluation of a social problem-solving training program for suburban and inner-city third grade children. Journal of Consulting and Clinical Psychology, 1981b, 49, 251-261.

Witryol, S. L., & Thompson, G. G. A critical review of the stability of social acceptability scores obtained with the partial-rank-order and the paired-comparison scales. Genetic Psychology Monographs, 1953, 48, 221-260.

VITA AUCTORIS

Jo-Anne Marie Lewicki (nee Levang) was born on August 20, 1953, in Windsor, Ontario. She graduated from Riverside Secondary School, Windsor, Ontario, in 1971, and received her Bachelor of Arts degree from Wilfrid Laurier University, Waterloo, Ontario in 1974. Following five years of work with multihandicapped children, she returned to university studies in 1979. She is presently registered as a full-time student in the Ph.D. program in child-clinical psychology at the University of Windsor.