

INTERPERSONAL PROBLEM SOLVING IN FAMILIES
OF PERSONS DIAGNOSED SCHIZOPHRENIC

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"To whomever is concerned with schizophrenia,
nothing can be more important than its prevention."

(Arieti, 1974, p. 513)

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CHAPTER 1

INTRODUCTION

An estimated two million Americans, or 1% of the population, suffer from schizophrenia today. Each year, an estimated 180,000 of that total are hospitalized for the treatment of schizophrenia (Lehmann, 1975). According to Segal and Kety's 1964 National Institute of Mental Health Report (cited in Salzinger, 1973), 25% of the patients admitted to state mental hospitals each year and 50% of the resident population in these hospitals are diagnosed schizophrenic.

A number of theories attempt to explain the etiology of schizophrenia. The organicity-environment, nature-nurture controversies from the past continue in the present. In addition, there is mounting interest in the significance of family interaction as it relates to the development of schizophrenia. Currently, most persons investigating schizophrenia in relation to the family believe that the total family unit is pathogenic and that the schizophrenic behavior of the "identified patient" of the family serves an adaptive function within the family.

Disturbance of thinking and conceptualization is one of the most characteristic features of schizophrenia.

The person diagnosed schizophrenic thinks and reasons according to his own autistic terms, and his thought processes often lead to conclusions which are not based on reality. Thinking and concept distinction are necessary to problem-solving.

Previous research (Platt, Siegel, & Spivack, 1975; Platt & Spivack, 1972a) has identified the relative inability of persons diagnosed schizophrenic, as contrasted with normals, to generate means of resolving interpersonal problem situations. If one assumes that schizophrenia is of family origin, research focusing on the problem-solving ability of the family member diagnosed schizophrenic and the other members of the family is indicated.

Psychiatric-mental health nurses interact with persons diagnosed schizophrenic and those persons' families. An increased understanding of family systems and of family members' interactions in relation to relevant psychiatric variables is needed for more therapeutic approaches in primary, secondary, and tertiary prevention interventions by nurses.

Statement of Problem

The problem of this investigation was: Is there a difference in interpersonal problem-solving ability between

persons diagnosed schizophrenic and family members of persons diagnosed schizophrenic?

Justification of Problem

Since psychiatric-mental health nurses are involved in family systems and interpersonal situations with clients, a theory well-supported by nursing research which would allow the development of solutions to interpersonal problems would be very useful. The requirement for theory to guide research and for research to enhance theory development has become recognized by nursing (Sills, 1977). In a review and assessment of research in the field of psychiatric-mental health nursing, Sills (1977) reported that from the mid-1960s to the present, nurse researchers have focused on social systems, and that one focal unit for study within the systems framework has been families. However, the body of the work done in the systems framework has been small.

In the report of their research, Platt and Spivack (1972a) concluded that the relationship of problem-solving cognition to the ability to successfully solve life problems and to adapt to the environment has been relatively neglected in research in psychopathology. In their study, the hypothesis that psychiatric patients are less able than normal controls to address themselves

to hypothetical problematic situations and to provide solutions to such problems was supported. Compared with normal controls, psychiatric patients responded with less means-ends thinking and with a lower percentage of relevant means in response to hypothetical problematic social situations.

The results of another study (Platt, Siegel, & Spivack, 1975) suggested:

The underlying element in successful interpersonal problem solving may be the spontaneous capacity to generate possibilities when confronted with interpersonal problems; psychiatric patients are unable to think through the rationale underlying a particular course of action; and, successful therapeutic intervention should focus on the development of skills related to the generation of problem-solving thought. (p. 279)

These studies give rise to the need for further understanding of the problem-solving ability of psychiatric patients. Persons with the diagnosis of schizophrenia were subjects in these cited studies, but they were compared to control groups of normals or to other psychiatric patients rather than with other members of their own families. It would seem that comparing the problem-solving abilities of members of a family would be of benefit in expanding health professionals' knowledge about family systems of which persons identified as schizophrenics are members.

If there is the kind of relationship between the identified patient and other members of that person's family that family systems theory asserts that there is, then the identifiable deficits of the schizophrenic, one of them being inadequate problem solving, can be hypothesized to be present in family members other than the identified patient.

Persons diagnosed schizophrenic tend to have a high rate of readmission to inpatient psychiatric treatment facilities. Having an advanced scientifically-based understanding of problem solving within the family, health professionals could possibly intervene prior to the occurrence or recurrence of the maladjustment requiring hospitalization of the individual. Another positive outcome of the increased knowledge may be discouragement of the now common labeling and scapegoating of the diagnosed schizophrenic member of the family. Family systems theory asserts that the whole family system is responsible for the dysfunction.

Theoretical Framework

Family systems theory, also known as the Bowen theory, is a specific theory which focuses on human relationship functioning and emotional functioning (Bowen, 1976). Theorists including Ackerman (1966), Jackson (1960),

Lidz, Fleck, and Cornelison (1965), Satir (1967), Skynner (1976), and Kantor and Lehr (1975) support Bowen's family systems theory through their views that the family system is an individual's most ongoing and consistent influence, and that it is the most accessible, intimate, intense system of which an individual is a component part. According to these theories, all human behavior occurs in systems.

Family systems theory demands looking at a family problem as a whole, attending to both the overt and covert behaviors and interactions. The individual members of a family make up the whole of the family system (Bowen, 1976). This theory recognizes that there may be one malfunctioning component part in the family, but emphasizes that the family has precipitated the malfunction and that the malfunction serves a purpose in maintaining the family's present level of functioning. Without knowing how the entire family system functions, one cannot treat the malfunctioning part. Therefore, the system must be clearly observed and accurately described.

Systems theories address a hierarchy of subsystems, systems, and suprasystems (Beavers, 1977). An example of this hierarchy is a family (a system), composed of several individuals (subsystems), existing in a society (a suprasystem). Members of a family relate to each other

with greater intensity than they do to individuals outside of their particular family boundary. These same individual family members and the family as a whole also relate to the larger society, which is a system including many family systems.

Within a family system, an individual can change only oneself. However, following an individual's change, other individuals of the system react differently than they did prior to the one individual's change; this is attributed to the constant exchange of energy among all members of the system (Bowen, 1976). Therefore, the change of one person affects the whole system.

Bowen (1976) asserted that systems function at all levels of efficiency or dysfunction. The basic concepts of Bowen's theory (1976), which describe functional and dysfunctional family systems, share a commonality with the basic concepts of von Bertalanffy's general system theory. The concept "open system" (von Bertalanffy, 1968) is a system which maintains a continuous inflow and outflow of energy among its component parts, actively interacting with its environment. The concept of open system is related to Bowen's (1976) description of healthy families, in which "differentiation of self" occurs. The concept of differentiation of self refers to an individual

who has his/her own identity, is autonomous, has a strong ego, and who actively interacts with other members of his/her family system and with the larger environment. An open system allows and encourages self-growth of its individual members.

A "closed system" (von Bertalanffy, 1968) is considered to be isolated from and, therefore, noninteractive with its environment. This concept shares commonalities with Bowen's (1976) description of dysfunctional families, of which "undifferentiated family ego mass" is a part. Members of a closed, dysfunctional family system function on a dependent level, not perceiving themselves and each other as separate from one another. Within the undifferentiated family ego mass, individuals' feelings are generalized and projected, and egos are weak. Another concept which Bowen (1976) used to refer to this intense dependence is "fusion."

Within the closed system, the responsibility for the general unpleasantness is often assigned to a particular individual, often the identified patient, since the entire family's assuming responsibility for the pathology would be a threat to the existence of the system (Beavers, 1977).

Schizophrenic families are considered closed systems. "In a family with a schizophrenic family member, the

fusion between father, mother, and child approaches maximum intensity" (Bowen, 1965, p. 219). The unique needs of the individual members are experienced as a threat to the whole system, and the group lives according to complex rituals, unspoken rules, unclear patterns of behavior and communication, and secrets. Family systems theory (Bowen, 1965) considers "family projection process" the controlling mechanism in schizophrenia, the mechanism through which the parental emotional illness is transmitted to the child. Balancing needs of the parents and the child keep the relationship in equilibrium.

The characteristics of all systems, whether open or closed, are not determined by any one person in the system but by a dynamic interaction of all the members of the system. All systems are more than the sum of their parts (Bowen, 1976). Family systems theory does not negate that an individual family member exhibits the symptomatology, but it emphasizes assessment of the whole family, followed by therapeutic intervention.

The core of Bowen's theory (1976) focuses on the degree to which people are able to distinguish between "feeling" and "thinking." Bowen's early research found that the parents of persons diagnosed schizophrenic, appearing to function well, had difficulty distinguishing

between the subjective feeling process and the more objective thinking process, this difficulty being most marked in a close interpersonal relationship. This finding was followed by Bowen's investigating the same phenomenon in most impaired, normal, and highest functioning families. The findings that there were differences between the ways feelings and thoughts were either fused or differentiated from each other led the theorist to develop the concept differentiation of self (Bowen, 1976). People with the greatest fusion of feeling and thinking are vulnerable to many problems. Those persons with the most ability to distinguish between feeling and thinking, having the most differentiation of self, have the most flexibility and adaptability in coping with life stresses and experience the most freedom from problems of all kinds (Bowen, 1976).

Closely related to Bowen's (1976) family systems theory is the transactional analysis-based theory of the etiology of schizophrenia as presented by Schiff (1975). Schiff (1975) discussed healthy and unhealthy symbiosis, schizophrenia reflecting the characteristics of unhealthy symbiosis. Schiff gave the following definition of symbiosis:

two or more individuals behaving as though between them they form a whole person; this

relationship is characterized structurally by neither individual cathecting a full complement of ego states. (p. 5)

This definition complements the family systems theory by suggesting that unless each family member is self-differentiated, there is no opportunity for growth in the entire family system.

Through an awareness of oneself, others, and reality situations, one thinks and is able to define problems, determine options to solve the problems, and act effectively on the options (Schiff, 1975). Thinking is viewed as an adaptation which is learned in response to environmental demands. Not all persons achieve socially functional thinking, and Schiff (1975) hypothesized that individuals' unsuccessful achievement of socially functional thinking can be attributed to biological deficiencies, limitations in environmental stimulation, or exposure to incorrect learning.

For many people with thinking problems, there are "script" issues which are accompanied by misinformation or injunctions such as "Thinking is hard work" or "Don't think." Script is a transactional analysis concept which refers to an individual's living out his life based on an early childhood decision; the script is the individual's blueprint for life (Schiff, 1975). Schiff hypothesized

that script options are defined by the frame of reference which is initially learned from the parents and that scripts determine the structure of thinking, problem solving, and other adaptive behaviors. Schiff listed the following as important messages for every child to incorporate as his own: "(1) You can solve problems, (2) You can think, (3) You can do things" (p. 33).

Schiff (1975) was consistent with Bowen (1965) in her description of the individual members of the dysfunctional family system having assumed long-term patterns of relating, occupying fixed roles, and having minimal interaction with the outside world. Persons identified as schizophrenics are examples of individuals whose life experiences have not adequately prepared them for autonomous coping. They have learned a number of dysfunctional behaviors, and these do not contribute to a strong ability to solve interpersonal problems. The same may be true of other members of their families.

Satir (1967) applied systems theory in the assessment and treatment of families. Satir emphasized that the "identified patient" is the family member who is most affected by the parents' marital dissension and who is most subjected to dysfunctional parenting. Bowen's (1965) family systems theory is further supported by

Satir's (1967) assertion that symptoms and illness do not exist in one family member in isolation from other family members. Rather, the interactions of all members of the family system are held responsible for whatever dysfunction is present. Satir (1967) analyzed communication patterns and behavior patterns within families, referring to communication as the largest single factor determining the types of relationships that people have in their specific family system as well as in the larger supra-system.

Ackerman (1966), a pioneer in family therapy, did not utilize the specific concepts of the family systems theory, but his beliefs were congruent with those of Bowen's (1965) theory. Ackerman (1966) discussed the dynamic emotional and behavioral exchange of family members, proposing that the family determines the emotional health or illness of the child. Along with Bowen (1965), Ackerman (1966) affirmed that an emotional or behavioral change by one family member effects an altered interactional process among other family members. Also addressed by Ackerman (1966) was the interaction of the family and society. The following statement may be paralleled with Bowen's (1965) differentiation of self concept and with Schiff's (1975) healthy symbiosis and its

step-by-step breakdown. "From difference comes union, out of union comes difference, and again new union, on into perpetuity" (Ackerman, 1966, p. 7).

Family system theory (Bowen, 1965, 1976) and the supportive systems theories suggest that interpersonal interactions within healthy families are distinguishable from interactions within dysfunctional families and that children learn problem solving and other adaptive behaviors from their parents. Accepting the propositions of Bowen's family systems theory (1965, 1976), further study of variables within family systems seems reasonable. Identification of the comparabilities of interpersonal problem-solving abilities of persons diagnosed schizophrenic and members of their families may be one method of testing the theory.

Assumptions

The following assumptions were made:

1. Schizophrenia is a serious health problem experienced by many individuals and families.
2. A family system is more than the sum of its individual members.
3. Problem solving is an inherent task in daily living.

4. The ability of individuals to manage interpersonal problems is a key factor in emotional well-being and social adjustment.

Hypothesis

The following hypothesis was tested at the .05 level of significance: There is no difference in interpersonal problem-solving ability between persons diagnosed schizophrenic and their family members.

Definition of Terms

The following terms were defined for the study:

1. Interpersonal problem-solving ability--the Relevant Means (Means) score obtained on the Means-Ends Problem-Solving Procedure (Appendixes F and G), in response to the administration of six hypothetical interpersonal problematic situations (stories); the sum of Relevant Means from each of the six stories constitute the total score.

2. Family--mother, father, and at least one child age 13 or older living together in one household, one family member meeting the criteria of the individual diagnosed schizophrenic; the family may be a "blended" family where the children are parented by a step-, legally adoptive, or foster parents.

3. Family member--any one of the individual persons of which the selected families are composed; this individual may be the father, mother, or child of the family; the members of each specific family live in the same household; boarders were not considered family members.

4. Schizophrenia--a clinical diagnosis documented in the selected community mental health center's record of the identified patient of each of the selected families.

Limitations

The following uncontrolled variables were identified:

1. Some family members may have been taking medications or other agents which may have influenced cognitive states at any given time.
2. There was no control of variation of intelligence levels within and among families.
3. Variability of environment was not controlled.
4. Subjects being differentially motivated during the testing was not controlled.

5. There may have been family members other than the identified patient who had characteristics of schizophrenia but who were not formally diagnosed.

Summary

There is a need for further understanding of the problem-solving process per se and, specifically, of the interpersonal problem-solving ability of persons diagnosed schizophrenic and members of their families. The relationship of problem-solving cognition to the ability to successfully solve interpersonal problems and to adapt to the environment has been neglected in research in psychopathology.

Studies have suggested that therapeutic intervention with schizophrenia should focus on the development of skills related to the generation of problem-solving thought. Prior to therapeutic interventions by health professionals, there should be an understanding of the phenomenon of interpersonal problem-solving abilities of persons diagnosed schizophrenic and their family members.

CHAPTER 2

REVIEW OF LITERATURE

Chapter 2 reviews the concepts of interpersonal problem solving and families of persons diagnosed schizophrenic. Three main areas of the literature reviewed and presented are interpersonal problem solving, families of persons diagnosed schizophrenic, and interpersonal problem solving in families of persons diagnosed schizophrenic. The chapter concludes with a summary of the review.

Interpersonal Problem Solving

The study of human problem solving has a long history in psychology and has been reviewed periodically (Davis, 1966; Duncan, 1959; Simon & Newell, 1971). The focus of these studies has been the measurement of cognitive styles and abilities when the person is confronted with impersonal, nonsocial tasks. Tasks presented in these studies have included puzzles, anagram problems, water jar problems, grouping various items, arithmetic problems, concept-identification problems, and tests of general reasoning ability.

In their reviews of the research addressing human problem solving, both Davis (1966) and Duncan (1959) described this area of research as chaotic, attributing the chaos and lack of systematic progress to the diversity of "problem-solving" tasks and techniques, frequent use of unanalyzed and nondimensionalized variables, the lack of an agreed-upon taxonomy of behavioral processes, and the failure to relate the data to previous data or to theory.

The approaches taken in measuring problem-solving abilities of subjects participating in the above-mentioned types of tasks have reflected the theoretical dispositions of the investigators (Coates, Alluisi, & Morgan, 1971). The Gestalt approach has emphasized the insightful nature of problem solving (Asher, 1963; Davis, 1973; Scheerer, 1963). Others have treated the issue in terms of human thinking and information processing (Maltzman, 1962; Posner, 1965). Still others have approached the issue in terms of intellectual ability (Merrifield, Guilford, Christensen, & Frick, 1962). Duncan (1959) expressed optimism that in the unintegrated area of research on problem solving there are a number of theoretical beginnings.

According to Davis (1966), basic learning principles have been used to interpret the complex behavior of problem solving. Davis (1966) asserted that the most

significant difference between problem solving and other forms of learning is that in most problem-solving tasks, the response alternatives are not clearly defined for the subject.

More recently, Davis (1973) discussed barriers to effective problem solving. Aside from a lack of prerequisite information or deficient mental ability, the author identified habit and conformity pressure as the two main interrelated barriers. Davis related these barriers to the personality concepts of rigidity, fixation, predisposition, resistance to change, tradition-orientation, fear of the unknown, and occasionally obstinateness.

Platt and Spivack (1975) expressed concern that theorists have not distinguished between the problem-solving processes required by impersonal intellectual tasks and the thinking demanded when confronted with interpersonal problems. Platt and Spivack (1975) stated that ability to solve nonsocial tasks cannot predict how well an individual will manage a conflict with another person, and they are unwilling to generalize research findings related to nonsocial tasks to an individual's personal or interpersonal problems.

Some studies have focused attention upon the relationship between problem-solving thinking and human social/emotional adjustment. Meichenbaum and Goodman (1971) have conducted studies based on the assumption that children act impulsively because prior to acting they do not think through the problem confronting them. In these studies, the problems presented the children were nonsocial in nature. Meichenbaum and Goodman found it possible to train second-grade children to first speak out loud and finally to themselves about the problem. The children could be trained to instruct themselves while carrying out a variety of paper-and-pencil tasks, varying in difficulty. As a consequence, impulsive handling of other paper-and-pencil tasks was reduced. However, there was no significant change in the children's impulsive behaviors in the classroom.

Levenson and Neuringer (1971) proposed that suicidal behavior among adolescents may reflect diminished problem-solving ability. The WAIS Arithmetic Subtest and the Rokeach Map Reading Problems Test were administered to 13 suicidal, 13 psychiatric but nonsuicidal, and 13 normal adolescents. All subjects were between 15-17 years of age; the three groups of adolescents were each composed of six females and seven males. The suicidal

group was composed of patients who had been hospitalized on the adolescent ward of a state hospital because of serious suicidal behavior. Psychiatrically disturbed but not suicidal adolescents from the same ward were used for comparison purposes. Normal adolescents from a nearby community were used as a second comparison sample. The Rokeach Map Test Problems was a modification of a test developed by Rokeach in 1948. Rokeach asserted that the ability to solve the task depends on "flexibility of thinking."

The subjects were asked to draw the shortest route from one point on the map to another point on the map, the same task applying to a series of maps. It was hypothesized that the suicidal subjects would be more rigid in their thinking than the other two groups in the study (Levenson & Neuringer, 1971). The results were that the suicidal adolescents made lower WAIS Arithmetic Subtest scores and failed the Rokeach Map Test Problems more often than the psychiatric and normal groups. On the WAIS Arithmetic Subtest, the normal adolescents made the highest mean score; the next highest mean score was made by the psychiatric subjects; the suicidal subjects made the lowest score; however, analysis of variance did not

demonstrate that these differences were statistically significant.

On the Rokeach Map Reading Test problems (Levenson & Neuringer, 1971), 13 suicidal subjects, two psychiatric subjects, and one normal subject failed to solve the task. Chi-square analysis of the data gave the value 14.58 ($df = 2, p < .01$). Further analysis, not identified in the research report, reportedly indicated that the source of the difference was between the suicidal adolescents as one group and the psychiatric and normal adolescents as another group. The results were interpreted to mean that the group of suicidal adolescents were less able than were other abnormal and normal adolescents to shift to a more efficient method of route-drawing on a paper-and-pencil map task. No explanation was offered as to normal and nonsuicidal psychiatric adolescents not differing on the measured flexibility of thinking. Contrary to Platt and Spivack's (1975) assertion, Levenson and Neuringer (1971) affirmed that even though the problem-solving tasks presented the subjects were hypothetical and nonsocial, the tasks require and measure the same problem-solving capacity required by the suicidal adolescents' problems of living.

Early studies which focused on thinking skills in the area of interpersonal events were those by Muuss (1960) and Ojemann (1967). The concept investigated by these researchers was causal thinking. Causal thinking as defined and measured by Muuss (1960) includes an individual's ability to defer judgment until more information is available and to see things from the viewpoint of other persons; causal thinking includes having insight into the dynamics of other persons' problems and behaviors. Muuss (1960) proposed that a causally oriented person is aware of consequences and is "better able to solve his own problems and to meet social situations" (p. 122). Platt and Spivack (1975) proposed that through training programs and/or therapy, causal thinking may be taught to individuals, contributing to improved social and emotional adjustment. A related concept, perspective-taking, has been the subject of more recent research (Marsh, 1978; Marsh, Serafica, & Barenboim, 1980); these studies have addressed the effect of perspective-taking training on interpersonal problem-solving.

The cognitive processes that comprise personal and interpersonal problem-solving thinking are implicit in theories of healthy functioning (Platt & Spivack, 1975). Hartmann (1964) asserted that the ability to think

rationally has been one element in scientists' attempts to define psychological health. Similarly, Jahoda (1953) emphasized the importance of the capacity to problem-solve real life situations as a criterion for defining positive mental health. Jahoda (1953) stated that neither problem solving nor certain cognitive tendencies singly should be regarded as indicating psychological health. Rather, certain modes of problem solving occurring with certain cognitive tendencies indicate psychologically healthy behavior (Jahoda, 1953).

Researchers and clinicians have not responded to Jahoda's suggestion that the modes of problem solving and coinciding cognitive tendencies, jointly implying psychologically healthy behavior, be examined. The focus for both researchers and clinicians has remained processes such as motives and conflicts that interfere with the ability to face and resolve problems (Platt & Spivack, 1975). The capacity to exercise good problem-solving thinking has not been the issue for study. Platt and Spivack (1975) indicated that in clinical practice, there has been an implicit assumption that once conflict is resolved or anxiety reduced, good problem-solving thinking will naturally emerge. With this assumption, the study of how one learns to think about

solving interpersonal problems has remained an unexplored area.

Interpersonal Cognitive Problem-Solving (ICPS) Skills

Spivack, Platt, and Shure (1976) proposed that the quality of solution of interpersonal problems is probably due to a complex of interrelated factors, including the material and social resources available to the individual at the time. They indicated that it is the process of how the individual thinks about and works through the interpersonal situation, rather than what he/she thinks, that defines the individual's social problem-solving capacity; and they identified means-ends thinking as the determinant of the quality of the problem-solving outcome.

Spivack et al. (1976) proposed a theory of cognitive problem-solving that suggests that there is a grouping of interpersonal cognitive problem-solving (ICPS) skills that determine the quality of one's social adjustment. The processes involve sensitivity to the presence of personal or interpersonal problems, ability to generate alternate courses of actions, ability to conceptualize the means to solve a problem, and sensitivity to consequences in human behavior. The purposes of their research have been to identify and measure the ICPS skills, to demonstrate their

relationship to social adjustment, to discover how they are learned and how they evolve and change through the life span, to understand their relationship to motivational and affective elements in the person, and to develop educational and treatment programs to enhance the operation of the ICPS skills (Platt, Scura, & Hannon, 1973; Platt, Siegel, & Spivack, 1975; Platt & Spivack, 1972a, 1972b, 1974, 1975; Platt, Spivack, Altman, Altman, & Peizer, 1974; Spivack, Platt, & Shure, 1976).

Interpersonal problem-solving skills have relevance to human social and emotional adjustment across a wide age span and across socioeconomic groups. Spivack et al. (1976) hypothesized that the significance of each of the proposed grouping of interpersonal cognitive problem-solving (ICPS) skills in determining the degree of social adjustment may differ as a function of age. These skills may emerge at different ages, depending on the capacity of the developing child and the cognitive demands of the skill. The same authors suggested that one skill may play a more significant role than another in the social adjustment of the individual, depending on age. The ICPS skills are not personality traits, nor are they merely one facet of general intelligence as measured by standard IQ tests.

These skills comprise a grouping of skills that are learned through experience with other people, particularly childrearsers. How well the growing child evolves these skills will reflect how much these forms of ICPS thought are manifest in adults around him at home, especially during the resolution of real interpersonal problems in the family. (Spivack et al., 1976, p. 7)

Means-Ends Thinking

One of the most important interpersonal cognitive problem-solving (ICPS) variables is that of means-ends thinking (Spivack et al., 1976). This skill involves the ability to orient oneself to and conceptualize the step-by-step means of moving toward a goal. The first measurement of means-ends problem-solving cognition was by Spivack and Levine (1963), who studied the relationship of interpersonal problem-solving skills to adjustment in adolescents. In this study, the investigators compared a group of adolescent boys at a residential treatment center who were showing poor social and emotional self-regulation with a matched group of normal adolescents from similar socioeconomic backgrounds. For four means-ends problem-solving stories combined, the residential treatment group showed a significantly lower number of means.

Spivack and Levine (1963) found that the normal group also had significantly longer stories than the group in the treatment center. Failing to find a significant

relationship between story length and means-ends scores in either group, it was concluded that the number of means was unrelated to story length. In this study, as well as in later studies of interpersonal problem-solving abilities, means-ends cognition was not found to be a function of IQ in either the disturbed or control groups.

In the Spivack and Levine (1963) study, there was no relationship between means-ends cognition scores and total scores on the Wechsler Adult Intelligence Scale (WAIS) for either the normal or emotionally disturbed groups. Contrasted with impulsive adolescents, the normal adolescents were found significantly more likely to mentally preview the pros, cons, and possible consequences involved in making the decision in the presented interpersonal problem-solving situation (Spivack & Levine, 1963). The "stories" presented the subjects were brief descriptions of initial problems that were later resolved; the subject's task was to connect the beginning given with the end given, by providing the intervening events (the "means"). The subjects' responses were scored for individual relevant steps in problem solving (means), awareness of potential obstacles, and awareness of the passage of time.

The significance of means-ends thinking appears to change little from adolescence to adulthood; there persists a clear relationship of this variable to adjustment status (Spivack et al., 1976). The authors claimed evidence that degree of means-ends cognition is directly related to adjustment level within adolescent and adult patient groups.

The first in a series of studies of means-ends thinking in adults involved a comparison of psychiatric patients in treatment in an intensive-care short-term inpatient facility with a nonpatient group (Platt & Spivack, 1972a). Most of the patients were diagnosed schizophrenic. To assess interpersonal cognitive problem solving, the subjects were administered the Means-Ends Problem-Solving (MEPS) problem situations individually, and their performances were compared with those of hospital employees with similar age and educational characteristics.

The subjects were administered nine stories which specified the beginning and the end of the problematic situation; the subject's task was to identify the means of solving the presented problem. The findings of the study (Platt & Spivack, 1972a) indicated that each of the nine stories contributed to differences between the two

groups. With one exception, scores were not related to diagnostic category. Patients with a manic-depressive diagnosis tended to have higher scores than diagnosed schizophrenics, although this tendency did not reach significance.

Compared with controls, patients had a lower mean relevancy ratio, reflecting a significantly smaller proportion of relevant means among all story-directed responses (Platt & Spivack, 1972a). Normals gave significantly more enumerations of means than did patients; there were no differences between the groups with respect to the story elements of obstacles and time. "Enumerations of means" were additional details concerning a particular step in the problem-solving of the story. "Obstacles" were difficulties identified in reaching the goal, either external or internal to the problem-solver. "Time" was a specified amount of time elapsing between the beginning and the end of the story, as specified by the problem solver.

Research on interpersonal cognitive problem solving in adults has focused primarily on the means-ends variable. Spivack, et al. (1976) reported that means-ends thinking is recognized as the most significant ICPS skill related to social adjustment.

Spivack, et al. (1976) also reported that evidence indicates that means-ends thinking is intimately related to adjustment during adolescent years. Attempting to achieve a goal in an interpersonal context, maladjusted groups, when compared with adjusted groups, have been found to be less able to conceptualize a step-by-step plan that incorporates details of action, consideration of potential obstacles, and appreciation of a temporal component. Spivack et al. (1976) asserted that means-ends thinking of relevancy to social adjustment is related to and effective with interpersonal problematic situations, not problem situations of other kinds.

The capacity to think in terms of means-ends is not present in preschool children (Larcen, Spivack, & Shure, 1972; Shure & Spivack, 1972), but evolves and relates to adjustment during middle latency years and continues as a significant mediator in adolescence. Developmental differences of the various age groups require that the instruments measuring means-ends problem-solving abilities of persons be appropriate to those ages.

To date, four separate means-ends problem-solving instruments are available. The Means-Ends Problem-Solving (MEPS) Procedure is utilized to measure the problem-solving ability of adults and adolescents with a minimum

age 13 years. For children ages 6 through 12 years, the Children's Means-Ends Problem-Solving Procedure (Children's MEPS) is utilized to measure problem-solving ability. The recently developed Social Problem Situation Analysis Measure (SPSAM) is utilized to measure the problem-solving ability of children ages 6 through 10 years (Elias, 1978); and the Preschool Interpersonal Problem Solving Test (PIPS Test) is utilized to measure the problem-solving ability of children ages 4 and 5 years (Shure, 1978).

Interpersonal cognitive problem-solving skills may not be manifest for two broad classes of reason (Spivack, et al., 1976). One reason is that the individual may not have adequately learned such cognitive skills or may not have been exposed to them at all. A second reason is that the individual may fail to manifest good interpersonal problem-solving thinking on a particular occasion because the situation arouses emotions that interfere with his usual social sensitivities or inhibit him from freely exploring available options. It is the failure of these thought processes to function that leads to interpersonal misjudgement and social frustration.

In the case of a general social cognitive deficit of function in the individual, the deficit could occur as part of a general deficiency in all areas of intellectual

stimulation in the home or as a consequence of family emotional dynamics that restrict any opportunity to acquire the ICPS skills (Spivack, et al., 1976). Closed family systems are hypothesized to reflect deficiency in this area (Bowen, 1976; Schiff, 1975).

Weinstein (1969) offered speculation on interpersonal problem solving, viewing it as the ability of people to achieve their purposes when interacting with others. Such competence is said to depend upon one's empathy, defined by Weinstein as the ability to see the other's perspective, acquiring a repertoire of tactics to use with others, and a variety of personality parameters that may inhibit or augment such competence.

More globally, Newell and Simon (1972) spoke about the world as being populated by a great many problem solvers. Insofar as there are different ways of approaching a task, there need be no behavioral similarity among several problem-solvers; the commonalities of problem solving depend on commonality of situations and goals (Newell & Simon, 1972). Culture, age, education, socioeconomic class, experiences, jobs, interpersonal communications, and books read are some of the factors which serve to influence an individual's problem-solving thinking

and behavior. Duncan (1959) specified age as an effective variable in most types of problem solving.

There has been a recent surge of studies of interpersonal problem solving. The increase of scientific investigation of problem-solving variables within various populations has occurred within the past 2 years (Appel & Kaestner, 1979; Gotlib & Asarnow, 1979; Intagliata, 1978; McClure, Chinsky, & Larcen, 1978).

Also within the past 2 years, interpersonal problem-solving has been the research topic of several doctoral dissertations within the psychology discipline. Similar to the earlier studies addressing interpersonal problem-solving, some of the dissertations (Chandler, 1978; DeLong, 1978; Eleftherios, 1978; Hayes, 1978; Kolman, 1978) investigated interpersonal problem-solving abilities within and among specific groups, as related to specific variables. Other studies (Barckley, 1979; Illig, 1978) examined interpersonal problem solving with respect to communication theories and patterns. Still other studies attempted to contribute to the validation of present measures of interpersonal effectiveness (Nowinski, 1978). The studies addressing training programs for the teaching of interpersonal problem-solving abilities (Foster, 1979; Marsh, 1978; Mitchell, 1979; Schner, 1979) seem to be

implementations of earlier recommendations by Platt and Spivack (1973).

Families of Persons Diagnosed Schizophrenic

The etiology of schizophrenia remains an area of controversy among theorists. The organicity-environment, nature-nurture controversies from the past continue in the present. The role of social factors, especially the intrafamilial ones, in the understanding, intervention, and management of schizophrenia is finding justification in the studies of past and present researchers. A voluminous literature regarding schizophrenia as a scientific enigma is available.

What schizophrenia is or is not has been a subject of contention since the term was coined by Bleuler in 1911. Application of the term "schizophrenia" has been shown to be affected by such factors as the nature of the relationship established in the diagnostic interview, the context within which the interview is conducted (e.g., hospital or clinic), and the diagnostician's theoretical background and training (Salzinger, 1973; Szasz, 1976). Of all mental disorders, schizophrenia is often said to be the condition with the most disputed definition (Sartorius, Shapiro, & Kimura, 1975).

Schizophrenia always involves deterioration from a previous level of functioning during some phase of the illness in such areas as work, social relations, and self-care. . . . Invariably there are characteristic disturbances in several of the following areas: content and form of thought, perception, affect, sense of self, volition, relationship to the external world, and psychomotor behavior. It should be noted that no single feature is invariably present or seen only in Schizophrenia. (DSM-III, 1980, pp. 181, 182)

Salzinger (1973) asserted that one of the most difficult problems posed in research involving the mentally ill is that of making accurate measurements of the patient's behavior, such as degree of psychopathology, change as a result of treatment, and symptom patterns. Lacking independent and objective correlates of emotional and behavioral disturbances, psychiatry is vulnerable to social influences (Sartorius, et al., 1975).

Roff (1976) emphasized that schizophrenia as diagnosed in the United States yields a heterogeneous group with notable differences in clinical picture, family characteristics, and long-term outcome. Roff asserted that the heterogeneity indicates a need for more homogeneous entities within the larger group and that in future research efforts should be made to consider the mixture of influences contributing to the above-mentioned differences. Roff expressed optimism in developmental patterns and family characteristics serving as selection criteria.

Bannister (1968) affirmed that what is needed is not more data but rather a more logical delineation of research in the field of schizophrenia. The second requirement is the linking of conceptual and operational definitions. Bannister (1968) criticized research of a completely empirical nature that simply asks if persons diagnosed schizophrenic differ from normal persons in a specific variable without making any attempt to relate such a difference to a network of theory that has been supported by other data.

Noted theorists (Bowen, 1961; Jackson, 1960; Laing, 1960; Lidz et al., 1965; Wynne, 1970) have identified the family as the main functional unit of social culture and as the unit for research and study in the nature and etiology of schizophrenia. A commonality of studies by these theorists and their colleagues was referral to some peculiarities of behavior and communication found in the families under study. Guirguis (1980) recently compared and evaluated the above-mentioned five major schools which influenced the studies of families of persons diagnosed schizophrenic.

Bowen (1961, 1965) was of a psychodynamic discipline. Bowen's concept of schizophrenia was that it is an expression of the entire family's psychosis and that it is by drawing the child into an interdependent triad of

relationships in which contradictory demands are made upon him that the family "causes" schizophrenia (Guirguis, 1980). Concepts unique to Bowen's theory are "emotional divorce" and "the interdependent triad" (Bowen, 1961, 1965, 1976).

Prior to the mid-1940s, family members other than the "identified patient" were rarely involved in any aspect of the one member's psychotherapy. In this way, the notion that individual psychopathology was the result of intrapsychic conflict alone was perpetuated and rarely challenged (Goldenberg & Goldenberg, 1975). The rapidly expanding child-guidance movement in the mid-1940s and increased interest in marital counseling were beginning acknowledgements that individual distress was related to interpersonal conflicts as well as intrapsychic pressures. In addition to highlighting the importance of symbiotic relatedness in families of persons diagnosed schizophrenic, Bowen was one of the pioneers in the development of family therapy for those families (Searles, 1965).

Goldenberg and Goldenberg (1975) reported clinical investigations of family interactional patterns which were carried out by Sullivan in 1947, Fromm-Reichmann in 1948, Bateson in 1956, Lidz and his colleagues in 1963, Bowen in 1960, and Wynne in 1958. These theorists and researchers

examined, more closely than in past research, the social interaction patterns within families in order to discover the possible link between specific features of family life and the etiology of disordered behavior.

More recently, many researchers (Borgman & Monroe, 1975; Brown, Birley, & Wing, 1972; Haley & Hoffman, 1967; Leff, 1976; Messer, 1971; Vaughn & Leff, 1976; Wild, Shapiro, & Abelin, 1977; Wynne, 1970) have continued to investigate the influence of family and social factors on the course of schizophrenia and other psychiatric illnesses. The etiology of schizophrenia continues to puzzle clinicians and researchers, but evidence to date suggests that persons with an established diagnosis of schizophrenia are highly responsive to their social environments and, more specifically, to the influence of family life.

Jones, Rodnick, Goldstein, McPherson, and West (1977) examined parental transactional style deviance, as measured by the Thematic Apperception Test (TAT), as a possible indicator of risk for schizophrenia. Accepting previous research findings that transactional style deviance is an attribute of parents of offspring with a schizophrenia diagnosis, the researchers hypothesized that parental transactional style deviance might serve as an indicator of risk for the subsequent development of adult

schizophrenia in emotionally disturbed but currently nonpsychotic adolescents. The study was of potential value for primary prevention interventions. The study presented no conclusive findings regarding identifying adolescents at risk for schizophrenia. One recommendation for further study of transactional style was the employment of individual assessments of the parents, siblings, and target child in addition to an assessment of the familial social system for the determination of a more effective combination of predictors.

Family therapists are distinct as a group largely because of the common assumption that if the individual is to change, the context in which he lives must change (Haley & Hoffman, 1967). These researchers asserted that only by observing a person diagnosed schizophrenic in interaction with his significant others can one discover that the individual's bizarre behavior is meaningful and adaptive to his natural setting. The unit of treatment is the set of relationships rather than the individual. Feinsilver (1970) addressed the increasing focus on the study of distorted communication in families of persons diagnosed schizophrenic.

Ackerman (1970) clarified that "family" does not necessarily mean a biological relationship. Instead,

family can best be thought of in terms of the functioning group living together in one household. Bowen's (1961) concept of family is congruent with Ackerman's definition.

Herschkowitz and Kahn (1980) challenged the literature on family theory and therapy which views the family as a functional or dysfunctional system, suggesting that for reasons external to the family unit, one member may become dysfunctional and thereby significantly affect the system. This view is the reverse of the assumption generally held by family therapists, which is that the system affects the individual member (the subsystem). The authors presented two cases that demonstrated changes in the family system precipitated by crises in one family member.

The intention of the Herschkowitz and Kahn (1980) study was to take into account some aspects of psychoanalytic theory of personality and some aspects of family systems theory. The goal was to demonstrate how theoretical constructs in psychoanalytic and family systems theories can be unified to enhance an understanding of individuals and their families. Unlike individuals, whose conflicts arise from intrapsychic events, the dynamics within a family can be seen to result from interpsychic events, that is, from conflicts among the various members of the system in an attempt to gratify their individual

strivings. As in intrapsychic conflicts in the individual, interpsychic conflicts within the family have genetic roots (Herschkowitz & Kahn, 1980). These researchers asserted that family systems conflicts are functions of transmission of patterns from earlier systems, and that each family system presented with a similar problematic situation would react to the situation with behavior based on the system's point of fixation.

Other theorists and researchers (Ackerman, 1970; Richter, 1976) have addressed the interrelationship of psychoanalytic theory and family systems theory. Historically speaking, Ackerman (1970) stated that it was psychoanalysis that gave emphasis to the role of family conflict in mental illness.

Describing common objects as a test of communication between family members involves the task of properly conceptualizing those objects. Feinsilver (1970) examined the communication between family members by presenting the task of communicating the essential attributes of common household objects from one person to another. A group of six families, each consisting of a mother, father, a child diagnosed schizophrenic, and a nonschizophrenic sibling, was compared with a control group of six "normal" families. The verbal interaction of all the various

pairings within each family was scored according to the following categories: misidentification of the object, inappropriate conceptualization, and impaired focal attention. Impaired focal attention was the listener's weakened ability to focus attention on the meaning of what was being communicated.

In every category, the families of the persons diagnosed schizophrenic performed significantly more poorly than the families designated the normal controls. Grand totals of the categories differentiated the two groups (Feinsilver, 1970). Focal attention totals showed a significant difference between the two groups. A comparison of the various pairings within the families reportedly revealed that there were no significant differences between the communication from the parents to the child diagnosed schizophrenic and to his/her nonschizophrenic sibling; the p value was not reported.

Comparing the pairings within the normal family group with the pairings within the family group of persons diagnosed schizophrenic, the greatest difference was between the normal child-sibling pairing and the schizophrenic child-sibling pairing. Feinsilver (1970) concluded that although the study provided significant findings, it was a preliminary investigation of a technique

which might prove useful in differentiating families of persons diagnosed schizophrenic from other families, including normal families or families of another psychiatric population such as sociopaths, depressives, and neurotics.

The failure to find significant differences between the communication to the family member diagnosed schizophrenic and his/her nonschizophrenic sibling nor between any of the pairings within the families, suggested that impaired communication as measured in Feinsilver's (1970) study is probably a function of the total family and not of the patient; and it alone cannot account for the patient, rather than his/her sibling, becoming schizophrenic. Feinsilver related the findings to previous research (Singer & Wynne, 1965a, 1965b, 1966; Wynne & Singer, 1963a, 1963b).

Studies by Morris and Wynne (1965), Longabaugh and Hayes-Roth (1973), Bourne, Abraham, Brauchi, Justesen, Beeker, Whitaker, and Yaroush (1977), and Pishkin and Williams (1977) focused on the concept of thought disorder, which is noted as one of the most characteristic features of schizophrenia. Morris and Wynne (1965) examined the interactions of identified schizophrenics and their parents, concluding that the kind and extent of thought disorder of the person diagnosed schizophrenic may be

genetically and/or interpersonally transmitted to him by his parents. The researchers elaborated that if the mode of transmission is via interpersonal interactions, it would be possible for the identified schizophrenic to induce the same behavior in other persons. The literature does not reflect studies of the relationship of thought disorder and interpersonal problem solving, but thinking and concept distinction are necessary to problem solving.

Wynne and Singer (1963a) made reference to "transactional thought disorder" within families of persons diagnosed schizophrenic, stating that within these families the degree of disturbance in family transactions is greater and qualitatively different from that found in the contributions of any individual family member. Wynne and Singer spoke of a "thought disorder" of a particular variety and intensity in the family social system of a person diagnosed schizophrenic, also referring to "disjunctive family transactions."

Wynne and Singer (1963a) continued saying that disturbed thinking in individual family members may be difficult to detect in emotionally protected or constricted, role-structured relationships, but that it is readily revealed when the family members verbally interact, in unstructured test situations, and in

unstructured psychotherapeutic relationships. Within the family, the impact of fragmented communication builds up over time. The authors referred to studies which have suggested that intrafamilial communication and relationship patterns can be linked to forms of personality organization, including styles of thinking, in offspring who have grown up in these families.

Interpersonal Problem-Solving within Families
of Persons Diagnosed Schizophrenic

Socioeconomic status is a variable to be considered in families' interpersonal problem-solving abilities. Some existing evidence and theory that focuses on the family as a problem-solving unit (Aldous, Condon, Hill, Straus, & Tallman, 1971; Strauss, 1968) hypothesized that families from different social classes differ in the ability of the family group to manage "the kinds of novel and problematic situations characteristic of a rapidly changing urban-industrial society" (Strauss, 1968, p. 417).

Weinstock (1967) found that adults who in their early childhood were raised in lower-class homes, generally characterized by more punitive and less verbally clear childrearing practices, were more prone 30 years later to utilize denial defenses than were the adults raised in families of higher social class. Results from a number of

studies (Fried, 1975; Hunt, Gurrslin, & Roach, 1958; Kosa & Robertson, 1975; Rosen, 1956, 1959; Schubert & Miller, 1980; Wild, Shapiro, & Abelin, 1974) were congruent with the above-mentioned findings in identifying socio-economic status, ethnicity, culture, social environment, and family environment as factors influencing one's manner of coping with stress, being achievement-oriented, having access to psychiatric resources, and responding to psychiatric treatment.

Schubert and Miller (1980) investigated social class as related to a treatment outcome measure. The results of their study, demonstrating distinction of social classes IV and V, the two lowest classes, with respect to the treatment response examined, recommended that social classes be considered separately for both research and clinical purposes.

Fried (1975) reported that in the United States the lowest social classes have the highest rates of severe psychiatric disorder. Fried expressed optimism with the continuous growth of literature addressing the social forces that influence potentials for malfunction, that define acceptable and unacceptable behavior in the community, that produce resources differentially for different communities and subpopulations, and that affect

the paths to treatment and the outcome of diagnosed malfunction.

The same author (Fried, 1975) indicated that since 1922 the rate of psychiatric hospitalization of Blacks has continued to increase more rapidly than psychiatric hospitalization of Anglos. Shorter community residence of emotionally disturbed persons in Black communities implies lower community tolerance for psychiatric symptoms among Blacks than among Anglos. Fried (1975) reported that among several studies of race differences and the distribution of psychiatric disorders, the Black-Anglo difference was the largest and most consistent. The conclusions that can be drawn from Fried's (1975) reports are limited, since the methodologies and statistical analyses of the cited studies were not presented.

Bee (1971) studied the significance of maternal behaviors in the development of the young child's cognitive abilities. Comparing the behavior of lower-class and middle-class mothers in both an unstructured waiting room and a structured child-task situation, Bee noted that the lower-class mother was less attentive and, when attending to her child, would more often tell the child what to do or disapprove of what he/she was doing. Analysis of the language used by the mothers revealed further differences.

Middle-class mothers, compared with lower-class mothers, used longer and more complex sentences, relatively more adjectives, and fewer personal references, all associated with a more elaborate linguistic code.

Strauss (1968) examined problem-solving behavior in a laboratory situation. Subjects were middle-class and working-class families consisting of mother, father, and a 12-year-old offspring. Observation and measurement of family group behavior revealed that in comparison with middle-class families, lower-class family members functioned more in isolation from one another, shared verbal information less often, and were less prone to act out a potential solution to other family members. Across three cultures--Bombay, San Juan, and Minneapolis--the lower-class families were more restricted in the range of solutions that were attempted and in the amount of verbal and nonverbal communication within the family. The number of action options displayed was correlated with the quality of problem solving that resulted (Strauss, 1968).

Minuchin, Chamberlain, and Grambard (1967) studied the behavior of a disorganized family, which included a disturbed and delinquent adolescent, when problems arose within the family. The researchers noted a marked deficit in verbal communication when an issue of rules arose in

the family or when there was an expressed need on the part of a family member. Intensity of sound and action rather than the logic of argument determined "power." Family talk was interruptive and of great volume, topics were not focused upon, questions were not elaborated, and information was not gathered in an organized fashion. In communication between child and adult, the child learned to focus almost exclusively on who the adult was, to the relative exclusion of the content of the communication. There was a tendency for problems to not be resolved (Minuchin et al., 1967). Their findings are congruent with Bowen's (1976), Satir's (1967), and Schiff's (1975) descriptions of dysfunctional families.

Reiss (1971) evolved a theoretical system within which total families have been categorized. Each of the three family categories--"environment-sensitive," "consensus-sensitive," and "interpersonal distance-sensitive"--has implications for how effectively a family unit responds to problems confronting it. The environment-sensitive (normal) family sees the problem as "out there," logically searches for solutions, and is open to cues about the problem and its possible solutions from both inside and outside the family. The problem-solving

process is characterized by a sharing of experience with a sense that consensus is possible.

Reiss (1971) referred to the third family type as the interpersonal distance-sensitive family. Confronted with problems, family members approach problem analysis and solution as simply a means by which each can show independence from the family. Each member has a private space of laws and values, and each functions alone on the assumption that nothing he or she does can be useful to or evaluated by others. Members of this type of family are isolated. As a consequence, there is no sense of sharing in problem solving. Family members may be in constant conflict, preoccupied with their own satisfaction and point-of-view, with little, if any, sense of emotional connection. Reiss (1971) saw families of delinquents as fitting this category.

The consensus-sensitive family approaches a problem as a potential threat to its solidarity. Such a family is not open to all external cues. Members are quick to surrender their individual ideas, and dissent is not tolerated because the family goal is always to maintain a close, uninterrupted agreement. As a consequence, the family reaches consensus too quickly and may even experience illusion. Reiss (1971) viewed the "schizophrenic

family" as an extreme example of the consensus-sensitive type, and has provided some evidence to this effect (Reiss, 1967, 1968, 1969).

Reiss' theoretical framework (1971) is congruent with family systems theorists (Ackerman, 1966; Bowen, 1976; Jackson, 1960; Kantor & Lehr, 1975; Lidz et al., 1965; Satir, 1967; Skynner, 1976). Other researchers (Friedman, Boszormenyi-Nagy, Jungreis, Lincoln, Mitchell, Sonne, Speck, & Spivack, 1965; Hoover, 1965; Mishler & Waxler, 1968; Scott & Askworth, 1967) have also reported the overcontrol of family members and the boundaries unique to the closed family system of persons diagnosed schizophrenic.

The view that certain parameters of childrearing or parent-child interaction may influence the child's cognitive development has been well-documented insofar as abstract, impersonal intellectual development is concerned. Hess and Shipman (1965) studied the interaction of mother and child to assess how a mother assists her child in handling an intellectual task, and how differences reflect a more general cultural deprivation. In noting differences, Hess and Shipman (1965) referred to both the style of approach and to more specific qualities of the mother-child interaction.

Ferreira and Winter (1968) compared "normal" and "abnormal" families of three decision-making variables--spontaneous agreement, decision-time, and choice-fulfillment. The definition of abnormal families was "families where simply emotional problems were acknowledged, whether attributed to any individual member or to the family group" (pp. 17-18). The normal families were families in which

there was no known emotional or criminal problem for any of its members for a period of at least five years prior to the testing; no family member or member or members had received, or been recommended to receive, any form of psychotherapy for at least the past five years; and the overall behavior of the family had not been considered abnormal by the referring source.
(p. 18)

The task presented the subjects was not interpersonal in nature; instead, a questionnaire referring to a number of "situations" was given each subject (Ferreira & Winter, 1968). Each of the seven situations had 10 alternatives or choices from which the family members could choose. A total of 85 families (36 normal, 49 abnormal) were tested. Previous research investigating the variables specified in this study had been confined to family triads (father, mother, and one child); this study was of family tetrads (father, mother, and two children). Hypothesis one, that the spontaneous agreement

score would be greater for normal than abnormal families, was accepted at $p < 0.05$. Hypothesis two, that the decision-time would be longer in abnormal than in normal families, was accepted at $p < 0.025$. Hypothesis three, that the choice-fulfillment score would be greater in normal than in abnormal families, did not reach the established statistical significance.

The researchers (Ferreira & Winter, 1968) concluded that the testing instrument utilized in this study was not sensitive enough to warrant diagnostic conclusions about particular families, but that it did reveal family measurements of the three variables, permitting placement of the families on the spectrum of normal versus abnormal scores available through the findings of this and previous studies. Goals of these studies have been an increased understanding of the basic issues in family relationships, family interaction, family decision-making, and family "normality" and "abnormality" (Ferreira & Winter, 1968).

Chilman (1966) reviewed the childrearing literature in an attempt to summarize the childrearing patterns reportedly characteristic of families with emotionally healthy offspring. Results of these studies reviewed suggested that such families are sensitive to causes in their child's behavior, considering reasons why specifics

occur; open and free in verbal communication, with control manifest largely through verbal communication, in contrast to physical means; unrepressive and unpunitive in response to the child's questions about sexual behavior; and flexible and open to new experiences.

Similarly, after considering various developmental facets of change in human characteristics, Bloom (1964) concluded that apparent influences on cognitive development are: opportunities for the child to have certain kinds of enjoyable contact with parental figures, including opportunities to solve problems; encouragement to think clearly; and encouragement to attack problems flexibly and while considering outcomes. Schiff's (1975) assertion that through an awareness of oneself, others, and reality situations, one thinks and is able to define problems, determine options to solve the problems, and act effectively on the options parallels Chilman's (1966) and Bloom's (1964) propositions. Schiff (1975) identified the following as important measures for every child to incorporate as his own: "(1) You can solve problems, (2) You can think, and (3) You can do things" (p. 33).

Summary

Knowing the etiology of an illness includes a complete understanding of all contributing factors. To date, this cannot be claimed for schizophrenia. Likewise, numerous theorists and researchers have studied family systems, family interactions, and family conflicts, attempting to distinguish healthy and dysfunctional families. Throughout the literature, definitions of normal, abnormal, healthy, and dysfunctional families have been obscure. The interrelationship of schizophrenia as a psychiatric disorder and family system as a possible contributing factor to the disorder creates additional obscurity.

Thought disorder is noted as one of the most characteristic features of schizophrenia. Thinking and concept distinction are identified as necessary to problem-solving, but the literature to date does not reflect studies of the relationship of thought disorder and interpersonal problem-solving.

Research studies (Platt & Spivack, 1972a; Spivack & Levine, 1963) have shown psychiatric patients and maladjusted adolescents to be less able than normal controls to respond with means-ends thinking and problem solving in hypothetical problematic social situations.

Most research on interpersonal problem solving has been carried out in populations other than adolescents (Spivack, Platt, & Shure, 1976). More intensive study of interpersonal problem solving in adolescents will be of value to researchers in determining the roles played by various problem-solving skills in the adjustment process during the adolescent developmental period. Such understanding would be particularly useful in therapeutic planning for individuals or groups. In addition, more complete data on adolescence would lead to understanding of the developmental sequence in which specific problem-solving skills appear.

There has been limited research specifically relating family or individual parental behaviors to the interpersonal problem-solving ability development of the child. Utilizing family system theory (Bowen, 1961, 1965, 1976) as a theoretical framework, there is reason to anticipate that there would be a direct relationship between certain family and/or parenting variables and interpersonal cognitive problem-solving ability.

Research findings that interpersonal cognitive problem-solving ability was teachable in 4- to 6-year-old children over a 3-month period (Spivack et al., 1976) lends some safety in assuming that an adult in an intimate

parental role has a significant impact on the development of this ability in children. Additionally, the social nature of the interpersonal cognitive problem-solving processes suggests that the social system within which the child grows must play a significant if not the primary role in ICPS development. It seems safe to assume that these ways of thinking are largely learned; the identification of the family or parental influences being most relevant remains the unexplored area.

The study of interpersonal cognitive problem-solving skills as proposed by Spivack et al. (1976) is in its infancy. The research on interpersonal problem-solving in adults has focused primarily on the means-ends variable, which has been described as the most significant ICPS skill related to social adjustment. The Means-Ends Problem-Solving Procedure has not been widely utilized other than by the scientists who developed the instrument. There has been an increased study of interpersonal problem solving as well as the increased utilization of the Means-Ends Problem-Solving Procedure within the past 2 years.

A major finding from the review of the literature was that even though persons with the diagnosis of schizophrenia were subjects in several of the cited studies,

they were compared to control groups of normals or to each other rather than with other members of their own families. A positive outcome of having an advanced scientifically-based understanding of problem solving within families, is that health professionals can potentially intervene at the primary as well as secondary and tertiary levels of prevention. Research findings supporting family systems theory would have implications for family-oriented assessments and interventions.

Research studies have distinguished groups of emotionally ill or socially maladjusted individuals, but findings have been limited to the specific variables of the studies. An insufficient number of studies and findings have been related to previous studies and to existing theories. It is not known if persons diagnosed schizophrenic and their family members are less able than normals to conceptualize the means of solving interpersonal problems.

CHAPTER 3

PROCEDURE FOR COLLECTION AND TREATMENT OF DATA

This investigation was an ex post facto study in which data about the variables presence or absence of schizophrenia diagnosis and interpersonal problem-solving ability were collected, recorded, and analyzed. The problem of the investigation was: Is there a difference in interpersonal problem-solving ability between persons diagnosed schizophrenic and family members of persons diagnosed schizophrenic?

Settings

The settings of this study were the respective homes of the 15 selected families. The larger setting which encompassed four of the families' homes was a large metropolitan city located in the Southwestern section of the United States. Three small cities in a North-Central rural area of the United States were the larger settings encompassing 11 of the families' homes.

Since the investigator was a visitor of the families in the families' familiar environments, the investigator did not specify the rooms in which the testing took place.

The only specification was that the testing occur in a quiet room, away from distractions and interruptions as much as possible, where the individual subjects and the investigator could be comfortably seated and could hear each other. In the majority of the homes, the initial family interview for the collection of demographic data and the individual testing procedure took place in the front room or the kitchen.

Target Population and Sample

Selected from the outpatient populations of three selected community mental health centers affiliated with county or multi-county mental health and mental retardation programs, the target population was all families in which one family member had the clinical diagnosis of schizophrenia. Other delimitations, or controlled variables, of the study were: (a) subjects were voluntary, and subjects under age also had parental consent for participation, (b) the specified age range of subjects was 13-62 years, (c) only those families in which only one family member had the clinical diagnosis of schizophrenia were included in the study, and (d) only those families in which all members of the ages 13-62 years participated in the testing were included in the study. The persons diagnosed schizophrenic had the following characteristics:

(a) they were outpatients who were living at home within a family system, (b) those who had been hospitalized for treatment of the schizophrenia had been discharged from the hospital at least 1 month prior to the testing, (c) the individual had met his/her first outpatient appointment at the community mental health center, and (d) the person diagnosed schizophrenic could be any member of the family, the ages ranging from 13-62 years. The diagnosis of the family member classified as schizophrenic appeared in the client's clinical record at the selected community mental health center.

The convenience sample consisted of the first 15 families who met the delimitations of the study and who agreed to participate in the study. The sample was divided into two groups: one group of subjects was family members currently diagnosed schizophrenic, and the other group of subjects was family members of those persons diagnosed schizophrenic.

Protection of Human Subjects

Prior to the collection of data, approval to conduct the study was obtained from the Human Research Review Committee of the Texas Woman's University (Appendix A) and from the research committees of the community mental health centers selected as the sources for the selection

of subjects (Appendix B). Each subject was provided a verbal explanation of the purpose, procedure, risks, and benefits involved in the study (Appendix C). Each subject signed an informed consent form (Appendix D) prior to the testing procedure. A parent also signed the informed consent forms of those subjects who were minors. Each subject was provided a guarantee of confidentiality and the freedom to withdraw from participation in the study at any time.

Instruments

Two instruments were utilized for data collection. The first was a Demographic Data Form (Appendix E), and the second was the Means-Ends Problem-Solving Procedure for males (Appendix F) and for females (Appendix G).

Demographic Data Form

The Demographic Data Form (Appendix E) was developed by the investigator and consisted of a number of questions requesting the age, sex, and education of the individual subjects, the occupation of the head of the household and any other family members who were in the labor force, the ethnic origin of the family or the family's individual members, and information relating to any of the subjects' current psychiatric medications and recent or previous

psychiatric hospitalizations. The occupational and educational data of this instrument were categorized, using Hollingshead's Two Factor Index of Social Position (Miller, 1977) to determine each family's socioeconomic status. The information obtained by use of the Demographic Data Form was utilized in the descriptive analysis of the families selected for this study.

Means-Ends Problem-Solving Procedure

The Means-Ends Problem-Solving (MEPS) Procedure, developed by Platt and Spivack (1975), was the test administered to all the subjects, since the MEPS is considered valid for both adolescent and adult age groups. The minimum age individual which can be tested by this instrument is 13 years. The MEPS (Appendixes F and G) is designed to measure the individual's ability to orient toward and conceptualize the means of moving toward a goal in a problematic situation.

The MEPS instrument contains 10 stories which present situations in which a need is aroused in the "protagonist" at the beginning of the story, and is satisfied by the individual at the end of the story (Platt & Spivack, 1975). The subject being tested is required to complete the story by filling in those events which might have occurred between the arousal of the need

and the satisfaction of the need. The only difference between the male form and the female form of the MEPS test is the sex of the protagonist in the stories, male for males and female for females.

Each of the hypothetical stories is designed to represent a real-life problematic situation, and most of the stories are interpersonal in nature. The stories are related to a number of different content areas. It is not necessary that all 10 stories be presented to the subject, but the greater the number of stories presented, the greater will be the reliability of the findings. Platt and Spivack have administered a minimum of three stories and a maximum of all 10 stories to the subjects of their studies (Platt, 1978). In this study, six stories were presented to each subject, and the selected stories were interpersonal problematic situations (Appendixes F and G).

Validity and reliability. Validity and reliability have been established for the Means-Ends Problem-Solving (MEPS) Procedure. Construct validity concerns the extent to which scores on the Means-Ends Problem-Solving (MEPS) Procedure, reflecting the quality of means-ends thinking, adequately describe differences among persons tested. Previous studies indicated that the MEPS procedure

discriminated groups of individuals, as well as individuals within groups. Scores on the MEPS differentiated adult psychiatric patients from nonpatients (Platt & Spivack, 1972a, 1973), adolescent psychiatric patients from nonpatients (Platt, Spivack, Altman, Altman, & Peizer, 1974), and heroin addicts from nonaddicts (Platt, Scura, & Hannon, 1973). The MEPS also discriminated levels of social competence within a group of psychiatric patients (Platt & Spivack, 1972b)

Discriminant validity of the MEPS has been established in association with adjustment and with intellectual factors (Platt & Spivack, 1975). The MEPS is not a measure of overall adjustment; the possession of good interpersonal problem-solving thinking is important to but not the sole determinant of adjustment. MEPS scores have minimal relationship to scores on paper-and-pencil measures of personal adjustment. "The correlations of the MEPS scores and the personal adjustment scales have been found to be positive, but low, and of borderline significance" (Platt & Spivack, 1975, p. 60). The MEPS is a measure of cognitive ability; it is not an indirect measure of intellectual ability or scholastic aptitude. The relationship of MEPS scores with scores of aptitude

and intelligence is reported to be low to moderate (Platt & Spivack, 1975).

Content validity is the representativeness or sampling adequacy of the content of the measuring instrument (Kerlinger, 1973). It is the extent to which each item of the test, each story of the MEPS, samples the same quality of thinking. In this study, the quality is problem solving in interpersonal situations. Factor analyses of the MEPS instrument in three samples each resulted in a single factor, suggesting that all the stories measure the same quality of thinking (Platt & Spivack, 1975).

Predictive validity is a measure of an instrument's prediction of future behavior, the prediction later found to be accurate (Treece & Treece, 1977). The following reports the predictive validity of the MEPS.

Youthful heroin offenders were administered the MEPS while still incarcerated. A Pearson correlation coefficient of +.30 was found between number of means and length of time (in days) on parole before re-arrest ($p < .05$). (Platt & Spivack, 1975, p. 62)

A research instrument has concurrent validity if data resulting from its use are related to behaviors in the current situation (Treece & Treece, 1977). The subjects in a research study which measured and established concurrent validity of the MEPS were a group of 45 heroin

addicts who were housed together in a residential treatment setting. The subjects were administered three MEPS stories and were instructed to nominate seven group members who were most approachable and seven group members who were least approachable in the resolution of interpersonal problems. A composite score of the net number of positive minus negative nominations was calculated and two distinguishable high and low nomination groups were identified. The two groups were then compared on MEPS scores. The mean total MEPS score of the high group was 5.50 ($SD = 2.17$), and the mean total MEPS score of the low group was 3.70 ($SD = 1.15$). The t -test analysis produced a t value of 2.31 ($df = 18, p < .025$). The same procedure was replicated with nine staff members providing the ratings of the 45 heroin addicts. Their high rated group was found to have a mean MEPS score of 5.00 ($SD = 2.53$); their low rated group had a mean MEPS score of 2.41 ($SD = 2.53$). The obtained t was 3.00 ($df = 27, p < .01$). The obtained r between the staff and peer ratings was .45 ($df = 34, p < .01$) (Platt & Spivack, 1975).

Test-retest reliability of the MEPS is reported for experimenter-administered and self-administered research studies. One reliability report, in which the MEPS was experimenter-administered and the test-retest interval

was 2-1/2 weeks ($\underline{n} = 15$), gave the statistical findings of $\rho = .59$, $\underline{p} < .05$. The report of a self-administered MEPS, with a test-retest interval of 5 weeks ($\underline{n} = 11$), produced the results $\underline{r} = .64$, $\underline{p} < .05$. Another self-administered MEPS, having an 8-month test-retest interval ($\underline{n} = 47$), showed $\underline{r} = .43$, $\underline{p} < .005$.

Coefficients of internal consistency also demonstrate the reliability of the MEPS. The Spearman-Brown Formula showed the coefficient of 72 male psychiatric patients to be .84, as compared with a coefficient of .82 for 66 female psychiatric patients. The Kuder-Richardson procedure analyzed the coefficient of 72 male psychiatric patients to be .82, as compared with a coefficient of .80 for 66 female psychiatric patients. These results, measured by two separate procedures, reflected a high internal consistency (Platt & Spivack, 1975).

A limitation of the Means-Ends Problem-Solving instrument is that it is not a standardized instrument. Researchers utilizing the Means-Ends Problem-Solving (MEPS) Procedure have presented varying numbers of the problematic stories and have measured various aspects of problem-solving. The MEPS does have standard administration and scoring instructions, but a degree of subjectivity is involved in the scoring procedure. The Means-Ends

Problem-Solving (MEPS) Procedure is the most appropriate instrument available at the present time for the measurement of interpersonal cognitive problem-solving ability.

Norms. Means-Ends Problem-Solving (MEPS) normative scores have been established for male and female populations (Platt & Spivack, 1975). The male categories for which the MEPS norms are established are state university upperclassmen ($\underline{n} = 38$), freshman military college students ($\underline{n} = 28$), hospital employees ($\underline{n} = 16$), penitentiary inmates ($\underline{n} = 54$), reformatory inmates ($\underline{n} = 329$), acute psychiatric inpatients ($\underline{n} = 32$), and extended care psychiatric outpatients ($\underline{n} = 26$).

With two exceptions, the total mean score for all nine stories decreased consistently with each respective male population. One exception was that reformatory inmates ($\underline{n} = 329$) had a higher total mean score (1.32) than did penitentiary inmates ($\underline{n} = 54$, $\bar{X} = 1.08$). The other exception was that extended care psychiatric outpatients ($\underline{n} = 26$) had a higher mean score (.17) than did acute psychiatric inpatients ($\underline{n} = 32$, total $\bar{X} = .63$). State university upperclassmen ($\underline{n} = 38$) had the highest total mean score (2.49), and acute psychiatric inpatients ($\underline{n} = 32$) had the lowest (.63).

The female categories for which the MEPS norms are established are graduate students ($\underline{n} = 23$), state university upperclassmen ($\underline{n} = 31$), student beauticians ($\underline{n} = 44$), hospital employees ($\underline{n} = 45$), acute psychiatric inpatients ($\underline{n} = 23$), and extended care psychiatric outpatients ($\underline{n} = 33$). The total mean score for all nine stories decreased consistently with each respective population. Graduate students ($\underline{n} = 23$) had the highest total mean score (2.25), and extended care psychiatric outpatients ($\underline{n} = 33$) had the lowest (.62).

The established MEPS norms support the interpersonal relationships theory asserted by Platt and Spivack (1972a, 1972b, 1975). Their theory identified normals as most adequate with interpersonal problem solving, deviant populations as less adequate, and identified psychiatric patients as the least adequate with interpersonal problem-solving.

Administration. The Means-Ends Problem-Solving (MEPS) Procedure may be administered by an examiner or may be self-administered, depending upon the educational level and reading ability of the subject. In both cases, the subject is read the standard instructions (Appendix H) immediately prior to the testing. In the case of examiner administration, it is important that the examiner

be certain that the subject clearly understands the instructions before the first story is read. There is to be no prompting by the examiner. Each of the stories is read to the subject once, and the subject's response is transcribed verbatim by the examiner, directly into the test booklet or onto the score form. Condensation is avoided with the transcription, since the examiner/recorder may not be the individual who scores the subject's responses. The instructions are not repeated before succeeding stories unless it becomes obvious that the subject has misunderstood the instructions.

Scoring. Prior to scoring the Means-Ends Problem-Solving test, the investigator is to read through the subject's entire response to the story. The stories can be scored for story content, numbers of relevant means, obstacles, enumerations of means, time, irrelevant means, no-means responses, and relevancy ratio. Descriptions of the scoring categories follow.

1. Relevant means, or means. A "mean" is scored for each discrete step which is effective in enabling the "protagonist" of the story to reach the resolution stage of the story or to overcome an obstacle preventing him/her from reaching the goal in the story. More than one mean can be scored for a subject's response to a given

story. Each mean scored is tallied, being placed in one of several categories empirically developed for each story. Each category includes several different means which are similar, although their exact form differs because of being given by different subjects. A high relevant means score indicates "good" interpersonal problem-solving ability, whereas a low relevant means score indicates a deficiency in interpersonal problem-solving ability.

2. Irrelevant means (IM). An irrelevant mean is scored for a response which includes only steps which are not effective within the context of the story. Such steps could be reasonable and effective if the ending of the story were different. An irrelevant mean is also scored if the subject provides steps which lack the appropriate foundation upon which the middle and the end of the story should be built, even though the steps provided are effective within the context of the story; the underlying mean, or first step, is left out.

3. No-means (NM). A no-means 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: a response which fails to specify in sufficient detail how the goal is

reached; a response which is only the repetition or rewording of the story as given; and a response which is simply a value judgment.

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

5. Enumerations of means. If the subject 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 mean.

6. Obstacles. Any obstacle or difficulty in reaching the goal which the subject mentions is scored as an obstacle. It may be either internal or external to the protagonist.

7. Enumerations of obstacles. Any problem or difficulty that the subject mentions which is an addition to, or an enlargement upon, a previously mentioned obstacle is scored as an enumeration of an obstacle.

8. Time. If the subject specifies an amount of time elapsing between the beginning and the end of the story, one unit of time is scored.

9. Relevancy ratio. The relevancy ratio is the total number of relevant means in relation to the number

of relevant means plus irrelevant means plus no-means. The relevancy ratio score is given each subject for the total number of stories administered, rather than for each separate story.

An MEPS Category Scoring Sheet (Appendix I) exists for each of the 10 stories of the MEPS test and is utilized by the investigator at the time of administration of the test to the subject. Other MEPS scoring forms utilized in conjunction with the category scoring sheet are the MEPS Subject Scoring Sheet (Appendix J), the MEPS Subject Summary Sheet (Appendix K), and the MEPS Sample Summary Sheet (Appendix L). In this study, the MEPS scoring forms were utilized for the individual subjects, the family units, and the two groups.

Spivack et al. (1976) reported that the two scores primarily used in studies are the number of relevant means and the relevancy ratio. Enumerations of means have been found to be so highly related to the number of relevant means that they represent the same quality of thought. Obstacles and awareness of time seem to measure qualities of thought not necessarily related to problem-solving adjustment (Spivack et al., 1976). Only the Relevant Means score was calculated and analyzed in this study.

Data Collection

The investigator obtained written permission from Platt and Spivack (Appendix M) to utilize the Means-Ends Problem-Solving Procedure. Prior to the collection of data from the convenience sample, a pilot study was done by the investigator. One family which met the criteria of the sample was selected by means of convenience sampling, and the investigator completed the Demographic Data Form and administered the Means-Ends Problem-Solving Procedure to the 13-62-year-old members of that one family. The purpose of the pilot study was for the investigator to become familiar with the administration of the two instruments and the scoring of the Means-Ends Problem-Solving instrument. The family selected for the pilot study was assured the same protection of human rights as was identified for the sample. Since no changes of procedure or instruments were effected by the pilot study, the pilot study data were included with the data of the sample.

Upon approval from the specified community mental health centers to select the research sample from their populations, the investigator received the assistance of clinical staff members of those agencies in determining the target population from which the sample was selected.

Potential subjects signed authorizations for release of information, which allowed the community mental health centers to share identifying information with the investigator.

Securing subjects who met the delimitations of the study presented some difficulties. Of the available population, the majority of families in which one member had the clinical diagnosis of schizophrenia were not intact families living together in one household. Separation, divorce, death, the identified patient living in a structured group home setting, and family members being younger or older than the specified 13-62 age range were some of the factors contributing to the families not being intact and, subsequently, not meeting the delimitations of the research study.

The investigator made a first face-to-face contact with each family at the community mental health center. The first contact, during which the investigator described the plan of study and identified the participants' role in the study (Appendix C), was with as many family members as possible from each of the families. The informed consent forms (Appendix D) were signed by the family members at the time of this first contact and were witnessed by an employee of the community mental health

center. Following the family's agreement to participate in the study, the investigator scheduled the home visit with the family. In most cases, the identified patient was the only family member present at the community mental health center at the time of the first contact of the investigator and family. Following the identified patient's expressed interest in participation in the study, including his/her signing of the informed consent form, the investigator and the identified patient agreed that the investigator phone the family for the scheduling of a home visit of the entire family. It was during that visit of each family that the plan of study and the identification of the participants' role in the study (Appendix C) was read to the family, as had been done with the identified patient during the first contact at the community mental health center. The informed consent forms (Appendix D) were signed by the family members following their verbal agreement to participate in the study. It was during the same home visit that the data were collected. Each of the 15 families was visited only once for the data collection.

In each case, confidentiality of the subjects' identifying information was assured. The subjects' names were not placed on the test forms; number codes

were used on the demographic data form and on the MEPS scoring forms to identify each person diagnosed schizophrenic and family members as members of the same family. The coding format utilized in the study produced such numbers as 1.4, 2.1, 3.2, and 4.3. The number preceding the decimal point identified the family number; the number following the decimal point identified the family member; number 1 was the father, number 2 was the mother, and all other numbers were the offspring listed chronologically from oldest to youngest.

Demographic Data Form

Prior to administering the Means-Ends Problem-Solving Procedure, the investigator verbally collected the demographic data by reading the questions of the Demographic Data Form (Appendix E) to the family members as a unit, writing the information on the form as it was provided by the family members.

Means-Ends Problem-Solving Procedure

The Means-Ends Problem-Solving (MEPS) Procedure may be either examiner-administered or self-administered. Taking into consideration the possible range of educational level and reading ability of the subjects, the investigator administered the MEPS to each adolescent and

adult subject. The MEPS was individually administered to each family member ages 13-62 years, one at a time away from the other family members.

The test procedure was verbally explained to each individual subject immediately prior to the individual's participating in the test. The investigator read the standard instructions of the MEPS (Appendix H) to each subject. There was no prompting on the part of the examiner. Each of the six stories was read to the subject once, and the subject's response was transcribed verbatim by the examiner directly onto the category scoring forms (Appendix I). The subjects' verbal responses were not tape-recorded. Condensation of the subjects' verbal responses was avoided in the transcription. The instructions were not repeated before succeeding stories except in the few cases that it became obvious that the subject had misunderstood the instructions.

Due to the time element involved and taking into consideration the subjects' possible declining interest and motivation to continue in the test procedure if the test were to be presented in its entirety, including all 10 stories, only six of the MEPS hypothetical interpersonal problematic situations were presented to each subject. The same six stories (Appendixes F and G) were

administered to each subject, in the same order, beginning with story one and concluding with story six.

Any family member resisting participation in the testing was given a maximum of two opportunities to participate as a subject. In the event that a subject would have become uncomfortable with the procedure, he or she would have been allowed to withdraw from the study; none of the subjects expressed discomfort with the procedure, nor did any of the subjects request withdrawal from the study.

The first step in the scoring process was to read the entire response that the subject had given, in order to evaluate the logic and consistency displayed in connecting the beginning with the end of the study. The scorer (investigator) then identified the means suggested by the subject in reaching the goal.

Hypothetical example of scoring: In story one (Appendix F), Mr. Williams has suggested that the protagonist: (a) think about what to do, i.e., "Introspection," (b) give a speech, i.c., "Campaign speech," and (c) tell the people what to do to improve the neighborhood, i.e., "Offer plans or ideas." Thus, there are three means given. Each of these means will be recorded on the Category Scoring Sheet for story one.

Each of the stories presented to the subjects was scored on the Category Scoring Sheet (Appendix I) specific to each story. The letter corresponding with each of the means (each of the categories) was then recorded next to the subject's number code on the Subject Scoring Sheet (Appendix J) for the specific story. As a final step, the total number of means provided by the subject for each story was recorded on the Subject Summary Sheet (Appendix J), next to the subject's number code. The Sample Summary Sheet (Appendix L) was not completed until all of the responses of the subjects in the sample were scored.

Even though the MEPS score calculated and analyzed consisted of only the number of relevant means, other categories of scores which were documented on the scoring forms in order that the calculation of Relevant Means be accurate were the irrelevant means, no-means, no response, and enumerations of means. These categories were scored in the appropriate columns of the scoring forms. Obstacles, enumerations of obstacles, and time elements offered by the subjects were not recorded on the scoring forms, since these scoring categories were not necessary for determining the number of relevant means.

Analysis of Data

The research hypothesis was: There is no difference in interpersonal problem-solving ability between persons diagnosed schizophrenic and their family members. The demographic data were statistically analyzed and are presented narratively and in table form. The hypothesis measured ordinal scale data and was, therefore, statistically tested by means of the nonparametric Wilcoxon Matched-Pairs Signed-Ranks Test. The level of significance required to reject the hypothesis was set at the .05 level.

CHAPTER 4

ANALYSIS OF DATA

An ex post facto study was conducted to compare the interpersonal problem-solving ability of persons diagnosed schizophrenic with their family members. This chapter is concerned with an analysis of data collected from the subjects' responses to hypothetical problematic interpersonal situations, as measured by a means-ends problem-solving instrument administered to each of the subjects. Demographic data were collected by means of a questionnaire developed for the study, and the Hollingshead Two Factor Index of Social Position (Miller, 1977) was utilized to determine each family's socio-economic status. The demographic data provided the descriptive analysis of the families selected for the study. This chapter consists of a description of the sample, collected data described in narrative and table form, the statistical method utilized, analysis of data, the findings of the study, additional findings, and a summary of the findings.

Description of Sample

The sample consisted of 52 family members constituting 15 families. Each family was composed of a mother, father, and at least one child living together in one household. One family member had the clinical diagnosis schizophrenia. Table 1 presents demographic data which describe the sample families of this study.

The sample consisted of 30 males and 22 females. Subjects ranged in age from 14-62 years. The number of family members ranged from three to five; the mean was 3.47, and the median and mode were 3 members. The number of children per family ranged from one to three; the mean was 1.47, and the median and mode were 1 child. Other offspring of some of the families were either living independently of their families of origin or were younger than age 13 years and thus were not administered the Means-Ends Problem-Solving Procedure.

The subjects were of two ethnic groups, Black (3 families, $\underline{n} = 11$) and Anglo (12 families, $\underline{n} = 41$). The majority of the families were of the lower socioeconomic classes. Four of the families ($\underline{n} = 12$) were of Class V socioeconomic status, seven families ($\underline{n} = 25$) were Class IV, two families ($\underline{n} = 7$) were Class III, and two families ($\underline{n} = 8$) were of Class II socioeconomic status. Class I,

Table 1

Description of Families

Family Identification Number	Number of Members	Age Range of Members	Ethnic Origin	Socioeconomic Class
1	5	20-56	Black	IV
2	3	22-54	Black	IV
3	3	21-51	Black	IV
4	3	14-37	Anglo	III
5	3	25-52	Anglo	II
6	4	24-62	Anglo	III
7	3	20-40	Anglo	IV
8	4	15-54	Anglo	IV
9	3	35-62	Anglo	V
10	3	17-62	Anglo	IV
11	3	30-62	Anglo	V
12	3	15-44	Anglo	V
13	3	26-61	Anglo	V
14	4	26-61	Anglo	IV
15	5	18-44	Anglo	II

n = 15 families

the highest socioeconomic level, was not represented in this study.

All of the subjects having the current clinical diagnosis of schizophrenia were taking prescribed psychiatric medications. Only one of the persons diagnosed schizophrenic had never been hospitalized for treatment of the schizophrenia. The number of hospitalizations for the other 14 persons diagnosed schizophrenic ranged from one to six; the durations of hospitalizations ranged from 1 day to 6 months. The most recent hospitalization was one of the identified patient's 2-week hospitalization 3 months prior to testing. All subjects diagnosed schizophrenic were outpatients of the respective community mental health centers which served as the sources of subjects for this research study. In one family, the identified patient's mother was currently taking a prescribed antidepressant, and she had been hospitalized for the treatment of depression 34 years prior to and 21 years prior to participation in this study; both hospitalizations were of a 3-month duration. In the other 14 families of the sample, the identified patient was the only family member taking prescribed psychiatric medications.

In one of the families, the person with the diagnosis of schizophrenia was the father; in two of the families, the person with the diagnosis of schizophrenia was the mother; and in 12 families, the family member with the diagnosis of schizophrenia was one of the children. Eleven of the persons with the schizophrenia diagnosis were males, and four were females. The mean age of the persons diagnosed schizophrenic was 27.8 years and the mode was age 35. Table 2 presents demographic data which describe the group of persons diagnosed schizophrenic which comprised the sample of this study.

Statistical Analysis

The research hypothesis tested in this study was: There is no difference in interpersonal problem-solving ability between persons diagnosed schizophrenic and their family members. The mean Means-Ends Problem-Solving (MEPS) scores of the family members of the persons diagnosed schizophrenic were computed. Table 3 presents family identification numbers, demographic data, and the Means-Ends Problem-Solving score of each identified patient in comparison with the mean Means-Ends Problem-Solving (MEPS) score of the other family members.

Table 2

Description of Persons Diagnosed Schizophrenic

Identification Number of Diagnosed Schizophrenic*	Age (Years)	Sex	Ethnic Origin	Socioeconomic Class
1.5	20	Male	Black	IV
2.3	22	Male	Black	IV
3.3	21	Male	Black	IV
4.2	35	Female	Anglo	III
5.3	25	Male	Anglo	II
6.4	24	Male	Anglo	III
7.3	20	Female	Anglo	IV
8.1	54	Male	Anglo	IV
9.3	35	Male	Anglo	V
10.3	17	Male	Anglo	IV
11.3	30	Male	Anglo	V
12.2	35	Female	Anglo	V
13.3	26	Male	Anglo	V
14.3	31	Male	Anglo	IV
15.3	22	Female	Anglo	II

n = 15

*The number preceding the decimal point identifies the family number; the number following the decimal point identifies the family member; number 1 is the father, number 2 is the mother, and all other numbers are the offspring listed chronologically from oldest to youngest.

Table 3

Comparison of Means-Ends Problem-Solving Score
of Each Identified Patient and Other
Family Members by Family

Family Identification Number	Ethnic Origin	Socio-economic Class	MEPS Score of IP*	Mean MEPS Score of Other Family Members
1	Black	IV	18.00	16.00
2	Black	IV	15.00	14.50
3	Black	IV	15.00	11.00
4	Anglo	III	19.00	15.00
5	Anglo	II	16.00	18.50
6	Anglo	III	15.00	17.67
7	Anglo	IV	15.00	14.00
8	Anglo	IV	11.00	11.00
9	Anglo	V	3.00	12.00
10	Anglo	IV	7.00	11.00
11	Anglo	V	8.00	15.50
12	Anglo	V	9.00	8.00
13	Anglo	V	15.00	14.50
14	Anglo	IV	15.00	14.00
15	Anglo	II	11.00	12.25

n = 15 families

*IP refers to identified patient (the family member with the schizophrenia diagnosis).

Four of the sample families were of Black ethnic origin, and 11 of the families were of Anglo origin. Four families were of Class V socioeconomic status, seven families were Class IV, two families were Class III, and two families were of Class II socioeconomic status. The mean Means-Ends Problem-Solving scores of family members ranged from 8.00 to 18.50, low scores indicating low interpersonal problem-solving ability and high scores indicating a greater interpersonal problem-solving ability. The identified patients' MEPS scores ranged from 3.00 to 19.00. In eight families, the identified patient's MEPS score was higher than the mean MEPS score of other family members; in six families, the MEPS score of the identified patient was lower than the mean MEPS score of other family members; and in one family, the MEPS score of the identified patient and the mean MEPS score of other family members were equal.

In families 8, 9, 10, 11, and 12, the Means-Ends Problem-Solving score of the identified patient and the mean MEPS score of other family members were noticeably lower than the scores of the other 10 identified patients and families. The five families with the noticeably lower scores were of socioeconomic classes IV and V. In families 9, 10, and 11, the MEPS score of the identified

patient was considerably lower than the mean MEPS score of their family members. The identified patient of family 9 had been hospitalized 3 months prior to testing and met the delimitations of the study, but did appear to display more difficulty with focus of attention, cognitive abilities, and verbal expression during testing than did the other 14 identified patients. Neither the identified patients nor the other family members of families 10 and 11 presented signs or characteristics uniquely different from those of the other sample families.

Table 4 presents the Means-Ends Problem-Solving (MEPS) scores of the 15 diagnosed schizophrenic family members and other family members. The table compares interpersonal problem-solving abilities of the identified patients and other members of their families, analyzed by the Wilcoxon Matched-Pairs Signed-Ranks Test.

The hypothesis measured ordinal scale data and was, therefore, statistically tested by means of the nonparametric Wilcoxon Matched-Pairs Signed-Ranks Test (Siegel, 1956). The level of significance was set at .05. Statistical computations were calculated on the Texas Woman's University ISP (Interactive Statistical Package) computer program. The analysis produced a Wilcoxon T

Table 4

Interpersonal Problem-Solving Ability Scores of Family Members
Diagnosed Schizophrenic and Other Family Members

Pair	MEPS Score of Diagnosed Schizophrenic*	MEPS Score of Other Family Members*	<u>d</u>	Rank of <u>d</u>	Rank with Less Frequent Sign
a	1.5 = 18	1.1 = 14	4	25.50	25.50
b	1.5 = 18	1.2 = 15	3	19.00	19.00
c	1.5 = 18	1.3 = 16	2	11.00	11.00
d	1.5 = 18	1.4 = 19	- 1	- 3.50	
e	2.3 = 15	2.1 = 12	3	19.00	19.00
f	2.3 = 15	2.2 = 17	- 2	-11.00	
g	3.3 = 15	3.1 = 13	2	11.00	11.00
h	3.3 = 15	3.2 = 9	6	30.50	30.50
i	4.2 = 19	4.1 = 15	4	25.50	25.50
j	4.2 = 19	4.3 = 15	4	25.50	25.50
k	5.3 = 16	5.1 = 20	- 4	-25.50	
l	5.3 = 16	5.2 = 17	- 1	- 3.50	
m	6.4 = 15	6.1 = 21	- 6	-30.50	
n	6.4 = 15	6.2 = 14	1	3.50	3.50
o	6.4 = 15	6.3 = 18	- 3	-19.00	
p	7.3 = 15	7.1 = 13	2	11.00	11.00
q	7.3 = 15	7.2 = 15	0		
r	8.1 = 11	8.2 = 14	- 3	-19.00	
s	8.1 = 11	8.3 = 9	2	11.00	11.00
t	8.1 = 11	8.4 = 10	1	3.50	3.50
u	9.3 = 3	9.1 = 11	- 8	-33.00	
v	9.3 = 3	9.2 = 13	-10	-35.00	
w	10.3 = 7	10.1 = 9	- 2	-11.00	
x	10.3 = 7	10.2 = 13	- 6	-30.50	
y	11.3 = 8	11.1 = 17	- 9	-34.00	
z	11.3 = 8	11.2 = 14	- 6	-30.50	
aa	12.2 = 9	12.1 = 5	4	25.50	25.50
bb	12.2 = 9	12.3 = 11	- 2	-11.00	
cc	13.3 = 15	13.1 = 17	- 2	-11.00	
dd	13.3 = 15	13.2 = 12	3	19.00	19.00
ee	14.3 = 15	14.1 = 14	1	3.50	3.50
ff	14.3 = 15	14.2 = 13	2	11.00	11.00
gg	14.3 = 15	14.4 = 15	0		
hh	15.3 = 11	15.1 = 12	- 1	- 3.50	
ii	15.3 = 11	15.2 = 15	- 4	-25.50	
jj	15.3 = 11	15.4 = 14	- 3	-19.00	
kk	15.3 = 11	15.5 = 8	3	19.00	19.00

T = 274.00

n = 37 pairs

*MEPS Score is the total number of relevant means attained by the individual subjects on the Means-Ends Problem-Solving Procedure.

value of 274.00 with a sample size of 35. The probability of $T = 274.00$ was $p = <.251$, which is greater than $p = .05$; therefore, the research hypothesis was supported.

Means-Ends Problem-Solving (MEPS) normative scores have been established for male and female populations (Platt & Spivack, 1975). Table 5 presents a comparison of the subjects' MEPS mean scores with the established norms for male and female populations.

Additional Findings

Since socioeconomic status has been reported to influence interpersonal problem-solving ability, the data of this study were further analyzed to determine if socioeconomic status had an influence on the subjects' Means-Ends Problem-Solving scores. An analysis of variance statistical test was utilized to compare the mean Means-Ends Problem-Solving (MEPS) scores of the four socioeconomic groups represented in the sample (Classes II, III, IV, and V). The level of significance was set at .05. Statistical computations were calculated by the IPS (Interactive Statistical Package) computer program. Table 6 presents the mean, median, and standard deviation (S.D.) of the MEPS scores according to socioeconomic class.

Table 5
Comparison of Subjects' MEPS Mean Scores with Norms

Group	Individual Story Mean Score					5-Story Mean Score	Story 6 Mean Score	6-Story Mean Score
	1	2	3	4	5			
Identified Patients								
Males (n = 11)	2.36	2.55	2.00	1.91	1.36	2.04	2.36	2.09
Females (n = 4)	3.25	2.75	2.00	2.25	1.25	2.30	2.00	2.25
Other Family Members								
Males (n = 19)	2.84	2.21	2.68	2.26	1.42	2.28	2.26	2.28
Females (n = 18)	2.89	2.50	2.72	2.28	1.22	2.32	2.22	2.31
Total Family								
Males (n = 30)	2.67	2.33	2.43	2.13	1.40	2.19	2.30	2.21
Females (n = 22)	2.86	2.55	2.59	2.27	1.23	2.30	2.18	2.28
<u>Norms</u>								
<u>Males</u>								
State University Upper- classmen (n = 38)	2.00	2.79	2.42	2.16	1.15	2.10	*	*
Freshman Military College Students (n = 28)	1.78	1.96	1.25	1.41	1.00	1.48	*	*
Hospital Employees (n = 16)	1.50	1.81	1.62	1.33	0.75	1.40	*	*
Penitentiary Inmates (n = 54)	**	1.26	1.04	1.30	0.81	NA	*	*
Reformatory Inmates (n = 329)	1.14	1.29	1.29	1.35	0.84	1.18	*	*
Acute Psychiatric Inpatients (n = 32)	0.53	0.72	1.00	0.61	0.50	0.67	*	*
Extended Care Psychiatric Outpatients (n = 26)	0.85	0.69	0.88	0.61	0.58	0.72	*	*
<u>Females</u>								
Graduate Students (n = 23)	2.50	3.68	2.16	2.08	1.58	2.40	*	*
State University Upper- classmen (n = 31)	1.81	2.03	2.46	2.23	1.19	1.94	*	*
Student Beauticians (n = 44)	1.57	1.73	2.27	1.80	1.09	1.69	*	*
Hospital Employees (n = 45)	1.60	2.04	1.44	1.42	0.75	1.45	*	*
Acute Psychiatric Inpatients (n = 23)	0.74	0.74	1.36	0.71	0.21	0.75	*	*
Extended Care Psychiatric Outpatients (n = 33)	0.39	0.67	0.78	0.72	0.53	0.62	*	*

*MEPS Story 6 had not yet been developed when the norms were established.
**Not administered.

Table 6

Mean, Median, and Standard Deviation of Means-Ends Problem-Solving Scores According to Socioeconomic Group

Socioeconomic Group	<u>n</u>	Mean	Median	Standard Deviation
Class II	8	14.13	14.50	3.76
Class III	7	16.71	15.00	2.63
Class IV	25	13.44	14.00	2.96
Class V	12	11.25	11.50	4.41

n = 52

The Newman-Keuls multiple comparison procedure graphically represented a significant difference between the MEPS scores of Class III subjects and Class V subjects. Group 4 (Class V) scored significantly lower than Group 2 (Class III), and Groups 1 (Class II) and 3 (Class IV) scored between Groups 2 and 4, with no significant differences. Analysis of variance results showed a significant difference ($p = .015$) among the groups. The Newman-Keuls multiple comparison procedure showed that the difference was between the mean Means-Ends Problem-Solving scores of Class III (16.71) and Class V (11.25), Class III having a statistically higher mean score. Table 7 is an analysis of variance summary table.

Table 7

Analysis of Variance Showing That
at Least Two Means Are Different

Source	<u>SS</u>	<u>df</u>	<u>MS</u>	<u>F</u>	<u>F-probability</u>
Groups	136.27	3	45.42	3.86	.015
Error	<u>564.71</u>	<u>48</u>	11.76		
Total	700.98	51			

Further analyses of the data were performed to determine if ethnicity, age group, sex, and geographical area had significant influences on the subjects' Means-Ends Problem-Solving (MEPS) scores. A t -test comparison of mean MEPS scores of Blacks (14.82) and Anglos (13.12) showed $t(50) = 1.36$, $p = .18$; the analysis demonstrated no significant difference between the two groups. Of the 52 subjects, 11 were Blacks and 41 were Anglos.

The mean Means-Ends Problem-Solving (MEPS) scores according to age groups were statistically analyzed by use of the parametric analysis of variance. Five age groups (13-22, 23-32, 33-42, 43-52, and 53-62 years) were represented in the sample. The level of significance for the statistical analysis was set at .05. Statistical computations were calculated by the ISP computer program.

Table 8 presents the mean, median, and standard deviation of the MEPS scores according to age group.

Table 8
Mean, Median, and Standard Deviation of Means-Ends
Problem-Solving Scores According to Age Group

Age Group (Years)	<u>n</u>	Mean	Median	Standard Deviation
13-22	12	12.33	12.50	3.45
23-32	9	15.22	15.00	3.07
33-42	6	12.33	14.00	5.61
43-52	9	13.33	14.00	4.39
53-62	16	13.88	13.50	2.94

n = 52

The analysis of variance results as calculated by the computer program produced no significant difference between any of the five age groups ($p = .43$).

A t-test comparison of mean Means-Ends Problem-Solving (MEPS) scores of the 30 male subjects (13.27) and the 22 female subjects (13.77) showed no significant difference. The analysis produced $t(50) = -0.48$, $p = .63$.

The mean Means-Ends Problem-Solving (MEPS) scores according to geographical area of the subjects was statistically analyzed by use of the parametric t-test.

The means of the two groups (subjects from a Southwestern metropolitan area of the United States and subjects from a North-Central rural area of the United States) were compared. Statistical computations were calculated by the computer. Table 9 presents the mean, median, and standard deviation of the MEPS scores according to geographical area.

Table 9

Mean, Median, and Standard Deviation
of Means-Ends Problem-Solving Scores
According to Geographical Area

Geographical Area	<u>n</u>	Mean	Median	Standard Deviation
Southwestern metropolitan	14	15.14	15.00	2.71
North-Central rural	38	12.87	13.50	3.86

n = 52

The t-test analysis produced a statistically significant t value of t(50) = 2.02, p = .049. The analysis demonstrated that subjects from the Southwestern metropolitan area of the United States scored significantly higher on the Means-Ends Problem-Solving (MEPS) Procedure than did the subjects from the North-Central rural area of the United States.

Summary of Findings

An ex post facto study was conducted to compare the interpersonal problem-solving ability of persons diagnosed schizophrenic with their family members. The two research variables were presence or absence of schizophrenia diagnosis and interpersonal problem-solving ability. The research hypothesis was: There is no difference in interpersonal problem-solving ability between persons diagnosed schizophrenic and their family members.

The findings of this study were:

1. There is no statistically significant difference between the Means-Ends Problem-Solving (MEPS) scores of persons diagnosed schizophrenic and their family members.
2. There is a statistically significant difference between the mean Means-Ends Problem-Solving (MEPS) scores of subjects of socioeconomic Classes III and V. Class III subjects had significantly higher scores.
3. There is no statistically significant difference between the mean Means-Ends Problem-Solving (MEPS) scores of the Black and Anglo ethnic groups.
4. There is no statistically significant difference between the mean Means-Ends Problem-Solving (MEPS) scores of any of the five age groups of subjects.

5. There is no statistically significant difference between the mean Means-Ends Problem-Solving (MEPS) scores of male and female subjects.

6. There is a statistically significant difference between the mean Means-Ends Problem-Solving (MEPS) scores of subjects of the Southwestern metropolitan and North-Central rural geographical areas. The metropolitan area subjects had significantly higher scores.

CHAPTER 5

SUMMARY OF THE STUDY

This study was conducted to compare the interpersonal problem-solving abilities of persons diagnosed schizophrenic and their family members. Chapter 5 presents a summary of the study, discussion of the findings, conclusions and implications based on the findings, and recommendations for further study.

Summary

Based on studies that showed that persons diagnosed schizophrenic differed from nonschizophrenics in their abilities to solve interpersonal problems, Platt and Spivack (1975) asserted that persons diagnosed schizophrenic are deficient in interpersonal problem-solving abilities. However, Bowen's (1961, 1965, 1976) family systems theory, supported by other systems theories, proposed that an individual family member diagnosed schizophrenic is not different from his/her family members, but that parents, transmitting their emotional illness to the selected child, place that child in the "patient" role to maintain the family system's equilibrium. Balancing needs of the parents and the child keep the

relationship in equilibrium. Bowen (1976) indicated that the characteristics of all systems, whether those systems are open or closed, are not determined by any one person in the system but by a dynamic interaction of all members of the system. Based on Bowen's (1961, 1965, 1976) theory, interpersonal problem solving can be hypothesized to be one ability learned or not learned within the family system, the parents' abilities transmitted to and learned by the children.

The research hypothesis formulated for investigation was: There is no difference in interpersonal problem-solving ability between persons diagnosed schizophrenic and their family members. Data were collected by means of a demographic data questionnaire and the Means-Ends Problem-Solving Procedure (Platt & Spivack, 1975) administered in the homes of the subjects. The occupational and educational data of each family were categorized by Hollingshead's Two Factor Index of Social Position (Miller, 1977) to determine each family's socioeconomic status.

Selected from the outpatient populations of three community mental health centers, the target population was all families in which one family member had the clinical diagnosis of schizophrenia. The convenience

sample consisted of the first 15 families who met the delimitations of the study and who agreed to participate in the study.

The sample consisted of 52 family members constituting 15 families. Each family was composed of a mother, father, and at least one child living together in one household, one family member having the diagnosis schizophrenia. The subjects ranged in age from 14-62 years. The sample consisted of 30 males and 22 females; subjects were of two ethnic groups, Blacks ($\underline{n} = 11$) and Anglo ($\underline{n} = 41$). The socioeconomic classes II ($\underline{n} = 8$), III ($\underline{n} = 7$), IV ($\underline{n} = 25$), and V ($\underline{n} = 12$) were represented; the majority of the families were of the lower social classes, classes IV and V.

The hypothesis was tested by means of the Wilcoxon Matched-Pairs Signed-Ranks Test, at the .05 level of significance. The analysis produced a Wilcoxon \underline{T} value of 274, $\underline{p} = <.251$; therefore, the research hypothesis was supported.

Further analysis of the data showed no significant difference in the mean MEPS scores for ethnicity, age categories, or sex. However, there were significant differences in mean MEPS scores between socioeconomic classes III and V and between subjects of the two

geographical areas (Southwestern metropolitan locale and North-Central rural locale).

Discussion of Findings

The dependent variable addressed in this study was the interpersonal problem-solving ability of family members. The statistical analysis demonstrating no significant difference between persons diagnosed schizophrenic and their family members in conceptualizing relevant means in the testing situation suggests that means-ends interpersonal problem-solving ability is more alike than unlike among family members. The family member diagnosed as being schizophrenic cannot be distinguished on the basis of interpersonal problem-solving skill from other, apparently normal family members. The analysis lends support to Bowen's family systems theory.

Previous work in the study of interpersonal problem-solving (Platt & Spivack, 1972a) showed significant differences between persons diagnosed schizophrenic and normal controls. That relationship could be supposed to hold true between persons diagnosed schizophrenic and their own family members as normal controls if there is a real difference in the interpersonal relationship ability of persons diagnosed schizophrenic.

The extent to which the sample of the study is normal is one relevant question. In Platt and Spivack's (1972a) study, normals were nonpatients, hospital employees, with age and educational characteristics similar to that of the patients. Most of the patients were diagnosed, hospitalized schizophrenics. In the present study, the family was normal in that the members were not hospitalized, they were living at home, at least one member of the family was employed, and the family was functional in the community. The family member diagnosed schizophrenic had many of the same characteristics as other family members, that is, living at home within a family system, presence of a support system, and absence of psychosis.

One explanation for the finding that the persons diagnosed schizophrenic were not different from the members of their families or from normals, is that there may be a difference in the identified patient's current degree of illness or psychosis. If severity of illness makes a difference in the individual's ability to solve interpersonal problems, the interpersonal relationships theory is not supported and it is the psychosis (i.e., level of functioning), not the schizophrenia diagnosis, that predicts the interpersonal problem-solving ability. Thus the interpersonal problem-solving deficit would not be a

characteristic of the diagnosis of schizophrenia but would be related to the acute psychotic process. The severity of illness of the identified patients of the previous study (Platt & Spivack, 1972a) was not reported, but they were inpatients at an intensive-care short-term inpatient facility. It could be assumed that hospitalized persons have a lower level of functioning than nonhospitalized persons living at home.

It may be argued that the persons diagnosed schizophrenic were, in fact, different from normals and that they were not different from the other members of their families because the families were also deficient in interpersonal problem-solving ability. If the hypothesis that the family and the patient are normal in interpersonal problem-solving ability is accepted, the differences which Platt and Spivack (1972a) found between the interpersonal problem-solving abilities of patients and normals were probably related to other unidentified factors.

In a further attempt to explain the findings, the sample Means-Ends Problem-Solving (MEPS) scores were compared with the established number of relevant means norms for males and females (Platt & Spivack, 1975). In the present study, the males' ($n = 30$) mean relevant means

scores for each separate story were greater than the mean scores for three out of five stories by the state university upperclassmen ($\underline{n} = 38$) and were lower than the mean scores of two stories by the state university upperclassmen ($\underline{n} = 38$). The male subjects' ($\underline{n} = 30$) mean relevant means scores for each separate story were greater than all the mean scores of the other six male populations for which norms have been established. The male subjects' ($\underline{n} = 30$) total mean score for all five stories (2.19) was greater than the total five-story mean score of each of the seven male populations for which norms have been established.

Also in the present study, the females' ($\underline{n} = 22$) mean relevant means scores for each separate story were greater than the mean scores of three out of five stories by the graduate students ($\underline{n} = 23$) and were lower than the mean scores of two stories by the graduate students ($\underline{n} = 23$). The female subjects' ($\underline{n} = 22$) mean relevant means scores for each separate story were greater than all the mean scores of the other five female populations for which norms have been established. The female subjects' ($\underline{n} = 22$) total mean score for all five stories (2.30) was lower than that of the graduate students (2.40), but was greater than the total mean scores of the other five female populations for which norms have been established.

The findings do not support Platt and Spivack's (1972a, 1972b, 1975) assertion that identified psychiatric patients are less adequate than normals or deviants to solve interpersonal problems. The findings are interpreted as showing that persons diagnosed schizophrenic are as able as normal populations to solve interpersonal problems.

The finding that persons diagnosed schizophrenic and their family members scored as well as normals on the Means-Ends Problem-Solving Procedure supports Bowen's family systems theory. Cautious interpretation of this finding is required, and one can only speculate regarding the sample's comparison with the established norms. It may be that the MEPS instrument is insensitive to the measurement of interpersonal problem-solving ability. Another possibility is that, due to the degree of subjectivity involved in scoring the MEPS, the scoring procedure utilized in the previous studies which led to the establishment of the norms and the scoring procedure utilized in the present study were not similar enough to warrant comparisons and ultimate conclusions. The third possibility is that persons diagnosed schizophrenic and their family members are not deficient in interpersonal problem-solving ability.

The sample selection difficulties posed by this study presents a possible explanation of Platt and Spivack's (1972a) findings that normals had significantly higher scores than did patients on the Means-Ends Problem-Solving test. A large number of the schizophrenics and their families admitted to the community mental health centers were not intact families including mother, father, and at least one child. It may be that more persons diagnosed schizophrenic are of nonintact families than of intact families. It is possible that the diagnosed schizophrenics of Platt and Spivack's (1972a) study were not members of intact families. It may be that identified patients living within an intact family more adequately solve interpersonal problems than do identified patients of split, nonintact families, whether or not they are hospitalized.

The Means-Ends Problem-Solving instrument is a new, nonstandardized instrument. Therefore, it is possible that the difference between interpersonal problem-solving abilities of identified patients and normals (Platt & Spivack, 1972a) was a function of possible deficiencies of the instrument. The reported validity of the instrument is low, but coefficients of internal consistency have demonstrated fair reliability of the MEPS, with

reliability measures showing a range of .80 to .84 (Platt & Spivack, 1975). More recent interrater reliability findings (Appel & Kaestner, 1979; Intagliata, 1978; Marsh, Serafica, & Barenboim, 1980; McClure, Chinsky, & Larcen, 1978) have been increasingly convincing.

Analysis of the demographic data showed significant differences in the mean MEPS scores between socioeconomic classes III ($\underline{n} = 7$) and V ($\underline{n} = 12$) and between subjects of the two geographical areas. The finding that Class III subjects scored significantly higher ($\underline{p} = .015$) is not specifically supported by previous research. Rather, the literature has generally stated that socioeconomic status is one variable worthy of consideration and control when measuring interpersonal problem-solving ability (Fried, 1975; Schubert & Miller, 1980; Weinstock, 1967). Spivack, Platt, and Shure (1976) stated that interpersonal problem-solving skills have relevance across socioeconomic groups; and, in most studies, the subjects of the control and experimental groups have been of the same socioeconomic status and background. Some studies (Appel & Kaestner, 1979; Gotlib & Asarnow, 1979; Intagliata, 1978; McClure, Chinsky, & Larcen, 1978; Platt & Spivack, 1972a) have not specified the socioeconomic status of the subjects.

Schubert and Miller (1980) identified a definite distinction between socioeconomic Classes IV ($\underline{n} = 2,443$) and V ($\underline{n} = 4,122$) with respect to psychiatric outcome measures and recommended that the classes be considered separately both for research and for clinical treatment planning. One explanation for the present study's finding of a significant difference between the interpersonal problem-solving scores of Class III and Class V subjects but not between any other classes may be that the criteria of the Hollingshead Two Factor Index of Social Position (Miller, 1977) were not distinct enough to accurately classify the subjects. Other factors possibly affecting the findings were the unequal numbers of subjects of each socioeconomic class and the small sample size.

Analysis of the data showed a statistically significant ($\underline{p} = .049$) difference between the mean MEPS scores of subjects from the two geographical areas. Subjects from the Southwestern metropolitan area ($\underline{n} = 14$) scored significantly higher on the MEPS than did subjects from the North-Central rural area ($\underline{n} = 38$). The samples of previous interpersonal problem-solving studies were selected from only one geographical area. Other than general documentations that culture, social environment, socioeconomic status, and other social variables are

likely to influence interpersonal problem-solving behaviors, the literature and past research have not addressed geographical differences. One possible explanation of the difference found in this study ($p = .049$) was that the range of MEPS scores of the North-Central rural group was larger (3-21) than was the range of the Southwestern metropolitan group (9-19). The larger score range included more low scores than did the score range of the Southwestern group. The score range of 3-21 encompassed the score range of 9-19, and there were unequal numbers of subjects in each group.

Further analysis of the data did not show significant differences in the mean MEPS scores for ethnicity, age categories, or sex. Lack of significant differences based on these variables was consistent with the literature. Of the sample, three of the four families from the Southwestern metropolitan location were Black. It is possible that an interrelationship of ethnicity and geography affected the significant difference shown between the two geographical groups; another possible interrelationship was that of the ethnic and socioeconomic variables. The small sample may have influenced the differences and requires that the results be interpreted cautiously.

Conclusions and Implications

Based on the previous discussion of the findings in this study, it can be concluded that:

1. Persons diagnosed schizophrenic, who are living at home within an intact family, and members of their families are alike in interpersonal problem-solving ability.

2. Age, sex, and ethnicity do not affect adolescents' and adults' interpersonal problem-solving ability.

3. There is reason to believe that socioeconomic status and geographical area may influence an individual's interpersonal problem-solving ability.

4. The data suggest that there is no difference between families of persons diagnosed schizophrenic and normal families in interpersonal problem-solving ability.

The findings of this study, supporting Bowen's family system theory, have the following implications for psychiatric-mental health nursing:

1. Based on the conclusion that persons diagnosed schizophrenic and members of their families are alike in interpersonal problem-solving ability, the singling out of the person diagnosed schizophrenic, treating him/her differently in terms of interpersonal problem-solving skills, is irrelevant.

2. Based on the conclusion that families of persons diagnosed schizophrenic are normal in terms of established Means-Ends Problem-Solving norms, therapeutic focus on the interpersonal problem-solving ability of persons diagnosed schizophrenic and their family members is irrelevant.

Recommendations for Further Study

Based on the findings of this study, the following recommendations are made for further study:

1. Studies for establishing increased validity and reliability of the Means-Ends Problem-Solving instrument.
2. Investigation of the relationship of level of functioning and interpersonal problem-solving.
3. Studying interpersonal problem-solving ability of all family members, not limiting the study to an age range.
4. Investigation of interpersonal problem-solving within nonintact families of persons diagnosed schizophrenic.
5. Comparison of interpersonal problem-solving abilities between normal families and families of persons diagnosed schizophrenic.

6. Investigation of the variables in which significant differences were identified--socioeconomic status and geographical area.

APPENDIX A

TEXAS WOMAN'S UNIVERSITY
Human Research Committee

Name of Investigator: Genelle Okerson Center: Dallas
Address: 2850 Clydedale Apt. 102, Dallas, Texas 75220 Date: 9/7/79

Dear Ms. Okerson:

Your study entitled Interpersonal Problem-Solving in Families of Persons Diagnosed Schizophrenic has been reviewed by a committee of the Human Research Review Committee and it appears to meet our requirements in regard to protection of the individual's rights.

Please be reminded that both the University and the Department of Health, Education and Welfare regulations require that written consents must be obtained from all human subjects in your studies. These forms must be kept on file by you.

Furthermore, should your project change, another review by the Committee is required, according to DHEW regulations.

Sincerely,

Estelle D. Kurtz

Chairman, Human Research
Review Committee

at Dallas.

APPENDIX B

TEXAS WOMAN'S UNIVERSITY
COLLEGE OF NURSING
DENTON, TEXAS

DALLAS CENTER
1810 Inwood Road
Dallas, Texas 75235

HOUSTON CENTER
1130 M.S. Anderson Blvd.
Houston, Texas 77025

AGENCY PERMISSION FOR CONDUCTING STUDY*

THE _____

GRANTS TO Genelle LaMar Okerson, R.N., B.S.N.

a student enrolled in a program of nursing leading to a Master's Degree at Texas Woman's University, the privilege of its facilities in order to study the following problem:

INTERPERSONAL PROBLEM-SOLVING IN
FAMILIES OF PERSONS DIAGNOSED SCHIZOPHRENIC

The conditions mutually agreed upon are as follows:

1. The agency (may) (may not) be identified in the final report.
2. The names of consultative or administrative personnel in the agency (may) (may not) be identified in the final report.
3. The agency (wants) (does not want) a conference with the student when the report is completed.
4. The agency is (willing) (unwilling) to allow the completed report to be circulated through interlibrary loan.
5. Other: _____

Date June 10, 1980

Genelle L. Okerson
Signature of Student

Signature of Agency Personnel 1

Estelle D. Kurtz
Signature of Faculty Advisor 3

*Fill out and sign three copies to be distributed as follows: Original - Student; first copy - agency; second copy - T.W.U. College of Nursing.

TEXAS WOMAN'S UNIVERSITY
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AGENCY PERMISSION FOR CONDUCTING STUDY*

THE _____
GRANTS TO Genelle LaMar Okerson, R.N., B.S.N.

a student enrolled in a program of nursing leading to a Master's Degree at Texas Woman's University, the privilege of its facilities in order to study the following problem:

INTERPERSONAL PROBLEM-SOLVING IN
FAMILIES OF PERSONS DIAGNOSED SCHIZOPHRENIC

The conditions mutually agreed upon are as follows:

1. The agency (may) (may not) be identified in the final report.
2. The names of consultative or administrative personnel in the agency (may) (may not) be identified in the final report.
3. The agency (wants) (~~does not want~~) a conference with the student when the report is completed.
4. The agency is (willing) (unwilling) to allow the completed report to be circulated through interlibrary loan.
5. Other: _____

1, 2, & 4 will be decided upon conference with the researcher after the research is completed

Date 8-16-77

Genelle L. Okerson
Signature of Student

Jan C. Boushman Mf
Signature of Agency Personnel
Estelle D. Kertz
Signature of Faculty Advisor

*Fill out and sign three copies to be distributed as follows: Original - Student; first copy - agency; second copy - T.W.U. College of Nursing.

TEXAS WOMAN'S UNIVERSITY
COLLEGE OF NURSING
DENTON, TEXAS

DALLAS CENTER
1810 Inwood Road
Dallas, Texas 75235

HOUSTON CENTER
1130 M.S. Anderson Blvd.
Houston, Texas 77025

AGENCY PERMISSION FOR CONDUCTING STUDY*

THE Memorial Mental Health and Retardation Center

GRANTS TO Genelle LaMar Okerson, R.N., B.S.N.

a student enrolled in a program of nursing leading to a Master's Degree at Texas Woman's University, the privilege of its facilities in order to study the following problem:

INTERPERSONAL PROBLEM-SOLVING IN
FAMILIES OF PERSONS DIAGNOSED SCHIZOPHRENIC

The conditions mutually agreed upon are as follows:

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3. The agency (wants) (does not want) a conference with the student when the report is completed.
4. The agency is (willing) (unwilling) to allow the completed report to be circulated through interlibrary loan.
5. Other: _____

Date 12-6-79

Genelle L. Okerson
Signature of Student

Erwin H. Pitt, Exec. Dir.
Signature of Agency Personnel

Estelle J. Kurtz
Signature of Faculty Advisor

*Fill out and sign three copies to be distributed as follows: Original - Student; first copy - agency; second copy - T.W.U. College of Nursing.

APPENDIX C

VERBAL EXPLANATION OF THE STUDY

The following explanation of the purpose, procedure, risks, and benefits involved in the study will be read by the investigator to the subjects.

My name is Genelle Okerson. I am a graduate student in the psychiatric-mental health nursing program at Texas Woman's University in Dallas, Texas. One of the requirements for obtaining my Master's Degree is the completion of a thesis, which is a research project.

My research project focuses on interpersonal problem-solving within families in which one member is being seen at a mental health center for the treatment of emotional problems. All persons have the daily task of solving problems, and the ability of people of all ages to deal with problems in relation to other people is a key factor in emotional well-being. My purpose in meeting with you today is to invite you to participate in my research project.

Since family members interact more frequently and more intensely with each other than with other persons, it seems important that health professionals learn more about how families solve problems. We are trying to better understand how people solve problems and whether or not there are any differences in individuals' problem-solving. We are especially interested in understanding

this with the patients and their families. Your participation in this study would be helpful in that it would assist health professionals in better understanding problem-solving abilities.

If you choose to participate in this study, I (the investigator) will visit you in your home and your activities will include:

1. Answering questions which I will read to you from a questionnaire, which focus on the age, sex, and education of each family member ages 13 to 62 years, the occupation of each employed family member, your ethnicity, and information relating to current medications and recent or previous psychiatric hospitalizations of any family members. The family may participate as a group in this part of the study, and this part of the study will require approximately ten minutes.

2. The second activity will involve family members ages 13 to 62 years. Each family member of those ages will individually meet with me (the investigator) for approximately 20 minutes per person. I will read the beginning and the end of six separate problem-solving situations to you and will ask you to identify the steps necessary to solve the specific problems. There are no "right" or "wrong" answers, so you are invited to be

creative with your answers. Immediately prior to this activity, I will read you the instructions for the problem-solving activity. As you state how you will solve the specific problem, I will write your answers on a score sheet. This will conclude your participation in the study.

If there are three or four members of your family who are ages 13 to 62 years, I will need to visit your home only one time. If there are more than four teenagers plus adults in your family, I will want to visit your home twice to complete these activities.

Your participation in this study will be voluntary and anonymous. In order to assure your privacy, neither your names nor any other identifying information will be recorded on any forms. Number codes will be used on the questionnaire and the scoring sheets. This study requires that you give your written consent in order to participate. Those of you who are younger than 18 years of age can sign a consent form, too, but your parents will also have to sign it to allow you to participate in the activity. You will be free to withdraw from participation in the study at any time.

A potential risk to you as a participant in this study is the possibility of some nervousness related to being

asked to provide answers to problem situations. No other potential risks are known to the investigator. Your participation or refusal to participate in the study will in no way influence your present or future treatment at the mental health center.

There are a number of useful steps in the solving of problems. Your participation in this study would contribute to health professionals' helping families learn to solve interpersonal problems that may have caused them trouble. I hope that you will choose to participate.

You may have a summary of the results of the study if you wish by letting me know after I have interviewed your family.

APPENDIX D

TEXAS WOMAN'S UNIVERSITY

(Form B - Oral presentation to subject)Consent to Act as a Subject for Research and Investigation:

I have received an oral description of this study, including a fair explanation of the procedures and their purpose, any associated discomforts or risks, and a description of the possible benefits. An offer has been made to me to answer all questions about the study. I understand that my name will not be used in any release of the data and that I am free to withdraw at any time. My participation in this study is voluntary. I understand that my participation or refusal to participate in the study will in no way affect my present or future treatment at the mental health center.

Signature_____
Date_____
Witness_____
DateCertification by Person Explaining the Study:

This is to certify that I have fully informed and explained to the above named person a description of the listed elements of informed consent.

Signature_____
Date_____
Position_____
Witness_____
Date

APPENDIX E

DEMOGRAPHIC DATA FORM

Identification: FAMILY NUMBER _____

1. Occupation of head of household: _____

Occupation of other employed family members:

Member	Occupation
_____	_____
_____	_____
_____	_____

2. Education of head of household:

- _____ graduate professional training
- _____ standard college or university graduation
- _____ partial college training
- _____ high school graduation
- _____ partial high school
- _____ junior high school
- _____ less than 7 years of school

Education of spouse:

- _____ graduate professional training
- _____ standard college or university graduation
- _____ partial college training
- _____ high school graduation
- _____ partial high school
- _____ junior high school
- _____ less than 7 years of school

(SES)

3. Age and sex of family members:

	Age	Sex	
Member .1:	_____	M	F
Member .2:	_____	M	F
Member ,3:	_____	M	F
Member .4:	_____	M	F
Member .5:	_____	M	F

4. Ethnic origin:

- _____ Anglo
- _____ Black
- _____ Hispanic
- _____ American Indian
- _____ Other (specify) _____

5. Current psychiatric medications of any family member/s:
 Member .1: _____
 Member .2: _____
 Member .3: _____
 Member .4: _____
 Member .5: _____

6. Any family member other than the identified patient ever hospitalized for psychiatric treatment?

7. If any family member (including I.P.) has been hospitalized for psychiatric treatment, when hospitalized and when discharged?

Member	Admission Date	Discharge Date
_____	_____	_____
_____	_____	_____
_____	_____	_____

APPENDIX F

MALE FORM OF THE MEPS TEST

The six MEPS stories to be administered to the male subjects include:

1. Mr. A. was listening to the people speak at a meeting about how to make things better in his neighborhood. He wanted to say something important and have a chance to be a leader, too. The story ends with him being elected leader and presenting a speech. You begin the story at the meeting where he wanted to have a chance to be a leader.

2. Harold loved his girlfriend very much, but they had many arguments. One day she left him. Harold 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.

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

4. 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.

5. 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.

6. Joe is having trouble getting along with the foreman on his job. Joe is very unhappy about this. The story ends with Joe's foreman liking him. You begin the story where Joe isn't getting along with his foreman.

APPENDIX G

FEMALE FORM OF THE MEPS TEST

The six MEPS stories to be administered to the female subjects include:

1. Ms. A. was listening to the people speak at a meeting about how to make things better in her neighborhood. She wanted to say something important and have a chance to be a leader, too. The story ends with her being elected leader and presenting a speech. You begin the story at the meeting where she wanted to have a chance to be a leader.

2. Barbara loved her boyfriend very much, but they had many arguments. One day he left her. Barbara wanted things to be better. The story ends with everything fine between her and her boyfriend. You begin the story with her boyfriend leaving her after an argument.

3. Ms. C. had just moved in that day and didn't know anyone. Ms. C. wanted to have friends in the neighborhood. The story ends with Ms. C. having many good friends and feeling at home in the neighborhood. You begin the story with Ms. C. in her room immediately after arriving in the neighborhood.

4. Susan noticed that her friends seemed to be avoiding her. Susan wanted to have friends and be liked.

The story ends when Susan's friends like her again. You begin where she first notices her friends avoiding her.

5. One day Janet was standing around with some other people when one of them said something very nasty to Janet. Janet got very mad. Janet got so mad she decided to get even with the other person. The story ends with Janet happy because she got even. You begin the story when Janet decided to get even.

6. Alice is having trouble getting along with her supervisor on her job. Alice is very unhappy about this. The story ends with Alice's supervisor liking her. You begin the story where Alice isn't getting along with her supervisor.

APPENDIX H

STANDARD INSTRUCTIONS OF THE MEANS-ENDS
PROBLEM-SOLVING PROCEDURE

The investigator will introduce herself to the subject by saying, "My name is Genelle Okerson." Following the introduction, the investigator will give the subject the following explanation of what the subject and the investigator will be doing.

In this procedure, I am 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 (Platt & Spivack, 1975, p. 16).

APPENDIX I

MFPS CATEGORY SCORING SHEET
(Use in conjunction with Subject Scoring Sheet)

Story No. 1 Group M() F() Date Administered Page of

Means (briefly describe)	Scored by <u> </u>					Checked by <u> </u>				
	No. of times cited	Obstacles (briefly describe)	No. of times cited	Enum. of Obstacles	No. of times cited	Enum. of Means	No. of times cited	Enum. of Obstacles	No. of times cited	
a. Offer plans or ideas	1									
b. Service to community										
c. Campaign speech	1									
d. Personal qualities										
e. Convince other										
f. Nominated										
g. Accept suggestions										
h. Unification										
i. Introspection*	1									
NO MEANS (NM)										
IRRELEVANT MEANS (IM)										
NO RESPONSE (NR)										

*Means not included in the list of categories should be added.

MEPS CATEGORY SCORING SHEET
 (Use in conjunction with Subject Scoring Sheet)

Story No. 2 Group _____ M() F() Date Administered _____
 Scored by _____ Checked by _____

Means (briefly describe)	No. of times cited	Obstacles (briefly describe)	No. of times cited	Enum. of Obstacles	No. of times cited	Enum. of Means	No. of times cited
a. Discussion							
b. Introspection							
c. Call or make date							
d. Solve problem							
e. Apologize							
NO MEANS (NM)							
IRRELEVANT MEANS (IM)							
NO RESPONSE (NR)							

MEPS CATEGORY SCORING SHEET
 (Use in conjunction with Subject Scoring Sheet)

Page ____ of ____

Story No. 4 Group _____ M() F() Date Administered _____

Means (briefly describe)	Scored by _____				Checked by _____			
	No. of times cited	Obstacles (briefly describe)	No. of times cited	Enum. of Obstacles	No. of times cited	Enum. of Means	No. of times cited	
a. Visit neighbors								
b. Neighbors visit								
c. Give party								
d. Invited to party								
e. Introspection								
f. Be a good neighbor								
g. Invite neighbors over								
h. Neighbors invite								
i. Ask for information								
j. Neighbor introduces S to others								
NO MEANS (NM)								
IRRELEVANT MEANS (IM)								
NO RESPONSE (NR)								

MEPS CATEGORY SCORING SHEET
 (Use in conjunction with Subject Scoring Sheet)

Story No. 9 Group M () F () Date Administered Page of

Means (briefly describe)	Scored by <u> </u>				Checked by <u> </u>			
	No. of times cited	Obstacles (briefly describe)	No. of times cited	Enum. of Obstacles	No. of times cited	Enum. of Means	No. of times cited	
a. Physically harm								
b. Spread false rumors								
c. Prank								
d. Be nice								
e. Humiliate, insult								
f. Do same back (get even verbally)								
g. Use group pressure								
h. Steal boyfriend (girlfriend)								
<u>NO MEANS (NM)</u>								
<u>IRRELEVANT MEANS (IM)</u>								
<u>NO RESPONSE (NR)</u>								

MEPS CATEGORY SCORING SHEET
 (Use in conjunction with Subject Scoring Sheet)
 Story No. 10 Group M () F () Date Administered Page of

Means (briefly describe)	Scored by <u> </u>				Checked by <u> </u>			
	No. of times cited	Obstacles (briefly describe)	No. of times cited	Enum. of Obstacles	No. of times cited	Enum. of Means	No. of times cited	
a. Alter behavior								
b. Ask for help or reason								
c. Solve problem								
d. Follow advice								
e. Show motivation								
f. Be nice								
g. Discover problem								
NO MEANS (NM)								
IRRELEVANT MEANS (IM)								
NO RESPONSE (NR)								

APPENDIX J

MEPS SUBJECT SCORING SHEET

Page ___ Of ___

(Use in conjunction with category scoring sheet)

Story No. 1 Group _____ M(×) F() Date Admin. _____

Scored by _____ Checked by _____

Name or S#	Means*	IM	NM	NR	Enum.* of means	Obsta- cles	Enum. of Obs.	Time
Ex. Smith, John	a, d, f	(✓)	(✓)	(✓)	a ₁ , d ₃	A	A _{4,5}	(✓)
1. Williams, Pete	a, c, i				a ₁ , a ₂ , a ₃			
2.								
3.								
4.								
5.								
6.								
7.								
8.								
9.								
10.								
11.								
12.								
13.								
14.								
15.								
16.								
17.								
18.								
19.								
20.								

* Use letters corresponding to those on category scoring sheet for this story
 Enumerations should be listed on back of category scoring sheet using
 appropriate subject number and "mean" letter.

APPENDIX K

MEPS SUBJECT SUMMARY SHEET

Group _____ M () F () Date Administered: _____

Subject	No. of Means or Other Score*										Total Means	IM + NM	Rel. Ratio**
	1	2	3	4	5	Story		8	9	10			
1. Williams, Pete	3												
2.													
3.													
4.													
5.													
6.													
7.													
8.													
9.													
10.													
11.													
12.													
13.													
14.													
15.													
16.													
17.													
18.													
19.													
20.													
21.													
22.													

* If means score is 0, enter IM, NM, or NR

** Relevancy Ratio = $\frac{\text{Total Means}}{\text{Total Means} + \text{IM} + \text{NM}}$

APPENDIX L

MEPS SAMPLE SUMMARY SHEET

Group _____ Date Administered _____

(Enter Totals)

Story	N	Means	IM	NM	NR	Enum. of Means	Obsta- cles	Enum. of Obsta- cles	Time
1									
2									
3									
4									
5									
6									
7									
8									
9									
10									
Total									

APPENDIX M

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THE HAHNEMANN MEDICAL COLLEGE & HOSPITAL OF PHILADELPHIA
TWO-THIRTY NORTH BROAD STREET PHILADELPHIA, PENNSYLVANIA 19102

JEROME J. PLATT, Ph.D.
PROFESSOR & ASSOCIATE DIRECTOR

GRADUATE EDUCATION IN PSYCHOLOGY
MENTAL HEALTH SCIENCES
NEW COLLEGE BUILDING-17TH FL.
(215) 448-8109

October 13, 1978

Genelle L. Okerson, R.N., B.S.N.
2850 Clydedale
Apt. #102
Dallas, Texas 75220

Dear Ms. Okerson:

This letter is to confirm our telephone conversation of Friday, October 6, 1978. You have my permission to use the Means-Ends Problem Solving Procedure for your study.

Sincerely,

Jerome J. Platt, Ph.D.

Jerome J. Platt, Ph.D. (eg)
Professor and Associate Director,
Graduate Education in Psychology

JJP/eg

REFERENCE LIST

- Ackerman, N. W. Treating the troubled family. New York: Basic Books, Inc., 1966.
- Ackerman, N. W. Family psychotherapy and psychoanalysis: the implications of difference. In N. W. Ackerman (Ed.), Family process. New York: Basic Books, Inc., 1970.
- Aldous, J., Condon, T., Hill, R., Straus, M., & Tallman, I. (Eds.). Family problem solving. Hinsdale, Ill.: Dryden Press, 1971.
- Appel, P. W., & Kaestner, E. Interpersonal and emotional problem solving among narcotic drug abusers. Journal of Consulting and Clinical Psychology, 1979, 47, 1125-1127.
- Arieti, S. Interpretation of schizophrenia (2nd ed.). New York: Basic Books, Inc., 1974.
- Asher, J. J. Toward a neo-field theory of problem solving. Journal of General Psychology, 1963, 68, 3-8.
- Bannister, D. The logical requirements of research into schizophrenia. British Journal of Psychiatry, 1968, 114, 181-188.
- Barckley, M. A. A factor analytic investigation of the dimensions of group communication as a function of the type of interdependence (Doctoral dissertation, Indiana University, 1978). Dissertation Abstracts International, 1979, 39(11-A), 6394.
- Beavers, W. R. Psychotherapy and growth: A family systems perspective. New York: Brunner/Mazel, Inc., 1977.
- Bee, H. L. Socializing for problem solving. In J. Aldous, T. Condon, R. Hill, M. Straus, & I. Tallman (Eds.), Family problem solving. Hinsdale, Ill.: Dryden Press, 1971.
- Bloom, B. Stability and change in human characteristics. New York: John Wiley & Sons, 1964.

- Borgman, R. D., & Monroe, N. R. Life experiences and the decision to become a mental patient. Journal of Nervous and Mental Disease, 1975, 160, 428-434.
- Bourne, L. E., Abraham, T., Brauchi, J. T., Justesen, D. R., Beeker, C., Whitaker, L. C., & Yaroush, R. A. Limits to conceptual rule-learning by schizophrenic patients. Journal of Clinical Psychology, 1977, 33 324-334.
- Bowen, M. The family as the unit of study and treatment. American Journal of Orthopsychiatry, 1961, 31, 40-60.
- Bowen, M. Family psychotherapy with schizophrenia in the hospital and private practice. In I. Boszormenyi-Nagy & J. L. Framo (Eds.), Intensive family therapy: Theoretical and practical aspects. New York: Harper & Row, 1965.
- Bowen, M. Theory in the practice of psychotherapy. In P. J. Guerin, Jr. (Ed.), Family therapy: Theory and practice. New York: Gardner Press, Inc., 1976.
- Brown, G. W., Birley, J. L. T., & Wing, J. K. Influence of family life on the course of schizophrenic disorders: A replication. British Journal of Psychiatry, 1972, 121, 241-258.
- Chandler, M. E. Interpersonal control styles and problem solving strategies in self-regulation (Doctoral dissertation, The University of Rochester, 1977). Dissertation Abstracts International, 1978, 39(3-B) 1469, 1470.
- Chilman, C. S. Growing up poor. Publication 13. Washington, D.C.: Welfare Administration, 1966.
- Coates, G. D., Alluisi, E. A., & Morgan, B. B., Jr. Trends in problem-solving research: Twelve recently described tasks. Perceptual and Motor Skills, 1971, 33 (Part 1), 495-505.
- Davis, G. A. Current status of research and theory in human problem solving. Psychological Bulletin, 1966, 66, 36-54.

- Davis, G. A. Psychology of problem solving: Theory and practice. New York: Basic Books, Inc., 1973.
- DeLong, G. M. A comparison of clinic and non-clinic families' problem solving performance on two tasks (Doctoral dissertation, Arizona State University, 1977). Dissertation Abstracts International, 1978, 38(11-B), 5562.
- Diagnostic and Statistical Manual of Mental Disorders (DSM-III) (3rd ed.). Washington, D.C.: American Psychiatric Association, 1980.
- Duncan, C. P. Recent research on human problem solving. Psychological Bulletin, 1959, 56, 397-429.
- Eleftherios, C. P. A comparison of the interpersonal problem solving ability of adolescents differing in adjustment (Doctoral dissertation, University of Virginia, 1977). Dissertation Abstracts International, 1978, 38(7-A), 4041.
- Elias, M. J. Personal communication, November 26, 1978.
- Feinsilver, D. Communication in families of schizophrenic patients. Archives of General Psychiatry, 1970, 22, 143-148.
- Ferreira, A. J., & Winter, W. D. Decision-making in normal and abnormal two-child families. Family Process, 1968, 7, 17-36.
- Foster, S. L. Family conflict management: Skill training and generalization procedures (Doctoral dissertation, State University of New York at Stony Brook, 1978). Dissertation Abstracts International, 1979, 39(10-B), 5063, 5064.
- Fried, M. Social differences in mental health: In J. Kosa & I. K. Zola (Eds.), Poverty and health: A sociological analysis (rev. ed.). Cambridge, Mass.: Harvard University Press, 1975.
- Friedman, A. A., Boszormenyi-Nagy, I., Jungreis, J. E., Lincoln, G., Mitchell, H. E., Sonne, J. C., Speck, R. V., & Spivack, G. Psychotherapy for the whole family: Case histories, techniques and concepts of family therapy of schizophrenia in the home and clinic. New York: Springer, 1965.

- Goldenberg, I., & Goldenberg, H. A family approach to psychological services. The American Journal of Psychoanalysis, 1975, 35, 317-328.
- Gotlib, I. H., & Asarnow, R. F. Interpersonal and impersonal problem-solving skills in mildly and clinically depressed university students. Journal of Consulting and Clinical Psychology, 1979, 47, 86-95.
- Guirguis, W. R. The family and schizizophrenia. Psychiatric Annals, 1980, 10(7), 45-54.
- Haley, J., & Hoffman, L. Techniques of family therapy. New York: Basic Books, Inc., 1967.
- Hartmann, H. Essays on ego psychology. New York: International Universities Press, Inc., 1964.
- Hayes, T. R. Interpersonal and nonpersonal problem solving: A comparison with respect to subject sex, sex role orientation and problem orientation (Doctoral dissertation, Ohio University, 1977). Dissertation Abstracts International, 1978, 38(12-B), 6155.
- Herschkowitz, S., & Kahn, C. Toward a psychoanalytic view of family systems. The Psychoanalytical Review, 1980, 67, 45-68.
- Hess, R. D., & Shipman, V. C. Early experience and the socialization of cognitive modes in children. Child Development, 1965, 36, 869-886.
- Hoover, C. F. The embroiled family: A blueprint for schizophrenia. Family Process, 1965, 4, 291-310.
- Hunt, R. G., Gurrslin, O., & Roach, J. L. Social status and psychiatric service in a child guidance clinic. American Sociological Review, 1958, 23, 81-83.
- Illig, D. P. Distributional structure, sequential structure, multivariate information analysis, and models of the communicative patterns of elderly and young, married and friendship dyads in problem-solving situations (Doctoral dissertation, The Pennsylvania State University, 1977). Dissertation Abstracts International, 1978, 38(12-B), 6240, 6241.

- Intagliata, J. C. Increasing the interpersonal problem-solving skills of an alcoholic population. Journal of Consulting and Clinical Psychology, 1978, 46, 489-498.
- Jackson, D. D. (Ed.). The etiology of schizophrenia. New York: Basic Books, Inc., 1960.
- Jahoda, M. The meaning of psychological health. Social Casework, 1953, 34, 349-354.
- Jones, J. E., Rodnick, E. H., Goldstein, M. J., McPherson, S. R., & West, K. L. Parental transactional style deviance as a possible indicator of risk for schizophrenia. Archives of General Psychiatry, 1977, 34, 71-74.
- Kantor, D., & Lehr, W. Inside the family: Toward a theory of family process. San Francisco: Jossey-Bass Publishers, 1975.
- Kerlinger, F. N. Foundations of behavioral research (2nd ed.). New York: Holt, Rinehart, & Winston, Inc., 1973.
- Kolman, A. S. Adolescent problem definition behavior and its relationship to parental support and control patterns (Doctoral dissertation, University of Minnesota, 1977). Dissertation Abstracts International, 1978, 38(10-A), 6345.
- Kosa, J., & Robertson, L. S. The social aspects of health and illness. In J. Kosa & I. K. Zola (Eds.), Poverty and health: A sociological analysis (rev. ed.). Cambridge, Mass.: Harvard University Press, 1975.
- Laing, R. D. The divided self: A study of sanity and madness. Chicaco, Ill.: Quadrangle Books, 1960.
- Larcen, S. W., Spivack, G., & Shure, M. Problem-solving thinking and adjustment among dependent-neglected pre-adolescents. Paper presented at Eastern Psychological Association, Boston, 1972.
- Leff, J. P. Schizophrenia and sensitivity to the family environment. Schizophrenia Bulletin, 1976, 2, 566-574.
- Lehmann, H. E. Schizophrenia: Introduction and history. In A. M. Freedman, H. I. Kaplan, & B. J. Sadock (Eds.), Comprehensive textbook of psychiatry/II (2nd ed.) (Vol. 1), Baltimore: The Williams & Wilkins Co., 1975.

- Levenson, M., & Neuringer, C. Problem-solving behavior in suicidal adolescents. Journal of Consulting and Clinical Psychology, 1971, 37, 433-436.
- Lidz, T., Fleck, S., & Cornelison, A. R. Schizophrenia and the family. New York: International Universities Press, Inc., 1965.
- Longabaugh, R., & Hayes-Roth, F. Interactional uncertainty and premorbid asocial adjustment of schizophrenics. American Psychological Association 1973 Proceedings: 81st Annual Convention, 1973, 8(1), 471, 472.
- Maltzman, I. Motivation and the direction of thinking. Psychological Bulletin, 1962, 59, 457-467.
- Marsh, D. T. The impact of perspective-taking training on interpersonal problem solving (Doctoral dissertation University of Pittsburgh, 1977). Dissertation Abstracts International, 1978, 38(12-B), 6197, 6198.
- Marsh, D. T., Serafica, F. C., & Barenboim, C. Effect of perspective-taking training on interpersonal problem solving. Child Development, 1980, 51, 140-145.
- McClure, L. F., Chinsky, J. M., & Larcen, S. W. Enhancing social problem-solving performance in an elementary school setting. Journal of Educational Psychology 1978, 70, 504-513.
- Meichenbaum, D. H., & Goodman, J. Training impulsive children to talk to themselves: A means of developing self-control. Journal of Abnormal Psychology, 1971, 77, 115-126.
- Merrifield, P. R., Guilford, J. P., Christensen, P. R., & Frick, J. W. The role of intellectual factors in problem solving. Psychological Monographs: General and Applied, 1962, 76(10) (pt. 1, Whole No. 529), 1-21.
- Messer, A. A. Mechanisms of family homeostasis. Comprehensive Psychiatry, 1971, 12, 380-388.
- Miller, D. C. Handbook of research design and social measurement (3rd ed.). New York: David McKay Company, Inc., 1977.

- Minuchin, S., Chamberlain, P., & Grambard, P. A project to teach learning skills to disturbed, delinquent children. American Journal of Orthopsychiatry, 1967, 37, 558-567.
- Mishler, E. G., & Waxler, N. E. Interaction in families: An experimental study of family process and schizophrenia. New York: John Wiley & Sons, 1968.
- Mitchell, C. B. The effects of short-term intensive training on the family communication skills (Doctoral dissertation, The Ohio State University, 1979). Dissertation Abstracts International, 1979, 40(1-B), 458.
- Morris, G. O., & Wynne, L. C. Schizophrenic offspring and parental styles of communication. Psychiatry, 1965, 28, 19-44.
- Muuss, R. E. A comparison of "high causally" and "low causally" oriented sixth grade children in respect to a perceptual "intolerance for ambiguity test." Child Development, 1960, 31, 521-536.
- Newell, A., & Simon, H. A. Human problem solving. Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1972.
- Nowinski, J. K. Validation of a measure of interpersonal effectiveness (Doctoral dissertation, The University of Connecticut, 1977). Dissertation Abstracts International, 1978, 38(11-B), 5582, 5583.
- Ojemann, R. H. Incorporating psychological concepts in the school curriculum. Journal of School Psychology, 1967, 5, 195-204.
- Pishkin, V., & Williams, W. V. Cognitive rigidity in information processing of chronic undifferentiated schizophrenics. Journal of Clinical Psychology, 1977, 33, 625-630.
- Platt, J. J. Personal communication, September 6, 1978.
- Platt, J. J., Scura, W. C., & Hannon, J. R. Problem-solving thinking of youthful incarcerated heroin addicts. Journal of Community Psychology, 1973, 1, 278-281.

- Platt, J. J., Siegel, J. M., & Spivack, G. Do psychiatric patients and normals see the same solutions as effective in solving interpersonal problems? Journal of Consulting and Clinical Psychology, 1975, 43, 279.
- Platt, J. J., & Spivack, G. Problem-solving thinking of psychiatric patients. Journal of Consulting and Clinical Psychology, 1972, 39, 148-151. (a)
- Platt, J. J., & Spivack, G. Social competence and effective problem-solving thinking in psychiatric patients. Journal of Clinical Psychology, 1972, 28, 3-5. (b)
- Platt, J. J., & Spivack, G. Means of solving real-life problems: I. Psychiatric patients vs. controls and cross-cultural comparisons of normal females. Journal of Community Psychology, 1974, 2, 45-50.
- 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, Canada, 1973. In Proceedings of the 81st Annual Convention of the American Psychological Association, 1973, 8(Part 1), 461, 462.
- Platt, J. J., & Spivack, G. The MEPS procedure manual. Philadelphia: Hahnemann Community Mental Health/Mental Retardation Center, 1975.
- Platt, J. J., Spivack, G., Altman, N., Altman, D., & Peizer, S. B. Adolescent problem-solving thinking. Journal of Consulting and Clinical Psychology, 1974, 42, 787-793.
- Posner, M. I. Memory and thought in human intellectual performance. British Journal of Psychology, 1965, 56, 197-215.
- Reiss, D. Individual thinking and family interaction, II. A study of pattern recognition and hypothesis testing in families of normals, those with character disorders, and schizophrenics. Journal of Psychiatric Research, 1967, 5, 193-211.

- Reiss, D. Individual thinking and family interaction, III. An experimental study of categorization performance in families of normals, those with character disorders, and schizophrenics. Journal of Nervous and Mental Disease, 1968, 146, 384-403.
- Reiss, D. Individual thinking and family interaction, IV. A study of information exchange in families of normals, those with character disorders, and schizophrenics. Journal of Nervous and Mental Diseases, 1969, 149, 473-490.
- Reiss, D. Varieties of consensual experience, I. A theory relating family interaction to individual thinking. Family Process, 1971, 10, 1-28.
- Richter, H. E. The role of family life in child development. International Journal of Psychoanalysis, 1976, 57, 385-395.
- Roff, J. D. Adolescent development and family characteristics associated with a diagnosis of schizophrenia. Journal of Consulting and Clinical Psychology, 1976, 44, 933-939.
- Rosen, B. C. The achievement syndrome: A psychocultural dimension of social stratification. American Sociological Review, 1956, 21, 203-211.
- Rosen, B. C. Race, ethnicity, and the achievement syndrome. American Sociological Review, 1959, 24, 47-60.
- Salzinger, K. Schizophrenia: Behavioral aspects. New York: John Wiley & Sons, Inc., 1973.
- Sartorius, N., Shapiro, R., & Kimura, M. Towards an international definition of schizophrenia: A report from the international pilot study of schizophrenia. British Journal of Psychiatry, 1975, Special Publication No. 10 (Studies of Schizophrenia, edited by M. H. Lader).
- Satir, V. Conjoint family therapy (rev. ed.). Palo Alto, Ca.: Science and Behavior Books, Inc., 1967.
- Scheerer, M. Problem-solving, Scientific American, 1963, 208(4), 118-128.

- Schiff, J. L. Cathexis reader: Transactional analysis treatment of psychosis. New York: Harper & Row, Inc., 1975.
- Schner, J. G. An investigation of effective modes of preparation for an interpersonal coping skills program (Doctoral dissertation, University of Toronto, 1978). Disseratation Abstracts International, 1979, 40(2-B), 900
- Schubert, D. S. P., & Miller, S. I. Differences between the lower social classes: Some new trends. American Journal of Orthopsychiatry, 1980, 50, 712-717.
- Scott, R. D., & Askworth, P. L. "Closure" at the first schizophrenic breakdown: A family study. British Journal of Medical Psychology, 1967, 40, 109-145.
- Searles, H. F. The contributions of family treatment to the psychotherapy of schizophrenia. In I. Boszormenyi-Nagy & J. L. Framo (Eds.), Intensive family therapy: Theroetical and practical aspects. New York: Harper & Row, 1965.
- Shure, M. B. Personal communication, October 19, 1978.
- 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.
- Siegel, S. Nonparametric statistics for the behavioral sciences. New York: McGraw-Hill Book Company, 1956.
- Sills, G. M. Research in the field of psychiatric nursing, 1952-1977. Nursing Research, 1977, 26, 201-207.
- Simon, H. A., & Newell, A. Human problem solving: The state of the theory in 1970. American Psychologist, 1971, 26, 145-159.
- Singer, M. T., & Wynne, L. C. Thought disorder and family relations of schizophrenics: III. Methodology using projective techniques. Archives of General Psychiatry, 1965, 12, 187-200. (a)

- Singer, M. T. , & Wynne, L. C. Thought disorder and family relations of schizophrenics: IV. Results and implications. Archives of General Psychiatry, 1965, 12, 201-212. (b)
- Singer, M. T., & Wynne, L. C. Principles for scoring communication defects and deviances in parents of schizophrenics: Rorschach and TAT scoring manuals. Psychiatry, 1966, 29, 260-288.
- Skygger, A. C. R. Systems of family and marital psychotherapy. New York: Brunner/Mazel, Inc., 1976.
- Spivack, G., & Levine, M. Self-regulation in acting-out and normal adolescents. Report M-4531, National Institute of Health, Washington, D.C., 1963.
- Spivack, G., Platt, J. J., & Shure, M. B. The problem-solving approach to adjustment. San Francisco: Jossey-Bass Publishers, 1976.
- Strauss, M. A. Communication, creativity, and problem-solving ability of middle and working-class families in three societies. American Journal of Sociology, 1968, 73, 417-430.
- Szasz, T. Schizophrenia: The sacred symbol of psychiatry. New York: Basic Books, Inc., 1976.
- Treece, E. W., & Treece, J. W., Jr. Elements of research in nursing (2nd ed.). St. Louis: The C. V. Mosby Company, 1977.
- Vaughn, C. E., & Leff, J. P. The influence of family and social factors on the course of psychiatric illness: A comparison of schizophrenic and depressed neurotic patients. British Journal of Psychiatry, 1976, 129 (Part 2), 125-137.
- von Bertalanffy, L. General system theory: Foundations, development, applications. New York: George Braziller, 1968.
- Weinstein, E. A. The development of interpersonal competence. In D. A. Goslin (Ed.), Handbook of socialization theory and research. Chicago: McNally, 1969.

- Weinstock, A. R. Family background and defense mechanisms. Journal of Personality and Social Psychology, 1967, 5, 67-74.
- Wild, C. M., Shapiro, L. N., & Abelin, T. Sampling issues in family studies of schizophrenia. Archives of General Psychiatry, 1974, 30, 211-215.
- Wild, C. M., Shapiro, L. N., & Abelin, T. Communication patterns and role structure in families of male schizophrenics. Archives of General Psychiatry, 1977, 34, 58-70.
- Wynne, L. C. Communication disorders and the quest for relatedness in families of schizophrenics. American Journal of Psychoanalysis, 1970, 30, 100-114.
- Wynne, L. C., & Singer, M. T. Thought disorder and family relations of schizophrenics: I. A research strategy. Archives of General Psychiatry, 1963, 9, 191-198. (a)
- Wynne, L. C., & Singer, M. T. Thought disorder and family relations of schizophrenics: II. A classification of forms of thinking. Archives of General Psychiatry, 1963, 9, 199-206. (b)