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FAMILY VERBAL STYLE AS A FACTOR OF PEER STATUS AMONG HIGH RISK CHILDREN

By

IVIS L. VILLAR

A dissertation submitted to the Graduate Faculty in Psychology in partial fulfillment of the requirements for the degree of Doctor of Philosophy, The City University of New York.

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Abstract

FAMILY VERBAL STYLE AS A

FACTOR OF PEER STATUS

AMONG HIGH RISK CHILDREN

By

IVIS L. VILLAR

Advisor: Professor Vera S. Paster

Aspects of family interaction were investigated as factors possibly related to peer status. The study population included 90 ten year old, white males, each of whom had a psychiatrically-impaired parent. The children and their families were participants in the University of Rochester Child and Family High Risk Study. A Family Rorschach procedure was used to elicit family interaction, aspects of which were quantified by reviewing videotapes of the sessions. Peer status was measured by use of role nominations made for a class play.

The family interaction variables that were correlated with peer status were (1) the amount of verbal communication, (2) the degree of acknowledgment, (3) the amount of behavior commands, and (3) positive versus negative verbal exchange. It was hypothesized that parents who were attentive, responsive, open-ended and positive would have children who would be popular, while parents who were inattentive, unresponsive, directive and negative,

would have children who would be unpopular. No meaningful correlation was found between peer status and the family interaction variables as measured.

A novel index of peer status, called "pro-pref", was developed. Pro-pref, unlike more traditional indices of peer status, looks only to the percentage of a child's nominations that are positive, rather than to the absolute number of positive nominations (less the number of negative ones). This index correlated significantly with family acknowledgment.

Significant differences were found between peer status and demographic variables, such as intelligence and number of older siblings. Further observations were made concerning the realtionship between the family interaction variables and peer status to suggest the existence of a non-linear relationship.

These results may have been affected by the "at risk" nature of the children studied, since each had a psychiatrically-impaired parent. No difference was apparent, however, between peer status of these children and that of their classmates.

Future investigations into these relationships may seek to improve on the quality of the family interaction data by using a more realistic setting, than a Family Rorschach, such as home-based observations.

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Last but not least, a special mention to my father, Amor Villar, whom I lost during my second year of study. He would have been proud and joyful to see his daughter receive her Ph.D.

Boston, Massachusetts

September, 1986

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Chapter One: Introduction and Overview of The Importance of Peer Groups

INTRODUCTION

Peer groups serve an important function in the lives of children and make a significant contribution to a child's social and cognitive growth (Hartup, 1970). The consequences of poor social skills in childhood have gained renewed attention and interest during the past decade. Recent research has suggested that children who are considered unusual or deviant by their peers are more likely to exhibit persistent and long-lasting social or emotional maladjustment. Although commentators have suggested that investigation into the interaction style of families producing these children could yield valuable insights (Berndt, 1983; Blyth, 1983), scant research has been done on the family backgrounds of these children. This dissertation will follow up on these suggestions by comparing the family interaction styles of a group of children having poor, average, and above average peer status, all of whom come from families deemed to be at risk because one parent has a history of psychiatric impairment.

BACKGROUND OF THE PROBLEM

Early investigations using sociometric questionnaires have correlated childhood social maladjustment to later psychological disturbance and behavioral disorders (Roff, Sells & Golden, 1972; Cowen, Pederson, Babigian, Izzo & Trost, 1973) and provided the impetus for research into many facets of social competence in children. At present, very little is known about the longitudinal course of social status, in particular the transition period from childhood to adolescence. Roff, et al., (1972) have done the most extensive research demonstrating the relative consistency of positive and negative sociometric choice scores. Their results indicate that social rejection is somewhat less stable than social acceptance. More recently, Coie and Dodge (1983) transformed positive and negative peer evaluations into dimensions of social preference and social impact and, unlike Roff, et al., (1972) reported more stability in the negative results than in the positive ones. Recent research has focused on how peer status gets established among children and which particular groups of children are at risk for unhealthy adult development (Coie & Kupersmidt, 1983; Dodge, 1983).

STATEMENT OF THE PROBLEM

It is possible that the determinants for a child's social status may be found beyond the confines of the peer group, particularly in relationships with family members (Hartup, 1983). The primacy of the family has always been stressed in theories of child development and has been categorized as the first social world of the child. Affects, perspective taking, and social reality testing are first experienced within family relations. The child's second and third social worlds are his peer group and school.

Some research exists to support the presumption that family background has a strong influence on peer status. A study by Waters, Wippman and Stroufe (1979) measured secure attachments versus anxious attachment of mother/child interactions. At approximately three and a half, while in nursery school, the peer interactions of these youngsters were assessed by Q-sorts based on five weeks of observations. There was a two-year separation between the primary attachment measure and the peer observations. The results indicate that the securely attached children were socially active, sought out by other children, peer

leaders, active in making suggestions, sympathetic to peer distress, and quick to react to overtures from other children. The authors suggested that the failure to form effective social relationships within the family disposes the individual child to trouble in peer relations.

In a review of the current research on peer status, Blyth (1983) pointed out the need to assess a wider variety of individuals, such as parents, siblings and teachers, who play important roles in a child's social world. Hartup (1983) in a chapter on peer relations in which he reviews a great deal of literature, states: "secure family relations are the basis for entry into the peer system and success within it. Family breakdown tends to interfere with adaptation to the peer culture and good family relations are needed throughout childhood and adolescence as the basis for peer relations" (p. 172).

This study focuses on verbal interaction as a representation of family relationships and its affect on the peer acceptance of children.

PURPOSE AND OBJECTIVES OF THE STUDY

This dissertation will investigate whether family interaction styles determine the acceptance of children by their peers.

The subproblems that will be pursued include the following:

1. Do families having high levels of verbal communication produce children who have a high degree of impact (whether positive or negative) on their peers?
2. Do families having positive patterns of interaction produce children who are positively accepted by their peers?
3. Do parents who tend to dominate their children with behavior commands produce children who are less likely to be accepted by their peers?
4. Do families having positive relationships produce children who are positively perceived by their peers?

The data to be used was collected as part of the University of Rochester Child and Family Study.

Chapter Two: A Review of the Literature

REVIEW OF THE LITERATURE

Sociometric Tests: Measuring Peer Status

In order to study the importance of peer status, and to correlate it with family interaction style, it is first necessary to measure peer status. The important literature in the field, therefore, involved the development of sociometric tests to measure peer status. Although several types of such tests have been developed, they have one common attribute: they quantify one or more personal characteristics of group members based upon the aggregate of each group member's evaluation of each other member. In this manner, the tests provide a concise view of each group member's position within his or her group.

Sociometric tests were first developed in the study of adult peer relationships and friendships which flourished in the period beginning in the late 1920's and lasted through the beginning of World World II (Parten, 1933). Controlled methods of recording observations of individuals in groups were perfected during this period. Similar observations of children's groups began in 1937 by Lewin and his colleagues, focusing on the consequences of variations in leadership style (Lewin, Lippitt & White, 1938).

In 1934 the sociometric technique became widely popular with the publication of Moreno's work. Although his sociometric testing began with adults, it had a major impact on the research of the social choices of children.

Classifications Derived from Sociometric Tests

There was an evolutionary process in the types of characteristics that sociometric tests sought to identify. Early tests focused on identifying children with positive characteristics. For this purpose, peers were asked to name the three children they liked most. Children who received an abundance of positive nominations have traditionally been referred to as popular.

Later tests sought to identify negative as well as positive characteristics by asking peers such questions as "with whom would you least like to play?" (Dunnington, 1957; Moore & Updegraff, 1964). Children who received an abundance of negative nominations were classified as rejected.

Still later, researchers realized that there existed yet another group of unusual children: those who receive few nominations as being either actively liked or disliked. These children are referred to as neglected (Northway, 1944; Gronlund & Anderson, 1957). Recently, a group of children who receive many nominations as both

liked and disliked have been identified and labeled controversial (Coie, Dodge & Coppotelli, 1982).

Dunnington (1957) and Perry (1979) suggested that peer nomination scores that indicate a child's like or dislike for a peer can be combined to create two new dimensions of sociometric status. The sum of the number of times that a child is nominated by classmates as being liked most (LM) or liked least (LL) was used to yield a new score that Perry called "social impact." A child's "liked most" score minus their "disliked most" score (LM minus LL) yielded a score that Perry (1979) called "social preference."

Types of Sociometric Tests

a. Peer Nomination

The most commonly used sociometric scale is the peer nomination method which was adapted from Moreno (1934). Moreno felt that only those tests which attempt to measure the feelings of individuals toward each other concerning a matter that may have an immediate effect on them could correctly be called sociometric. For example, Moreno asked school youngsters to provide a first and second choice of the child next to whom they would most like to sit. In Moreno's conception the procedure was sociometric because the child believed that the response might have an immediate effect. To make the nomination method an

accessible procedure for preschoolers, McCandless and Marshall (1957) suggested using photographs of peers instead of relying on written nominations.

b. A Class Play

Another approach to sociometric classification was invented by Bower (1960). In this approach, which is called "A Class Play," the children in a classroom are informed that they have been selected to be directors of a class play. In this capacity, each child nominates one classmate who would best play each of fifteen parts. The descriptors capture personality differences among children. For example, the "director" is asked to name someone who could play the part of a "true friend" or someone who could play the part of a "mean, cruel boss." The children are then asked to select parts of the same play for themselves and to guess the parts for which they might have been nominated.

c. Weighted versus unweighted scores

Nomination data can be scored in many ways. There has been a tendency over the years to prefer an unweighted scoring procedure (Asher, Singleton, Tinsley & Hymel, 1979; Gottman, 1977; Peery, 1979) rather than a weighted scoring procedure (Dunnington, 1957a; Hartup, Glazer & Charlesworth, 1967). An unweighted scoring system is the total number of nominations received from peers, without

taking account of the order of the nominations. If a weighted scoring system was employed, the child's first choice might receive a weight of five, second a weight of three, and third a weight of one. The trend toward the unweighted procedure was a consequence of research indicating that weighted and unweighted scores were highly correlated, making the more time-consuming weighting procedure unnecessary (Asher, et al., 1979; Gottman, 1977).

d. Picture Nomination

Nomination measures for elementary school children have been found to be stable over time (Bonney, 1943; Busk, Ford & Schulman, 1973; Oden & Asher, 1977). The same kind of stability has not been found for preschool children (Bronfenbrenner, 1944). In part to enhance the reliability of sociometric tests for preschoolers, the technique of using photographs in eliciting nominations was implemented, but test-retest procedures using this technique with preschoolers have provided only a moderate degree of correlation (Asher, et al., 1979; Hartup et al., 1967; McCandless & Marshall, 1957; Moore & Updegraff, 1964). Acceptance scores, however, are the most reliable with preschoolers (Asher, et al., 1979; Cohen & Van Tassel, 1978; Hartup, et al., 1967) and reliability increases with age (Busk, et al., 1973). Both with preschool and older

children, many studies have found nomination scores to be related to observational measures of peer interaction (Furman & Masters, 1980; Goldman, Corsini & de Urioste, 1980), social-cognitive abilities (Rubin, 1972, Jennings, 1975), and to teacher-ratings of adjustment and behavior (Connolly & Doyle, 1981).

All the predictive validity studies using nomination methods have used elementary school age and early adolescent populations. These studies have proven to be good predictors of school dropout (Ullman, 1957), juvenile delinquency (Roff, et al., 1972) and later psychiatric involvement (Cowen, et al., 1973).

e. Paired Comparisons

The paired-comparison technique is a less-utilized sociometric measure. The main reason for this is its more lengthly administration time as compared with the nomination method. The procedure consists of presenting all possible pairs of peers within a classroom of children and asking each child to choose one classmate of every pair according to a specific positive or negative criteria such as "with whom would you most or least like to play?" These paired presentations have been made using names of peers (Koch, 1933), and photographs (Cohen & Van Tassel, 1978; Vaughn & Waters, 1980, 1981). A child's score is the total number of times selected as the preferred or not preferred child.

In spite of its infrequent use, paired-comparisons have many advantages over the nomination method. The assumption that when a picture nomination measure is used a child considers every peer and makes comparisons among them before selecting the nominee has been questioned (Vaughn & Waters, 1981). The paired-comparison method also provides a large data base on which to calculate a child's score (Cohen & Van Tassel, 1978; Vaughn & Waters, 1981) and, therefore, provides a more reliable index of sociometric status than the nomination method. Research has substantiated this claim. Paired-comparison scores, especially positive ones, have been found to be a more reliable measure of social status for preschoolers (Cohen & Van Tassel, 1978; Vaughn & Waters, 1981) and for elementary school children (Witryo & Thompson, 1953). A .90 and .54 test-retest correlation have been found for positive and negative criteria paired-comparison scores, respectively, over three preschool terms. Concurrent validity data is only available for preschool children. Results indicate that highly preferred children were more accepting of rules than less preferred children, who were also more aggressive (Koch, 1933). Other researchers have found that highly preferred children received more visual attention from their peers and their scores were related to the amount of interactive talking and interactive and parallel play

(Vaughn & Waters, 1980, 1981). There are no predictive validity studies for paired-comparison measures.

f. Rating Scale

Roistacher (1974), Singleton and Asher (1977), and Thompson and Powell (1951) have used a rating scale method in which each child rates all his classmates on certain dimensions, such as how much they like to play or work with them. These scores are used to determine each child's social standing with peers. In cases in which sex bias is possible, a child's average rating score can be derived by using same-sex peers (Oden & Asher, 1977). In contrast to the nomination method and similar to the paired-comparison one, this type of sociometric method will include each child's perception of every classmate, yielding a large data base for calculating sociometric status. The rating scale also does not require an extensive amount of time to administer, one of the drawbacks of the paired-comparison procedure. With preschool children this procedure has been modified using photographs (Asher, et al, 1979).

Rating scale measures have a higher test-retest reliability coefficient than nomination measures for elementary age (Oden & Asher, 1977; Thompson & Powell, 1951) as well as preschool age children (Asher, et al., 1979). The reliability for preschoolers is comparable to

that found with the paired-comparison measure (Cohen & Van Tassel, 1978).

Another approach to sociometric measurement is to combine the positive nomination method with a rating scale. This procedure yields two dimensions. First, using a limited positive choice instrument, usually in the form of "name three children you especially like," yields the number of friends a child has. Then, by asking "how much you would like to play with (child's name)," the result may be viewed as an indication of the child's overall acceptability or likeability by the peer group. This distinction between friendship and acceptance has been used in friendship nomination measurements in desegregated schools, where racial bias is presumed to exist (Criswell, 1939; Shaw, 1973). By adding a rating-scale measure of acceptance, a measure which does not require naming anyone as a best friend, this bias is almost completely eliminated. (Singleton & Asher, 1977; 1979).

One study with preschoolers found rating scale scores to be related to measures of observed positive interaction (Asher, et al., 1979) and another found a relationship between rating scale scores and the maturity of the children's observed play. The more highly-rated children engaged in more conversations with peers and more group play (Hayvren, 1981). There are no predictive validity

studies for rating scale measures for either preschool or older subjects.

The Predictive Quality of Early, Negative Peer Evaluations

There has long been a controversy as to whether early dysfunction predicts later disability. Clarizio (1969) reviewed numerous studies which sought to provide evidence supporting this progression and concluded that the generality or stability of this relation was questionable. Clarizio concluded that the children with behavior disturbances of the acutely aggressive acting-out variety were likely candidates for later disturbances, but that shy, withdrawn children might outgrow their inhibitions. In 1966 Robins published his findings of an extensive thirty year follow-up study examining the later life events of more than five hundred subjects who were first seen as children at a clinic. Most of these children suffered from early deviant behavior. Results indicated that these subjects, when compared to matched controls, manifested a higher incidence of maladjustment in later life. Not only were they more antisocial as adults, but they had a higher incidence of psychiatric disease, seriously disabling symptoms, arrest rates, divorce rates, lower occupational achievement, hospitalization and alienation. In spite of these consistent results, researchers have continued to be

divided on whether early dysfunction is actually a stable and consistent predictor.

The often-cited investigations of Roff, et al., (1972) and Cowen, et al., (1973) were landmark studies which presented sociometric data suggesting a correlation between early vulnerability and later psychiatric dysfunction.

Roff, et al., (1972) engaged in a comprehensive four year longitudinal study of peer status among school children from Minnesota and Texas. In this study, the researchers investigated the relationship of peer acceptance-rejection scores to family factors such as intelligence, birth order, ethnic group membership, school grades and various personality characteristics. The researchers also studied the similarity in peer status between siblings and between twins. Results show a relationship between unfavorable peer ratings and later juvenile delinquency. This relationship was not the same at different socioeconomic levels. At the upper and middle levels, delinquency tended to occur in boys who had been rejected by other boys, and there was almost no delinquency among the high-choice boys. At the lowest socioeconomic level, delinquency occurred with about equal frequency among the most-rejected and the best-liked boys.

Roff (1972) studied the correlation between birth order among siblings and popularity among peers. He found that, from the point of view of peer status, the most favored sibling position was that of the second of two children. The next most favored was the youngest child of three or more. The least favorable situation was in the middle of four or more children.

In a retrospective study spanning a range from eleven to thirteen years, Cowen, et al., (1973) were able to obtain psychiatric histories on 537 subjects who were between the ages of six to eight at the beginning of the study. Some had participated in a school-based preventive mental health program (experimental group) and others were controls at the outset of the study. Measures of clinical prognostic judgments pertaining to school adaptation and early test data were available. Some of the children had been designated as giving evidence of manifest or incipient maladaptation ranging from moderate to severe. The long-term follow-up measure of contact with a psychiatric facility, in this case the Monroe County (New York) Psychiatric Register, was considered an outside, face-valid index of dysfunction or adaptive difficulties.

The results of the follow-up indicated the youngsters designated vulnerable not only appeared on the psychiatric register in greater numbers than did controls, but appeared

earlier. Cowen, et al., concluded that "clinically-judged vulnerability, based on early ineffective school performance and behavior (rather than profound dysfunction) thus has predictive value in identifying those who experience later more severe psychiatric difficulties" (p.442). The measure which most accurately predicted later dysfunction was frequent nomination for negative roles by peers in a "Class Play" measure.

The Roff (1972) and Cowen (1973) studies reveal that a rejected peer group status tends to predict later social dysfunction. There is disagreement, however, about which subgroup of children, rejected versus neglected, is most at risk for later difficulties. (Asher, 1983; Coie & Kupersmidt, 1983; French & Waas, 1985).

Longitudinal Stability in Sociometric Status

A five-year longitudinal study by Coie and Dodge (1983) investigated the continuity and changes in children's social status. Yearly sociometric data were collected during a five-year period on a sample of 96 third graders and 112 fifth graders. Positive and negative sociometric items were transformed into dimensions of social preference and social impact. Social status groups of rejected, popular, neglected and controversial children were identified each year.

There were five behavior description variables used in this study: cooperative, disruptive, acts shy, starts fights, and leader. The "acts shy" variable was less stable across years among the third grade cohort than among the fifth grade cohort. Inspection of the correlations for the "acts shy" variable, using all available scores, revealed that this variable increased in stability as children grew older. Social preference in a given year could be predicted from social preference in previous years. For the neglected children, however, status was less stable than for rejected children. The percentage of children remaining neglected over a one-year interval was 25%. The children who were neglected in the first year spread themselves across the neglected, popular, and average status categories in subsequent years. They were less likely to become rejected or controversial and more likely to become average. It has been discovered that these children are not particularly lonely (Asher & Wheeler, 1983) and are likely to be more accepted in new groups (Coie & Kupersmidt, 1983).

The rejected status group was more stable than any other group. Children who were rejected in year one had a less than chance probability of becoming popular in year five. The same stability was found from kindergarten to grade one (Rubin & Daniels-Beirness, 1983). Children who

became (or remained) rejected had relatively low scores as cooperative and leaders, and high scores as disrupting the group and starting fights. These findings are in agreement with the behavior ratings and observations reported by Olweus (1979), Loeber (1982) and Pulkkinen (1982) who found a similar stability in the aggressive patterns over this age span. Teachers rated rejected children as experiencing more problem behaviors, less need achievement and greater academic difficulties (Virtue & French, 1984).

A sizeable number of children who are rejected in elementary school become rejected in junior high school. Sociometric status remains moderately stable even as children advance to higher grades and the composition of class varies (Rubin & Daniels-Beirness, 1983). In a study of the social networks of children, the author noted that the rejected children's interactions were conducted in small groups and distributed among younger and/or unpopular companions (Ladd, 1983).

The present data, coupled with evidence that rejected boys quickly reacquire rejected status when placed in groups of totally unfamiliar boys (Coie & Kuppersmidt, 1983) underscores the persistent nature of the rejected child's social difficulties. In another study (Asarnow, 1983), the interpersonal style of two groups of fourth and sixth grade boys were compared. Only one group from each

class had peer adjustment problems. The children were observed at school playtime. The author found that children without adjustment problems were able to neutralize initial negative peer interactions, but children with adjustment problems were not. These findings indicate that sociometric status is not merely a result of a particular setting or group. These data make a case that although neglected children are quite likely to move toward more positive social status (average or popular) with the simple passage of time and without intervention, rejected children do not appear to move toward positive social status. The neglected children almost never become rejected or controversial in junior high. Thus, neglected elementary school children are those who keep a very low profile and continue to be socially inoffensive on into junior high. French and Waas (1985) found that neglected children did not exhibit more behavior problems than children of average status. Coie and Dodge (1983), therefore, conclude that these rejected groups of children are in the most need of help.

Asher (1983) stated that it is premature to suggest that neglected children do not seem to be at risk. He noted that the highly withdrawn child who does not give offense but lacks the ability to form close relationships should be of concern. He believes that this kind of child

probably is a minority among those who are sociometrically neglected, but, nevertheless, of clinical interest and should not be overlooked.

Behavior/Cognitive Correlates of Peer Status

Several studies have examined the relationship between school competence, as measured by peer and teacher rating scales, and other variables. Coie, Dodge and Coppotelli (1982) sought to determine what particular behaviors peers would identify with different social status groups and whether these perceptions changed over time. A list of 24 behavior descriptions similar to items used in "A Class Play" (Bower, 1960) were presented to 311 children in the third, fifth and eighth grades. Each child was asked to nominate three classmates whom he or she liked most and liked least. Following this, each child was asked to name three children who best fit each of 24 standardized behavioral descriptions. The results indicated basic agreement among the grade levels as to the factors perceived as common among the least and most liked children. In general, children seemed to have clearer ideas about the correlates of rejection than of acceptance.

Major correlates of the "like most" score include the descriptions "supports peers," "attractive physically," "cooperates with peers," and "leads peers." The major

correlates of the "like least" score include the descriptions "disrupts the group," "aggresses indirectly," "starts fights," "gets into trouble with teacher," and "acts snobbish." Ladd (1983) found a higher percentage of younger friends among both the play groups and nonschool friends of rejected students.

A multiple regression analysis was used to predict social preference for the three grade levels and again the major predictors of high social preference were similar across all three grade levels. A subsequent study (Ladd, 1983) found that third and fourth graders reported more liking for classmates who engaged in more cooperative play and less arguing. The negative correlates of social preference were similar for third and fifth graders, but somewhat different for eighth graders. For the older group, low social preference was characterized by not fitting in with peers (not accepted) rather than by overt, active misconduct (disruptive). These results also indicated that older children were less stereotyped and more differentiated in their perceptions since more of the variance in social preference was predicted by fewer variables at grade three than at grades five or eight. The behaviors associated with high social impact (total of all nominations received, positive and negative) included a combination of active, positive behaviors ("supports peer"

and "leads peers") and salient, negative behaviors ("disrupts the group," "gets into trouble with teacher," and "starts fights.")

After this initial study, Coie, et al. (1982) then classified children according to social preference (positive nominations minus negative ones) and impact to identify five sociometric status groups: popular, rejected, neglected, controversial, and average children. The scores were standardized by grade so that equivalent selection procedures were employed across grade level.

Over a period of two years the size of the population being studied was expanded from 311 children to 848. Fifty-two percent were male and 32% were black. There were 213 third graders, 300 fifth graders, and 335 eighth graders. The 24 item pool was reduced to six items on the basis of a hierarchical cluster analysis (Johnson, 1967). The item headings were cooperates, disrupts, acts shy, fights, seeks help, is a leader. The dependent variable consisted of the number of times a child was nominated for each item by peers.

Boys were found more likely than girls to be in the rejected group (15.4% versus 10.6%). Virtue and French (1984) also found that the rejected boys were considered more at risk for adjustment problems. A significant multivariate main effect for gender was found for the pool

of six behavioral descriptions. Specifically, females received more nominations than males for the items "cooperates" and "acts shy" whereas males received more nominations than females for the items "fights" and "seeks help." Differences in social status groups were also found. For instance, the popular children were perceived by peers in a prosocial manner. They received high scores for the "cooperates" and "is a leader" descriptions and low scores for the "disrupts," "fights," and "seeks help" descriptions.

Hartup (1983) found peer popularity to be associated with high self-esteem, intellectual ability, and sociability. The profiles for the rejected group were the opposite. They received low scores for the two prosocial items "cooperates" and "leader" and high scores for the three negatively valenced descriptions "disrupts the group," "fights," and "seeks help." There was no difference between these two groups in the "shy" description. The profiles obtained by Hartup (1983) described the popular child as friendly and adept in initiating and maintaining social interaction with other children. The rejected child was less friendly than the non-rejected child, and displayed more antisocial, disruptive, and inappropriate behaviors in interaction with other children. The controversial children had

characteristics of both the popular and rejected children. They were perceived as leaders, and also as disruptive and starting fights. The controversial children were not perceived as being as cooperative as popular children but neither were they viewed as lacking this trait the way rejected children were. On this variable, they were closer to the average group.

Dodge, Coie and Brakke (1982) did a study to determine specific behavioral differences among children in several social status groups. Most of the descriptive findings on the behavioral correlates of rejected and neglected peer status are based on peer or teacher perceptions. A number of studies have employed direct observational methods (Asher, Oden & Gottman, 1977; Asher & Hymel, 1981). The observational data match the peer perception data quite well.

The authors found that, in contrast to popular children, rejected children displayed less task-appropriate behavior and more task-inappropriate and aggressive behavior. Whereas rejected children prosocially approached peers as frequently as did popular children, peer responses to the approaches of rejected children were more likely to be negative. Neglected children displayed relatively few task-inappropriate and aggressive behaviors, but socially approached peers infrequently. When joining a group, their

approach is one of waiting and hovering (Dodge, Schlundt, Schocken & Delugach, 1983) while rejected children are disruptive. Putallaz and Gottman (1981) coined the term "Newcomer Hypothesis" to describe the fearful and shy manner unpopular children exhibit when entering a group. Dodge, et al. (1983), in a variant of this hypothesis, described rejected children as characteristically jumping into group situations with tactics such as interrupting the group's activity when trying to enter a group of peers, rather than following a more low-risk approach of waiting and hovering.

A significant main effect for appropriate solitary activity was found for the neglected group. They also made fewer prosocial approaches than did any of the other three groups. This finding is consistent with the perception by peers that neglected children are shy in their peer interactions (Coie, et al, 1982). In the Dodge (1983) study, the children who were neglected by their peers spent significantly more time in solitary play. They conversed with the group leader less frequently than the average child and made fewer extraneous verbalizations.

The rejected group interacted with the teacher more than any other group. The picture of rejected children spending less time on their assigned academic tasks (solitary-appropriate behavior), and more time attempting

to engage others, fits with teacher assessments of their relatively poor academic progress. This pattern also is consistent with the findings of Lahey, Green and Forehand (1980) that unpopular children often are observed by both teachers and trained observers to fit a pattern of hyperactivity and off-task behavior.

The behavior patterns of neglected children differed from those of rejected as well as of average children. They did not display inappropriate or aggressive classroom behaviors nor did they approach peers at inappropriate times or display high rates of aggression. In fact, they made fewer hostile verbalizations than the average child. The neglected children were similar to their rejected peers, however, in displaying significantly more inappropriate play than the average child. During recess, the neglected and rejected children failed to approach peers as frequently as did the average or popular children. Like those of rejected children, the social approaches of neglected children frequently met with rebuff by peers.

Contrary to expectations, Virtue and French (1984) found no significant differences in anxiety, extroversion, and IQ between neglected, rejected, and popular groups. Their study included children whose families ranged from lower to upper middle class. In a study where

socioeconomic class was controlled (Sells & Roff, 1967), however, popular peers were significantly brighter than nonpopular peers within all socioeconomic levels. Academic performance was correlated positively with sociometric status. Gronlund (1959) found that children who have difficulties with cognitive tasks are more likely to have few friends.

High Risk Research Studies

There have been several studies ("risk studies") of children of psychiatrically-impaired parents. In general, these studies have focused on children of schizophrenic or depressed parents. These children are of particular interest because researchers have assumed that they are more likely than average to have adjustment problems of their own.

The results of these studies have been mixed--in some respects, children of psychiatrically-impaired adults are indistinguishable from their peers, while in other respects they perform less well or may even excel. The following will be a review of certain risk studies, their program designs and their results.

University of Rochester Child and Family Study (1972-1982)

The University of Rochester Child and Family Study ("URCAFS") was conducted under the direction of Lyman Wynne

and John Strauss. The study included 145 children deemed to be at risk because each has one parent who had been hospitalized for a serious psychiatric disorder. URCAFS collected peer evaluations of these children twice, three years apart. In addition to these school competence measures, the research team collected data on intellectual and emotional functioning, adaptation, symptomatology and family relations. This wide range of observations, including family and child interactions, allowed for comparison of the child's functioning in various social settings which could then be correlated with parental psychopathology. An evaluation of URCAFS data may provide valuable information on the quality of family interaction and how it affects the peer status of the child.

URCAFS had three central objectives: to study concurrently and to follow prospectively children and families who differ in three classes of variables; 1) parental mental disorder, 2) family communication and relationship patterns, and 3) child functioning as assessed by psychiatric, psychological, and school competence measures.

The sample was selected, in part, on the following demographic criteria: all families were intact, white, English-speaking, had a male child, age four, seven or ten and belonged to social class I-IV (Hollingshead, 1978).

(Social index utilizes ecological area of residence, occupation and education to determine an individual's class status.) At least one parent (designated as the index parent) had had a psychiatric illness severe enough to require hospitalization. The index parent had been out of the hospital a minimum of three months prior to the beginning of the study. None of the children had any history of psychiatric problems.

The families were screened for the study based on hospital records. A preliminary diagnosis of the index parent (called key admission) was based on inpatient findings. To confirm the preliminary diagnosis, both patient and spouse were interviewed and given psychological tests by the URCAFS diagnostic team. A global rating score based on the level of parental functioning was assigned to each family. Families with an index parent having one of the following diagnoses were included in the study: 1) schizophrenia 2) schizophreniform, reactive, and paranoid disorders 3) schizoaffective disorder 4) bipolar affective disorders 5) unipolar depressive disorder, psychotic; 6)unipolar depressive disorder, severe; 7) unipolar depressive disorder, moderate; 8) adjustment disorder with depression 9) anxiety disorders and conversion 10) histrionic and other personality disorders.

Families who met these demographic and diagnostic qualifications were included in the study. Of the 145 families, 39 had the father as the index parent, and 106 had the mother as the index parent.

The mean number of hospital admissions for the index parent prior to the study was 2.7. The mean was 1.8 for the index parents having nonpsychotic disorders and 3.5 for those with severe and psychotic affective disorders. Length of hospitalizations for 138 index parents (those for whom accurate records were available) was 20.0 weeks. The longest hospitalization mean was 35.7 weeks for parents with affective disorders; the shortest mean was 5.5 weeks for parents with nonpsychotic disorders. The affective psychotic group had the highest percentage of parents with an episodic illness. The schizophrenic group had the highest proportion (67%) of chronic patients. More than 40% of the patients in the other two categories also had a chronic illness. Schizophrenics, with a mean of 18.1 weeks, were between the patients having nonpsychotic disorders and those having affective disorders. Illnesses were also classified as either episodic, if there was a two year symptom-free period at any time after the first hospitalization, or chronic, if no such symptom-free periods occurred.

URCAFS began observing these children prior to adolescence to determine whether testable vulnerability would be more or less frequent before a certain age. The particular ages were selected because of the unique developmental periods they represent. For instance, children at age four have acquired language and are preoperational in Piagetian terminology. The relationship between child and mother is quite complex at this time since mothers are coping with fears, negativism and sexual curiosity. At age seven the child has acquired operational thinking and conservation. A child's cognitive and early social functioning can be assessed at this time. Between the ages of four and seven the child enters school, separates from the mother and must learn basic academic and interpersonal (peer) skills. At age ten the child has entered the period of formal operations and preadolescence. While the ages between seven and ten are not remarkable for showing a dramatic change in mother/child relations, the progression from ten to thirteen (child at follow-up) is usually marked by issues of separation/individuation and pressure for peer approval.

Operating under the basic assumption that peer ratings would distinguish the social standing among children, Rubenstein, Fisher and Iker (1975) developed a peer rating scale for use in the URCAFS studies. Defining competence

as "behavior approved of or valued within the social system in which the behavior is displayed," (Fisher, et al., 1982, p. 13) the URCAFS team selected school classrooms as the setting to measure the relative competence of high risk children as compared to their peers. In order to define behavioral norms, the URCAFS team tape-recorded discussions with teachers and students in many types of schools (urban, rural, suburban and parochial) about competent/incompetent and successful/unsuccessful functioning in school. From these recordings, recurrent phrases were extracted to form the basis of a peer-rating sociometric scale designed to test for four variables: brightness-compliance, intrusiveness, dullness, and friendliness. A teacher rating scale was also developed to measure somewhat different variables: social compliance, social competence, cognitive competence, and motivation (Fisher, 1980).

These selected items were administered to every classroom which contained an URCAFS subject, involving thousands of children and scores of teachers. For example, all the children were asked to nominate one classmate who best fit a particular description, such as "a boy or girl who is well behaved in school," as an indicator of brightness-compliance. The results were separated according to sex, grade and the type of school. Only the data for males was used since boys tend to display

psychopathology earlier and more overtly (Roff, et al., 1972). The four peer and teacher rating factors and the test-retest reliabilities obtained after a four-week interval are set forth in Tables 1 and 2. (Rubenstein & Fisher, 1974; Rubenstein, Fisher & Iker, 1975).

Although the four-week test-retest reliabilities for both peer and teacher rating scales were quite good (Rubenstein & Fisher, 1974; Rubenstein, Fisher & Iker, 1975), the reliability of the teacher rating scales was lower than those of the peer rating scales.

Fisher assessed the classroom functioning of 101 seven and ten year old boys who were participants in the URCAFS study. The identity of the index child and the purpose of the study was known only by the school superintendent. The next step in this analysis was to compare the URCAFS sample to classmates who comprised the control group. With this in mind, the teachers' ratings for all male students were collected and scored on all the dimensions. A within class t-distribution with a mean of 50 and a standard deviation of ten was used. The sum total of peer nominations for each role for each child was used as a raw score. The median and the semi-interquartile range was used rather than the mean and standard deviation because of the distribution of these scores. The ten year old risk sample

TABLE 1: Peer and Teacher Rating Scales:

Test-Retest Reliabilities

Peer Rating Scale

Factor	Reliability
Brightness - compliance	.85
Intrusiveness	.88
Dullness	.88
Friendliness	.68

Teacher Rating Scale

Factor	Reliability
Social compliance	.80
Social competence (indicating the child's effective functioning with peers)	.79
Cognitive Competence	.71
Motivation (involvement in academic activities)	.75

differed from their classmates on all four scales. The seven year olds, in contrast, differed only on two dimensions, brightness/compliance and intrusiveness. The teacher rating scales did not discriminate the risk sample from the classroom sample.

Research on family interaction style found that the frequency and warmth of parent-child interaction affects cognitive and social development (Cole, Baldwin, Baldwin and Fisher, 1982). The study found that children who had an active/warm relationship with their fathers rated significantly higher on peer scales. Teacher rating scales on school adjustment also rated these children higher on measures of motivation and cognitive functioning.

Baldwin, Baldwin and Cole (1982) studied family interaction of URCAFS families in a free play situation. They focused on the rate of patient-child interaction, and the proportion of parental initiations to the child. Their results indicate that the differences in family interaction depended on the age of the child. A significant decrease in rate of interactions initiated by the mother toward her son occurred between four and seven and for fathers between the ages of seven and ten. The normal spouse's rate of interaction with the child was greater than the index patient parent in all cases except for the seven year old population. The rate of interaction for patient mothers

varied with the nature of their disorders. Nonpsychotic mothers interacted the most with their sons, affective psychotics less so, and schizophrenics the least. The lower the patients' global assessment score (GAS), the less they interacted and made initiations, and the less warm were these interactions (Baldwin, Baldwin & Cole 1982).

The children of affective psychotic and broad band schizophrenic parents performed the best on intelligence tests (Harder, Kokes, Fisher & Strauss 1980). The ill parent's global rating of impairment was found to have a significant, negative correlation with the child's cognitive performance (especially when the index parent was the mother). Parental impairment assessed at the time of the key hospitalization (first incident) was much less related to child competence. No significant results were found at either time for the well parent in relation to child cognitive competence. No significant correlations were found between child competence and the number of hospitalizations or the length of the most recent parental hospitalization. The researchers concluded that the important variable was the effectiveness of the resumption of the pre-illness relationship between the patient and the child.

When parental symptomatology was compared to child functioning, the affective psychotics (whose sons had the

highest scores on cognitive competence and academic problem-solving ability, as well as friendliness) were rated lower on depression and anxiety, and higher on lability of affect and hypomania. The children of psychotics had significantly more egocentric perceptions and poor social role-taking in responses to Piagetian tasks (Strauss, Harder & Chandler, 1979). The children of non-psychotic ill parents also showed impairment, although less so.

The URCAFS team also studied Communication Deviance (CD) among parents. CD refers to a particular class of verbal transactions such as odd language, arbitrary disruptions, and ambiguous references, which make it difficult for a listener to follow and share in a conversation. The URCAFS researchers tested the hypothesis that current parental CD is associated with current competence or incompetence of the child, as measured at school. Using the Peer and Teacher Ratings (Fisher, 1980) five indices of school functioning were used: 1) cognitive-academic abilities, 2) social-emotional behavior, 3) rule following/norm compliance, 4) mean peer rating, and 5) mean teacher rating.

Four measures of parental communication were investigated: 1) CD in individual Rorschachs (Singer, 1973), 2) CD in Family Rorschachs (Doane, 1977), 3) CD in

individual Thematic Apperception Tests (TAT) (Jones 1977), and 4) Healthy Communication in Family Rorschach (Al-Khayyal, 1980). Two of these studies indicate that the mother's total CD repeatedly predicted the competence of the child better than the father's (Singer, 1973; Doane, 1977).

Al-Khayyal (1980) developed a manual that measured communication that is clear, easy to follow, and facilitates the children's staying on the task. She denominated the "Healthy Communication" (HC). A couple's communication is defined as healthy if they are able, A) clearly and completely to teach the task to the children, B) to structure and support on-task behavior, C) to present percepts clearly, D) to reach a consensus and E) to close a task in a clear, complete manner.

Jones (1977) developed a manual for scoring CD encountered in administering the TAT. The procedure involves combining the number of times that the parents rated highly in the CD measure and poorly in HC, and then subtracting the number of times that the parents were low in CD measures and had a healthy profile in the HC measure.

Studies of ten year old URCAFS children indicate that children of parents with high CD levels are consistently rated as less competent in peer and teacher rating scores.

These results were not related to social class. (Jones, et al., 1982).

The Stony Brook High Risk Project (1971-1982)

Weintraub, Neal and Associates have engaged in a cross-sectional study with longitudinal follow-up. This study has the largest cohort of prospectively studied children at risk for schizophrenia, and a sizeable number of children at risk for affective disorders. The study used depressed patients as well as schizophrenics, to control for the effects of being raised by a parent with a psychiatric illness, regardless of diagnosis, as well as to study the two independent disorders.

The project consisted of 245 families, including 94 with a schizophrenic parent, 66 with a depressed parent and 60 normal controls. The follow-up sample consisted of 197 families, including 72 schizophrenics, 53 affectives, and 52 controls. Children ranged in age from six to fifteen and data was collected in two blocks. The selection procedure considered all new psychiatric admissions with school-aged children at any of the four local inpatient mental health facilities, excluding alcoholics, drug abusers and patients with central nervous system impairment. The researchers stressed isolating the multiple antecedent marker variables responsible for an

eventual schizophrenic break, rejecting the idea that there could possibly be a single cause.

Parent and family functioning were assessed by a variety of interview measures, including IQ and academic achievement. Social and academic competence, as reported by parents, teachers and peers were assessed, as was their environmental competence through such measures as stress management, child rearing practices and family structure. Two parent variables, diagnosis (schizophrenia, depression, normal) and sex of impaired parent (mother, father) were also investigated to assess their role in the development of psychopathology. The research used several laboratory measures of problem-solving, social interaction, conflict processes, and coping. These measures included visual search, auditory distraction, object sorting, and word communication; a video task to assess emotional responsiveness; and a Prisoner's Dilemma game. Parents were administered the Current and Past Psychopathology Scale (CAPPS) (Spitzer & Endicott, 1968), the Mini-Mult (Kincannon, 1968), which was used as as aid to diagnosis and to provide additional descriptive information, and the Marital Adjustment Form (Weintraub & Neal, 1978).

There were no significant differences in demographic characteristics among groups (education, occupation, race, parental age, number of children in family or marital

status). Schizophrenic patients had more frequent and longer hospitalization admissions. In the preliminary analysis of the data, there were no significant differences between schizophrenic parents of vulnerable and invulnerable children in the sample. Children with a schizophrenic parent, as compared with normal controls, showed lowered competence along several dimensions using the Devereux Elementary School Behavior Rating Scale. Teachers rated 43 children with a depressed mother, 58 children with a schizophrenic mother, 58 matched and 56 random controls. Children with a schizophrenic parent were rated as more deviant than their classmate controls on the aggressive-disruptive cluster, and on measures of cognitive and social competence. Children with a depressed parent, in comparison with normal controls, were rated low in social competence and achievement anxiety.

Interpersonal competence, as measured by peer ratings on the Pupil Evaluation Inventory (developed by Pekarik et al., 1976), was found to be impaired in children of both depressive and schizophrenic parents (Weintraub, Prinz & Neale, 1978). The high-risk children were rated higher than controls on dimensions of aggression and on withdrawal/unhappiness.

While lowered competence in the children of schizophrenic parents is consistent with previous findings

(Garmezy, 1974), these researchers did not find separate behavior patterns for the boys and girls which had previously characterized male preschizophrenics as abrasive and females as withdrawn (Watt & Lubeny, 1976).

Laboratory findings consisted of an object sorting task that was developed by Rigney (1962) and was used as an index of thought disorder. The task involved putting pictures of common objects into two separate groupings "alike in some way." Subjects included 156 children of schizophrenics, 102 children of depressives, and 139 children of well mothers. Children of schizophrenic and of depressed mothers made significantly fewer superordinate (analytic) responses than the control group children. The responses of children of schizophrenics were significantly more complex than those of children of well or depressed mothers. No significant findings emerged in the categories of thematic or vague responses, except that younger children of all groups made more thematic responses.

The Minnesota Risk Project (1971-1982)

Rolf (1972, 1974, 1976) and Garmezy (1974) organized a large risk project around social and attentional phenomena. The research design, aimed at studying the presence or absence of competence, was a cross sectional evaluation of four groups of children, two considered at

risk because of maternal psychiatric status, and two already having been diagnosed as having a disturbance. The four groups consisted of 31 children of schizophrenic mothers; 26 children of internalizing mothers (mainly diagnosed neurotic depressives); 36 externalizing children; and 27 internalizing children. The researchers included the disturbed children to provide a disordered behavioral baseline for comparison. The psychiatrically ill mothers had been hospitalized within the year prior to the study. The disturbed children had been attending child guidance clinics.

Each child had two controls selected from their class. One of these controls was matched for sex, age, grade, school achievement, IQ, social class, and intactness of home. The other control was matched for sex and grade, but was otherwise random. The children of ill parents were frequently from non-intact or lower-class homes.

Children in grades three to six were studied first, with seventh and eighth graders involved later. The study used a teacher rating scale adapted from Conger and Miller (1966) which clustered children according to positive academic behavior, emotional stability and maturity, social agreeableness, and positive social extroversion. A peer rating scale based on the Bower Class Play (1960) and an evaluation of each child's cumulative school record was also used.

Externalizers of both sexes received the lowest competence ratings from both peers and teachers. Next to the lowest were children of schizophrenics, followed by internalizers, daughters of internalizers, and then controls. Sons of internalizing mothers rated about as high as their controls. The peer and teacher ratings disagreed sharply on children of schizophrenics, apparently because there are different precursor signs for boys and girls differentially visible to peers and adults (Rolf & Garmezy, 1974). Children of schizophrenic mothers were found to resemble more closely the externalizing children. Children of depressed parents manifested some behavior disturbances and some difficulties in school, but of all the target groups, most closely resembled the control children. All target groups had poorer academic grades than their controls. Children of depressives had significantly lower current social studies grades; and daughters of depressives had significantly lower reading and language grades. The children of schizophrenic and depressive mothers had done particularly poorly academically the preceding year; this corresponded in some cases to the mother's hospitalization, and also appeared to be associated with family mobility.

The study was limited by gaps in the children's cumulative records and by the small size in each group.

Rolf and Garmezy emphasize the importance of considering effects of family mobility, socioeconomic status (SES) and intactness of home, since the matched controls from broken families, or ones having high mobility or low SES also tended to be more tardy and absent, with poorer grades, and lower peer and teacher ratings (though not significantly so) than controls not having these characteristics.

Also as part of the Minnesota study, Devine and Tomlinson (1975) tested the relationship between competence and attention in 19 elementary school classrooms. Teachers were asked to characterize the students in their class on a four point scale: the scale ranged from superior adaptation accompanied by a total absence of any signs of problems to the presence of problems pervasive and serious enough to warrant professional intervention. After teacher ratings were obtained, trained raters observed the class several hours for an entire week. Ratings were done using an established observation system (Cobb, 1969). The observers were blind to the teacher's adaptation ratings. The study found a significant correlation between a child's attention in class and teacher-rated competence.

Another Minnesota study, which was neurophysiologic in nature, studied reaction time to light and sound stimuli under various conditions as a function of varying preparatory intervals. The study used a cohort similar to

the one used by Rolf and Garmezy. The sample size, including matched and random controls, was 240. The children ranged from nine to thirteen years of age (Marcus, 1972).

One test was used with and without pretrial information which, when given, would reduce uncertainty. In an attempt to influence motivation, another test included rewards for successful completion. Marcus found the children of schizophrenic mothers and the externalizing children to have marked attentional deficits. He found that the motivation condition improved performance, especially that of externalizers. The children of depressed mothers showed more flexible responsiveness. They initially revealed attentional deficits on the task, but when supplied with pretrial information or rewards, their performance quickly equaled that of the controls and the internalizing children. These last two groups sustained attention throughout all conditions.

In 1978, Garmezy and Rolf replicated these results with 300 subjects, grouped by ages ten to twelve and thirteen to fourteen. They also found attention patterns to correlate with competence patterns; all target children had poorer school performance than controls, with internalizers performing the best, followed by the children of internalizers.

Another follow-up study of the cohorts studied by Rolf and Garmezy and by Marcus evaluated the subsequent adaptations of the various risk groups and their controls (Herbert, 1977). The study followed 61% of the Rolf and Garmezy cohort seven years after their study, and 76% of Marcus's cohort four years after his study. The questions posed were: What was the children's progress like in school? Had the differences between the target and control children increased as the subjects matured? What were the relative competence levels of the groups several years later? Herbert reviewed cumulative school records for grades, attendance, lateness reports, citizenship grades, and the children's most recent achievement test scores. School counselors and/or the social worker assigned to a given student were interviewed to obtain their perception of the child's adjustment, any problems (rated mild, moderate, severe) and any indications that the child's attainments were outstanding in any way. To insure the child's privacy, the interviewer stressed that this follow-up research was aimed at obtaining the school's judgment about the presence of adjustment problems and not personal information. After compiling this data, the research team rated the child's adjustment (referred to as positive or negative outcomes) on a five-point scale that ranged from "outstanding school leader" through "average," "mild," "moderate," or "severe problems."

Results were tentative, given the high percentage of attrition in the schizophrenic mother group. In general, however, the target groups tended to show poorer adaptation than their controls, with the externalizing children showing the greatest deficiencies. (There is much literature which confirms the maladaptation of such antisocial children (Robins, 1966; 1972; Shea, 1972; Garmezy & Streitman, 1974). Herbert found the children of depressed parents to have the highest average grades compared to other target children, but to be significantly more absent than controls and to have a significantly less positive outcome (48% compared to 83% for controls). Their reading achievement scores were lower than the controls, but this result did not reach significance.

St Louis Risk Research Project (1966-1982)

A pioneering program which took a more exploratory approach than most other studies was under the direction of E.J. Anthony for a period of thirteen years. During the first phase (1967-1972) of this project, the aim was to study the children of "psychotics," with no specific interest in differentiating between children of schizophrenics and children of manic-depressives. Focusing on the psychological and social effects on children growing up in an environment where a parent requires

hospitalization, the researchers used a control group of children whose parents had been admitted to a hospital for a physical illness. The investigators compared children in terms of their clinical disturbance, intrapsychic symptoms, peer-group relationships, intelligence, organic features, and any precursor symptoms. The parent and family environment was also studied. The "psychotic" sample consisted of 30 hospitalized schizophrenics and 18 hospitalized depressives who met the following criteria: 1) married; 2) marital family intact; 3) diagnosis of psychosis, excluding physical disability or organic brain syndrome; and 4) at least one child between six and twelve years of age. The control group consisted of 19 parents with a disabling, chronic physical health problem (usually tuberculosis) that had required hospitalization. The selection criteria was identical for the control parents except that neither they nor their spouses had any specific psychiatric disorder. A normal control group (i.e., one with no experience of prolonged hospitalization) was also used. Sex, race and SES were not considered in selecting these groups. (Anthony, 1968a, 1971).

There were a total of 105 families, with 13 male and 17 female schizophrenics, 7 male and 11 female manic-depressives, 9 male and 10 female physically ill parents, and 38 controls. Of the 339 offspring, 94 were

children of a schizophrenic parent, 53 were children of a manic-depressive parent, 73 were children of a physically ill parent, and 119 were children of parents not having a history of hospitalization. The children ranged from six to twenty years old when tested.

The study evaluated the children using two Piagetian measures of egocentricity, The Three Mountain Test (Piaget & Inhelder, 1956), The Broken Bridge Test (Piaget, 1932), home visits and psychophysiological assessment. The study found that the children of psychotic parents, after a five year interval, had greater clinical disturbance than children of normal parents. These results were not affected by SES, race, or age of children. Psychological disturbance was more pronounced in those children who were more suggestible (as rated by the child's response to suggestions about body sway and eye and fist closure) and who identified with their ill parents. Children of psychotic parents were not found to have lower intelligence than control children. In the Piagetian cognitive decentering task, children of psychotic parents, especially schizophrenics, had more difficulty than controls or children of manic-depressive parents.

The second assessment phase (1975-1979) was under the direction of Cynthia Jones and emphasized the development of a behavioral description of the child by evaluating,

with follow-up interviews, the external functioning of the children. Contact and at least partial assessment occurred for at least 73% of the original sample. The retention rates for the families were as follows: 66% for schizophrenic families, 68% for physically ill families, 76% for manic-depressive families, and 81% for control families. Some of this difference may have been due to SES. Mothers in general were more accessible for re-assessment than were fathers. Each offspring was scheduled for one testing in three-year intervals from seven to twenty-five years of age.

There has been little study to date of the data collected at Phase II. One such investigation studied family climate differences between disturbed and normal families (Hopper, 1976). The study involved twelve families having 46 family members, in which each family had one member who had been diagnosed as either schizophrenic or manic-depressive, and a control group matched for race and social class, consisting of 16 normal families and 66 individuals. Using the Moos Family Environment Scale (FES) (Moos, 1974) and the Marlowe-Crowne Social Desirability Scale (Crowne & Marlowe, 1960), Hopper explored the differences in scores between groups. Using a family Incongruence Score, Hopper also examined the variance within families. As a group, he found that the

experimental families tended to have greater internal variance than control families on most comparisons, especially on the Moos "Cohesion" scale. Using the FES subscales, Hopper discovered that the experimental and control families differed in social desirability.

Communication deviance scores obtained from the Rorschach and TAT were evaluated for a group of thirty children, ranging in age between sixteen to twenty-five years (Csapo, 1977). No relationship was found to exist between the Rorschach and TAT measures. The researchers concluded that these two measures of CD might be evaluating different aspects of a communication problem.

Another study focusing on the academic and social competence of children was done by Gail Overby (1979) using psychological test data and teacher ratings collected during the 1967-1971 assessment period in elementary school and in 1975-1978 in high school. She investigated: 1) the ability of such measures to differentiate between groups of children at risk, 2) the relationship between psychological test battery measures of competence and teacher ratings of competence, 3) the stability of these measures from early elementary school to high school, and 4) the combination of measures given during early elementary school that can best predict competent performance during high school. Total sample size was 30 children having one schizophrenic

parent, 18 children with one physically ill parent, 17 children with one manic-depressive parent, and 40 control children. The subjects were evaluated during their early elementary school years and had one follow-up when they were sixteen. In addition to the traditional psychological battery, during both phases teacher ratings of academic and social skills were obtained to provide an external indication of a subject's level of academic, social and total competence.

The study found no variables that differentiated groups at risk during the early elementary school years. By age sixteen, the children of manic-depressive parents were significantly lower than control children in the areas of teacher-rated social competence and total competence. The children of schizophrenic parents were not lower than controls at any phase. There was a positive relationship between IQ and teacher ratings of competence which remained stable over time. In contrast, the Rorschach and TAT measures of competence were not stable. While holding demographic variables such as age, socioeconomic status and race constant, the best predictor of both social and total competence at age sixteen was the teacher ratings. Total competence in elementary school was the best predictor of academic competence in high school.

Summary

The four risk studies described above used four very different methodologies. URCAFS studied only male children, while the others studied children of both sexes. Two studies, URCAFS and the Minnesota study, used peer ratings, while the Stony Brook and St. Louis studies relied solely upon teacher ratings and "objective" data such as academic performance, IQ, etc. Some studies also used or developed special tests, either as measures or as predictors of social competence. URCAFS, for example, focused on communication deviance as a predictor; Minnesota used reaction time as a measure. Minnesota and St. Louis used elaborate sets of control groups, URCAFS and Stony Brook did not.

With this disparity of focus and methodology, it is difficult to form sound generalizations. Nonetheless, some do emerge. The studies tend to show that children at risk are less competent, both socially and academically, than those not at risk. Children of depressed parents seem to be affected less adversely than children of schizophrenics (although Overby (1979) reports a potentially contrary finding). An ill mother, or one who rates high in communication deviance, is more likely to have a negative impact on a child than an ill or communication deviant father. Early childhood difficulties, as measured by both

peer and teacher ratings, tend to survive to late childhood and adolescence. Further follow-up studies of the same populations might produce interesting findings concerning the early adult experiences of the at-risk child.

Chapter Three: Methods and Procedures to be Utilized in the Study

METHODS AND PROCEDURES

This third chapter will serve to present the methods and procedures of the study. The chapter will be subdivided into three sections: the hypotheses tested, a profile of the URCAFS subjects used, and a description of the research procedures employed.

The hypotheses tested through empirical investigation were:

H1. There will be a positive correlation between the amount of verbal communication in the child's family and the child's impact in his classroom.

H2. There will be a positive correlation between the extent to which members of the child's family respond to statements made by other family members and a child's preference rating.

H3. There will be a positive correlation between the number of behavior commands in the family and the child's impact, and a negative correlation between the number of behavior commands and the child's preference rating.

H4. There will be a positive correlation between the amount of positive versus negative family communication, and the preference score of the child.

In addition to the above hypotheses, the data will be scrutinized for other relationships.

Description of the Subjects

The children and families who were involved in this longitudinal study were extensively evaluated. Three basic domains (parent, family and child) comprise the rich data base of the URCAFS population. All patients (index parent) were given a primary diagnosis according to the DSM III criteria (See Table 2).

The 100-point Global Assessment Scale assessing the severity of functional impairment was administered to the patient at the time of the initial URCAFS evaluation (Endicott, Spitzer, Fleiss & Cohen, 1976). Scores of less than 60 were considered a reflection of poor functioning. Ratings of social and work functioning levels were assigned to both index parent and spouse. Rating were based on both quantity and quality of social relations and work. Ratings ranged from 0 (no useful work or no social relationships) to 4 (continuous full-time competent

TABLE 2: URCAFS DSM III (1978 Version)

Diagnoses of Index Parents

	Diagnosis	Number of Patients	Classification
1.	Schizophrenia	15	Psychotic
2.	Schizophreniform, reactive and paranoid disorders	7	Psychotic
3.	Schizoaffective disorder	20	Psychotic
4.	Bipolar affective disorders	20	Psychotic
5.	Unipolar depressive disorder, psychotic	6	Psychotic
6.	Unipolar depressive disorder, severe	14	Nonpsychotic
7.	Unipolar depressive disorder, moderate	34	Nonpsychotic
8.	Adjustment disorder with depression	7	Nonpsychotic
9.	Anxiety disorders and conversion reaction	10	Nonpsychotic
10.	Histrionic and other personality disorders	12	Nonpsychotic
TOTAL		145	

employment or a number of close or gratifying relationships). The lowest social functioning (mean 2.5) and the lowest work functioning (mean 2.9) group was the schizophrenic index parents. This group, however, even though they had the lowest mean of the diagnostic groups, still met with friends more than once a month and were employed on the average about half the time and with at least moderate competence (See Table 3).

Psychological testing, including cognitive and projective measures, and personality assessment (MMPI) were administered to both index parent and spouse. Individual measures of communication deviance based on responses to the Rorschach and the Thematic Apperception Test were assessed by administering these tests to the index parent and spouse.

Family measures included the domains of communication deviance and healthy communication measured through family rorschach procedures. Family warmth and quantity of relatedness was evaluated via a free play situation where parents and the index child were observed through a one-way mirror and their behavior recorded.

The child evaluation was extensive. The views of teachers, peers, family and professionals were gathered and contributions from all of these individual components of

TABLE 3: URCAFS Mean Social and Work Functioning Scores of Parents at Time of Initial Evaluation

Diagnosis of Index Parent	Index Parent		Spouse	
	Social Functioning	Work Functioning	Social Functioning	Work Functioning
Schizophrenia	2.5	2.9	3.4	3.8
Severe and Psychotic Affective Disorders	3.1	3.4	3.1	3.7
Nonpsychotic	3.2	3.6	3.1	3.7

the child's world were integrated to form a clinical picture of the child's competence. In addition to teacher and peer rating scales, The Rochester Adaptive Behavior Interview (RABI) was administered. This scale consisted of the parents' perceptions of the child's socioemotional functioning both inside and outside the home. (Jones, 1977). The questions, which are asked in a structured interview setting, were behaviorally oriented. At the first interview with parents the history of perinatal events, developmental milestones and medical difficulties was collected.

Psychological, neurological, and school achievement testing as well as the personality functioning of the child were integral aspects of the child's diagnostic profile. After this initial pool of data was collected, a semistructured playroom interview was conducted for the four year old children. For the older children a verbal interview, focusing on family relationships, school functioning, peer relationships, fantasy life and the child's self-concept was done by a child clinician. With this array of information the URCAFS research team made a global assessment of the child's adaptive functioning using a scale adopted from Glidewell, Domke and Kantor (1963). This Child Overall Psychiatric Evaluation (COPE) consisted of a nine-point scale ranging from above average adjustment

to seriously disturbed. Each child was rated by two independent raters who review all the data. The average Pearsonian correlation between the two independent raters was .90.

The subjects of the present study were 90 ten year old male children who were part of the University of Rochester Child and Family Study (URCAFS). These children were selected from a total pool of 101 children who participated in the URCAFS school studies (Fisher, 1980). The ten year old group consisted of those children who were ten when they entered the study and seven year olds who at first follow-up were ten.

The Rochester Peer Rating Scale was used. As noted, Fisher 1980) organized the individual descriptors of the peer rating scale into four dimensions. This author has divided the individual descriptors which comprise the questionnaire into positive and negative characteristics. As can be seen in Appendix A, there are ten positive items and twelve negative ones. In contrast to the personal choice nature of the classic sociometric test (name three children you like most), the URCAFS questionnaire items strive to capture an image of the child. All the nominations given to the boys in the class by girls and boys were used since all the children contribute to the image. By tallying up positive versus

negative nominations and converting these into impact and preference scores (Coie & Dodge, 1983), a measure of how positively or negatively a child is perceived is obtained. All calculations for impact and preference were corrected for classroom size (responses divided by the number of children in class). Individual impact and preference scores for the ninety children comprising the URCAFS sample were tallied to arrive at an URCAFS population mean and standard deviation (See Appendix B). A graph was prepared using impact as the X axis and preference as the Y axis. Each child's scores (impact, preference) were plotted on the graph as were the means and boundaries representing one-half standard deviation from the means (See Appendix C). The use of one-half standard deviations as a dividing line between peer groups is consistent with the methodology of French and Waas (1985). As can be seen, there is variability in the sample. Although most subjects cluster around the means, there are clearly deviant groups. Children who received an abundance of positive nominations were designated as popular, those who received an abundance of negative nominations were designated as rejected, those who received an abundance of both positive and negative nominations were designated as controversial and those who received scant nominations were designated as neglected. Children not meeting the criteria for inclusion into one of these four groups were identified as average.

The definitions for these sociometric groups were set as follows:

Popular group:	Z-Impact greater than 0; Z-preference more than 0.5 standard deviations above the mean; fewer than 10 negative nominations received.
Rejected group:	Z-Impact greater than 0; Z-preference more than 0.5 standard deviations below the mean; fewer than 10 positive nominations received.
Neglected group:	Z-Impact more than 0.5 standard deviations below the mean; fewer than 10 positive and negative nominations received.
Controversial group:	Z-Impact more than 2.0 standard deviations above the mean, but not within popular or rejected groups.
Average group:	Any child not in any of the foregoing groups.

Of the 90 children, 12 were classified as popular, 16 as rejected, 26 as neglected, 2 as controversial and 34 as average.

After establishing groups within the URCAFS population, these children were compared with their classroom peers to insure that they held the same status in their individual classrooms as they did in the URCAFS grouping. Using the same techniques, i.e., computing impact and preference means and standard deviations for each child's classroom and applying the definitions of popular, rejected and neglected described above, the URCAFS groupings were largely confirmed. Of the 90 children, 13 were classified as popular, 17 as rejected, 25 as neglected, 2 as controversial and 33 as average. A table containing each child's classroom impact and preference scores is set forth in Appendix D. These classroom groupings were used in testing the hypotheses of this study rather than the groupings arrived at by using the URCAFS data.

Eighty-one of the eighty-eight children identified as popular, neglected, rejected and average by the use of the URCAFS data were found to be in the same status group when the data for each child's entire classroom was analyzed. There were seven children whose classroom status was not the same as had been shown by use of the URCAFS data. Four

of these children were average in the URCAFS grouping, but in their classrooms were popular (1), rejected (1) or neglected (2); and three of these children were neglected in the URCAFS grouping, but in their classrooms were average.

The classification of URCAFS children by use solely of the URCAFS data was not intended to substitute for the determination of actual classroom peer status, but rather was derived to obtain a preliminary view of the likely peer status of each URCAFS child. The very reliability of this procedure (83 of 90 accurate predictions) indicated that the URCAFS children as a whole did not have a distinctly different peer status profile than the non-URCAFS children. If they had, the children who showed up as

age in the URCAFS data would have had a pronounced tendency to be in another status group -- rejected, for example, -- in their classrooms. Instead, the "average" URCAFS group was largely average in classroom status, and the few who were not were in a variety of other peer status groups, rather than clustered in one status group.

The family measures used to test the hypotheses will be described.

Description of the Research Instrumentation

The Consensus Rorschach

The Consensus Rorschach was used by the URCAFS researchers to assess communication among family members. The Consensus Rorschach was administered to all families at the time of their initial participation in the URCAFS study.

Use of the Consensus Rorschach was developed by Singer and Wynne (1966) as a means of measuring Communication Deviance (CD). The term CD refers to the deviation in the communication patterns of parents of subject children, often borderline and schizophrenic individuals. Communication Deviance emphasizes the style a family uses when it attempts to focus its attention on a task. Singer and Wynne hypothesized that families having a high degree of CD would tend to have less competent children. To test their hypothesis, two projective tests, the Rorschach and The Thematic Apperception Test, were used to elicit communication patterns among high risk families. The variable of interest was the style of the person's speech, not the content. These authors have stressed that if two or more people cannot maintain a common, clear focus in a conversation, the repercussions for the rest of the communicative process are profound (Jones, 1977). Singer and Wynne's concept of Communication Deviance has been

tested in diverse situations and has successfully characterized parents according to the severity of their offspring's illness. These results are most conclusive in parents of borderline and schizophrenic individuals (Wynne, et al., 1977).

Doane's (1977) work with URCAFS families, using the Consensus Rorschach and scoring for Communication Deviance, identified mothers who exhibited high levels of Communication Deviance in two distinct settings. The first setting was a procedure consisting of the marital pair and using Rorschach card II, and the second was the Family Rorschach procedure, using card VIII. Doane found that the children of the mothers rated high in CD were less competent as judged by teacher, peer and parental reports.

The Family Consensus Rorschach was used for the present study to isolate family interaction variables that may predict poor peer relations in the offspring. The Family Rorschach involved asking the parents, who had already completed the individual task, to teach their children the procedure. As a family, they had to reach agreement on as many percepts for card VIII as they could. All family interactions were observed through a one-way mirror and recorded (audiovisual). The parents were given the following instructions:

> What we would like you to do now is to look at an inkblot together; discuss it, and see how many agreements you can reach about what it looks like, what it reminds you of, what it resembles. There are no right or wrong answers to this, of course. You may be reminded of something by the whole inkblot, by any part of it, or perhaps just by something about it. After you reach as many agreements as you can, ring the bell, and I'll return to give you further instructions. If you haven't finished after five minutes, I'll come back in. The card is placed in front of the family members so that they are looking at it in its usual "upright" position. If the family members have reached some agreements but are still discussing the inkblot after ten minutes, the examiner returns to the room and says "That's fine. Now I want you to do something else."
>
> Now I would like each of you to outline and label all the things that all of you agreed on. Use this copy of the inkblot to show clearly those things that all of you agreed on by outlining the parts of the inkblot you were referring to, and labeling them clearly. It is important that you do this with no further talking to each other, and without showing each other what you are marking on the sheet.

When it appears that the family members have not come to any agreement after ten minutes of discussion, the examiner returns to the interview room and says:

> For each of the things that you've discussed that you think you've agreed on, will each of you separately outline them in this copy of the inkblot and label them clearly. Please do this without any further discussion with each other.

The examiner then picked up the Rorschach card from the table and remained in the room while the family members were locating their agreements. If they start talking to each other about their responses, the examiner reminded them that they were to do their locating without any

further discussion between them. When there were young children in the family, the examiner told them not to worry about spelling, just to circle the family agreements on the inkblot and to try to write the word as it sounds, if possible.

The family procedure was second using interaction codes (Mishler & Waxler, 1968). For example, RELAPOS and RELANEGS are the codes used to measure the amount of friendliness and attacking that occurs between family members. URCAFS researchers reviewed the videotapes of the Consensus Rorschach sessions and identified each instance of friendly and attacking communication. Those incidents were classified into five categories ranging from strong positive relationship to strong negative relationship. To assist them they were given instructions containing examples of each type of communication. URCAFS researchers were instructed to consider the tone of voice as well as the verbal content, and to keep careful account of the person to whom the speech was addressed. The instruction sheet for the RELAPOS and RELANEGS interaction code is included as Appendix E.

Rochester Peer Rating Scale

The raw data for the child competence measures has already been collected by the URCAFS team prior to the

present study. The procedure for the collection of these data was as follows:

Once a family was identified and informed consent was obtained, the school was contacted at the district level to arrange for the administration of the peer and teacher scales. A formal legal contract between the school district and the University was written outlining the events to take place. The superintendent was the only person within the school system who knew the intent of the study or the identity of the index child. Assured of blind ratings as well as confidentiality, one hundred percent cooperation from all schools was obtained. The sociometric procedure was administered individually to each child in the classroom by a trained member of the research team. Each child was presented with the questionnaire and asked to write in the name of one classmate who best described each of the 22 descriptors.

Chapter Four: Results of the Statistical Analysis of Data

RESULTS OF DATA ANALYSIS

Overview and Introduction

Data analysis proceeded in the following stages: First, descriptive analyses for each of the variables were obtained (See Appendix F). Then impact and preference scores were used to investigate four hypotheses. These hypotheses proposed correlations between a child's standing in his classroom and the quality of family interactions. Pearson product-moment correlations for a total of 45 pairs of variables consisting of family interaction measures and demographic features of the sample population were derived. Cohorts established by reference to impact and preference scores were analyzed to determine the relative frequency of key family interaction variables, such as acknowledging remarks, within the cohorts. Multiple regression techniques were applied in order to determine if Z-impact and Z-preference varied as a function of specific family and/or demographic variables. Additional multiple regression analyses were done using pro-pref scores which were arrived at by transforming the peer nomination data according to the following formula: 100 x likes divided by likes + dislikes. The pro-pref score indicates the proportion of positive peer nominations a child received.

Finally, analysis of variance for each demographic variable was carried out using the four sociometric groups, excluding the two children nominated as controversial.

The results of the four hypotheses tested will be presented. In each case, the Z-impact or Z-preference score of all 90 subjects were used to test the strength of the relationship between each family variable in question, utilizing Pearson product-moment correlations.

Results

Hypothesis One:

There will be a correlation between the amount of verbal communication in the child's family and the child's impact in his classroom.

Using the family variable coded as Bell (the number of family speeches) and Rate (the number of speeches per person), the results ($r = -0.08$, Bell; $r = -0.06$, Rate) indicate that there is no significant correlation between these measures of verbal communication in the child's family and his impact score in the classroom.

Hypothesis Two:

There will be a correlation between the extent to which members of the child's family respond to statements made by other family members and a child's preference rating.

Using the family variable coded as Acknowledgment 1 and 2 (the percent of full or partially acknowledged speeches) versus Acknowledgment 3 and 4 (the percent of minimal or non-acknowledged speeches), the results indicate that there is no significant correlation between different levels of verbal acknowledgment between a child and his family and his preference score in his classroom (r= .052). But, in using a variation on the preference ratings derived for this study ("pro-pref"), a significant correlation was found between verbal acknowledgment and peer rating. See "Pro-pref Analyses" below.

Hypothesis Three:

There will be a positive correlation between the number of behavior commands in the family and the child's impact, and there will be a negative correlation between the number of such commands and the child's preference rating.

Using the family variable coded as Behcmnds (the percent of speeches making behavior commands), the results indicate that there is no significant correlation between this measure of behavior commands in the child's family and his impact or preference in his classroom (impact r= -0.004; preference r = -0.160).

Hypothesis Four:

There will be a correlation between the type of family communication, positive versus negative, and the preference scores of the child.

Using the family variables coded as Relapos (the percent of speeches giving positive relationship messages) and Relanegs (the percent of speeches giving negative relationship messages), the results indicate that there is no significant correlation between this measure of positive and negative messages in the child's family and his preference score in the classroom. Positive messages (r= 0.02) and negative messages (r= -0.17).

Cohort Analysis

The Pearson coefficient correlations reviewed above indicate that the data collected is insufficient to establish a straight-line correlation between the measured variables and impact or preference. To see whether any other type of correlation might exist, a review of the data by cohorts along the impact and preference dimensions was performed. In each case, the children were separated into cohorts with boundaries of -1.0 standard deviations, -0.5 standard deviations, the mean, +0.5 standard deviations, and +1.0 standard deviations (either impact or preference), and the frequency with which different levels of the key variables were found in those cohorts was tabulated. The data from which these tabulations were made are found in Appendix G (variables correlated with impact) and Appendix H (variables correlated with preference).

For example, an analysis of the results of the first hypothesis, which proposed a positive correlation between the quantity of verbal communication (Bell) and classroom impact, can be seen on Table 4. The Bell mean varies widely and unpredictably from one cohort to the next, suggesting that there is no meaningful correlation, linear or non-linear, between the quantity of family verbal communication and the child's impact.

On the other hand, the level of positive acknowledgment in family interaction (acknowledgment 1 and 2), has a different look, as is shown by Table 5. The level of acknowledging statements is highest for the most preferred children and declines fairly steadily until the least preferred children are tabulated, when the mean takes a substantial jump. This data is difficult to interpret. It may suggest, however, that high levels of acknowledgment can be found in different types of families: some producing children with high peer preference ratings, and others producing children with especially low peer preference ratings.

A somewhat similar analysis may apply to the fourth hypothesis, involving the effect of the relative quantity of positive and negative statements on a child's peer rating. To review the data developed to test this hypothesis, an index of positive reinforcement was derived

Table 4:

Impact as a Function of Bell

Bell Score	Impact Cohort					
	less than -1.00sd	less than -0.50sd	less than mean	less than 0.5sd	less than 1.00 sd	greater than 1.00 sd
0 - 49	0	0	1	0	0	0
50 - 99	2	1	1	4	1	4
100 -149	1	3	4	3	0	3
150 -199	3	5	5	2	3	3
200 -249	0	4	4	2	0	1
250 -299	1	5	3	0	1	1
300 -399	0	1	1	2	1	2
400 -499	0	1	1	1	2	0
500 +	0	1	1	1	0	0
Totals	7	21	21	15	8	14
Mean	147	253	213	207	280	170

Table 5:

Preference as a Function of

Acknowledgement 1 and 2

Acknowledgement 1+2	Preference Cohort: less than -1.00sd	less than -0.50sd	less than mean	less than 0.5sd	less than 1.00 sd	greater than 1.00 sd
30% or less	0	0	1	2	2	0
30 - 39%	1	3	3	7	2	1
40 - 49%	3	2	2	2	1	3
50 - 59%	4	3	3	7	2	4
60 - 69%	1	1	1	5	6	4
70% or more	2	0	2	2	2	2
Totals	11	9	12	25	15	14
Mean	55.4	47.5	51.1	50.2	56.0	58.2

by subtracting the percentage of negative remarks (Relanegs) from the percentage of positive ones (Relapos). This index was then cross-tabulated against the preference cohorts. As Table 6 illustrates, the less preferred children received a somewhat greater proportion of positive reinforcement than the average children, but the more preferred children received more than either group. This may suggest that high levels of positive reinforcement may occur in two types of families, one producing less preferred children, the other producing more preferred ones.

The third hypothesis was that children who received a high percentage of behavior commands from their parents would be unpopular; that is, they would be high in impact and low in preference. Separate cohort anlyses were prepared tabulating the Behavior Commands variable against impact and preference. Table 7, tabulating impact and behavior commands, does not suggest any pattern. Table 8, tabulating preference and Behavior Commands, suggests that children receiving the fewest behavior commands tend to fall at either end of the spectrum, either highly liked or disliked by their classmates.

Prof-Pref Analyses

The peer rating scale data on the 90 subjects was re-computed to arrive at the proportion of the peer

Table 6:

Preference as a Function of

Relapos Minus Relanegs

Relapos minus Relanegs		Preference Cohort					
		less	less	less	less	less	greater
	But Not	than	than	than	than	than	than
Less Than	Less Than	-1.00sd	-0.50sd	mean	0.5sd	1.00 sd	1.00 sd
-2%	n/a	1	0	0	2	0	0
-1%	-2%	1	1	0	3	1	2
0%	-1%	0	0	0	0	0	0
+1%	0%	1	2	4	5	4	2
+2%	+1%	4	0	3	6	2	2
+3%	+2%	1	3	3	6	1	1
+4%	+3%	2	3	2	1	4	3
n/a	+4%	1	0	0	2	3	4
Totals		11	9	12	25	15	14
Mean		1.8	1.8	1.7	1.1	2.6	2.5

Table 7:

Impact as a Function of

Behavior Commands

Behavior Commands	Impact Cohort: less than -1.00sd	less than -0.50sd	less than mean	less than 0.5sd	less than 1.00 sd	greater than 1.00 sd
0 - 1%	5	15	11	11	6	8
1.1 - 2%	1	3	5	3	2	3
2.1 - 3%	0	0	2	0	0	1
3.1 - 4%	0	0	0	0	0	1
4.1 - 5%	0	2	1	0	0	0
5.1 - 6%	0	0	0	1	0	1
more than 6%	1	1	2	0	0	0
Totals	7	21	21	15	8	14
Mean	1.4	1.0	1.6	0.7	0.4	1.1

Table 8:
Preference as a Function of
Behavior Commands

Behavior Commands	Preference Cohort: less than -1.00sd	less than -0.50sd	less than mean	less than 0.5sd	less than 1.00 sd	greater than 1.00 sd
0 - 1%	8	4	7	15	13	11
1.1 - 2%	2	2	3	4	1	3
2.1 - 3%	0	1	0	1	1	0
3.1 - 4%	0	1	0	1	0	0
4.1 - 5%	0	1	0	1	0	0
5.1 - 6%	1	0	1	1	0	0
more than 6%	0	0	1	2	0	0
Totals	11	9	12	25	15	14
Mean	0.9	1.4	1.7	1.6	0.4	0.5

nominations for each child which were positive. This variable 'pro-pref' was computed using the following formula: 100 x likes divided by likes + dislikes. A positive correlation (r= +.83) was found between pro-pref and Z-preference. This correlation between pro-pref and preference can be seen in Table 9, which shows that the rejected children scored the lowest in pro-pref, the popular children scored the highest, and the neglected children were between the two. The data compiled in Table 9 can be found at Appendix I.

Major correlates to pro-pref include the following variables: The global rating scale derived from the RABI (r = .46), accounting for 21% of the variance; and a parental diagnosis with an affective component (r = .56) accounting for 31% of the variance. These two findings are identical to those which predicted to Z-preference and are a function of the high correlation between pro-pref and Z-preference. Two additional variables for pro-pref emerge from the analyses: The child's Full IQ (r= .66), accounting for 44% of the variance, and the Consensus Rorschach variable Acknowledgment of Speeches 1 & 2 (full or partial) (r= .60), accounting for 36% of the variance.

Table 9: Peer Status Group
As a Function of
Pro-Pref Ranking

Pro-Pref Range	Re-jected	Neg-lected	Aver-age	Contro-versial	Pop-ular	Total
0	6	1	0	0	0	7
0.1-10	7	1	3	0	0	11
10.1-20	3	2	3	0	0	8
20.1-30	1	2	5	0	0	8
30.1-40	0	4	4	1	0	9
40.1-50	0	6	4	0	0	10
50.1-60	0	2	3	0	0	5
60.1-70	0	2	2	0	0	4
70.1-80	0	3	1	1	2	7
80.1-90	0	1	3	0	5	9
90.1-99	0	0	5	0	4	9
100	0	1	0	0	2	3
TOTALS	17	25	33	2	13	90

Additional Data Analyses

Multiple regression analyses revealed a significant main effect for the chronicity of illness variable (CORT), which predicted to Z-impact (r= .30), accounting for 10% of the variance. As mentioned previously, an illness was classified as chronic if there was no symptom-free period during a two-year span.

Major correlates to Z-preference indicate the following variables: The global rating scale derived from the RABI (r=.45), accounting for 20% of the variance; a parental diagnosis with an affective component (r=.54) accounting for 30% of the variance; and parental (the ill parent) IQ (r=.60), accounting for 36% of the variance.

Additional comparisons using analysis of variance for each of the four sociometric groups (excluding the two controversial children) were done. T-tests and Scheffe's post hoc analyses were used to look at differences between means.

Analysis of variance indicates a highly significant difference between groups for the measure of Full IQ (F= 5.23, $P < .0025$). Further investigations revealed that children designated as popular had significantly higher IQ scores than the children in the other three sociometric groups. These findings represent a significant difference at the $P < .05$ level between means as follows: Popular

children when compared to the average group (t= 9.36), the neglected group (t= 10.33) and the rejected group (t= 16.13). This latter comparison between the popular and rejected groups is especially strong and significance at the P< .05 level was found on the Scheffe test (F = 16.13). The IQ scores of the children classified as average were very close to those classified as neglected.

A significant (P< .05) difference emerges between groups for the number of older brothers per household (F= 2.90; P< .04). The children classified as neglected had more older siblings than the other three groups.

The level of parental functioning derived from the average global rating score was significant in distinguishing all four sociometric groups. The parents of children classified as members of the rejected group were significantly (P< .05) less well-functioning when compared to those children in the popular (t= -10.42), average (t= -10.23), and neglected groups (t= -9.11).

On further tests of sociometric group comparisons, analysis of variance revealed significant differences between parental views of children in the four sociometric groups, as measured by the Rochester Adaptive Behavior Inventory (RABI) (F= 3.84; P< .013). This structured interview covered such areas as the child's school behavior, achievement and peer and family interactions. Each question was rated on a scale from one (above-average

adjustment) through five (seriously disturbed). A significant difference between the rejected children and both the neglected (t= .67) and the popular children (t= 1.04) at the P< .05 level was found. On the Scheffe test, a significant difference was found between the popular and the rejected children (F= 1.04; P< .05). These findings indicate that parents were able to distinguish behavioral differences among their children. For example, the parents of a child who was classified sociometrically as popular was described by his parents in a clearly distinct manner from one who was classified as rejected.

The opinions of professionals concerning the adjustment of the subjects were compiled into the Child Overall Psychiatric Evaluation (COPE). There was a significant difference among the four sociometric groups (F= 3.84; P< .017). T-test comparisons revealed significant differences between the overall adjustment of the popular group compared to the other three groups. Rejected group (t= -1.95), neglected group (t= -1.50) and average group (t= -1.38). In each instance, the popular children were viewed as better adjusted. On the more stringent Scheffe test, a significant difference emerged between the popular and rejected group (F= -1.95; P < .05). Data for these comparisons between groups are on Table 10, sections numbered I through III.

Table 10: Peer Status Group as a Function of Select Variables

I. Analysis of Variance

(degrees of freedom = 3 in all cases)

Variable	Sum of Squares	F-Value	PR > F
IQ	1798.88	5.23	0.0025
Number of Older brothers	12.3641	2.90	0.0402
Average Rating	1349.26	2.65	0.0540
RABI	7.48359	3.84	0.0130
COPE	17.0925	3.84	0.0166

II. T-tests (two-tailed)

A. Variable = IQ

Critical t-value = 1.99
Degrees of freedom = 76
Confidence level = 0.95,

Groups	Difference Between Means	Standard Deviation	Significance At 0.05 Level
Pop-Avg	9.356	7.191	***
Pop-Neg	10.329	7.866	***
Pop-Rej	16.125	8.146	***
Avg-Neg	0.973	6.143	
Avg-Rej	6.769	6.498	***
Neg-Rej	5.796	7.238	

Table 10 (continued)

B. Variable = Number of Older Brothers

Critical t-value = 1.99
Degrees of freedom = 79
Confidence level = 0.95,

Groups	Difference Between Means	Standard Deviation	Significance At 0.05 Level
Neg-Pop	0.4962	0.8641	
Neg-Avg	0.8542	0.6409	***
Neg-Rej	0.9167	0.7660	***
Pop-Avg	0.3580	0.8295	
Pop-Rej	0.4205	0.9296	
Avg-Rej	0.0625	0.7267	

C. Variable = Average Rating

Critical t-value = 1.99
Degrees of freedom = 81
Confidence level = 0.95,

Groups	Difference Between Means	Standard Deviation	Significance At 0.05 Level
Pop-Avg	0.197	8.731	
Pop-Neg	1.312	9.224	
Pop-Rej	0.656	9.766	***
Avg-Neg	1.115	7.036	
Avg-Rej	10.225	7.733	***
Rej-Neg	9.110	8.284	***

Table 10 (continued)

D. Variable = RABI

Critical t-value = 1.99
Degrees of freedom = 73
Confidence level = 0.95,

Groups	Difference Between Means	Standard Deviation	Significance At 0.05 Level
Rej-Avg	0.4892	5.000	
Rej-Neg	0.6648	5.275	***
Rej-Pop	1.0375	6.472	***
Avg-Neg	0.1755	4.539	
Avg-Pop	0.5483	5.888	
Neg-Pop	0.3727	6.123	

E. Variable = COPE

Critical t-value = 1.99
Degrees of freedom = 40
Confidence level = 0.95,

Groups	Difference Between Means	Standard Deviation	Significance At 0.05 Level
Rej-Neg	0.4464	1.1155	
Rej-Avg	0.5714	1.1540	
Rej-Pop	1.9464	1.2740	***
Neg-Avg	0.1250	0.9192	
Neg-Pop	1.5000	1.0659	***
Avg-Pop	1.3750	1.1062	***

Table 10 (continued)

III. Scheffe's Test

A. Variable = IQ

Critical value of F = 2.725
Degrees of freedom = 76
Confidence level = 0.95

Groups	Difference Between Means	Standard Deviation	Significance At 0.05 Level
Pop-Avg	9.356	10.323	
Pop-Neg	10.329	9.366	
Pop-Rej	16.125	11.695	***
Avg-Neg	0.973	8.819	
Avg-Rej	6.769	9.329	
Neg-Rej	5.796	10.391	

B. Variable = RABI

Critical value of F = 2.73
Degrees of freedom = 73
Confidence level = 0.95

Groups	Difference Between Means	Standard Deviation	Significance At 0.05 Level
Rej-Avg	0.4892	0.7197	
Rej-Neg	0.6648	0.7575	
Rej-Pop	1.0375	0.9293	***
Avg-Neg	0.1755	0.6518	
Avg-Pop	0.5483	0.8458	
Neg-Pop	0.3727	0.8792	

C. Variable = COPE

Critical value of F = 2.8388
Degrees of freedom = 40
Confidence level = 0.95

Groups	Difference Between Means	Standard Deviation	Significance At 0.05 Level
Rej-Neg	0.4464	1.6107	
Rej-Avg	0.5714	1.6663	
Rej-Pop	1.9464	1.8395	***
Neg-Avg	0.1250	1.3272	
Neg-Pop	1.5000	1.5391	
Avg-Pop	1.3750	1.5970	

Chapter Five: Discussion of Research Findings and Conclusions

This study involved children of psychiatrically-impaired parents. As such, they were exposed to a unique set of stresses which may have affected the results of this study. Somewhat surprisingly, however, there was only a barely discernible (and statistically insignificant) difference between the preference and impact scores of these children and those of their classmates. Since the hypotheses of this study were all tested by reference to these scores, the unique nature of the family environments of these children does not seem to have affected this test data. Nonetheless, the interaction styles of the families of the subject children have a complexity missing from the style of normal families, and one which may complicate the measurement of the family variables or their correlations with impact and preference in ways not anticipated by this study.

Review of Purpose, Objectives and Findings

Previous researchers have demonstrated that children who have difficulties with peers are at risk for developing adjustment and/or psychiatric problems later in life (Roff, et al., 1972; Cowen, et al., 1973). The goal of this study was to establish a link between adequate family interaction patterns and successful peer behavior. Since research has established that interpersonal problems with peers predict to poor adult adjustment, it was thought possible that

identifying those factors within the family which promote successful peer adaptation may also serve to identify family interaction patterns that result in children becoming healthy adults.

Results of the Four Hypotheses of this Study

In this study, several family interaction-style variables were investigated as possible factors relating to peer interaction patterns. The correlation of these variables with the peer status of 90 white, ten year old male children who participated in the Rochester Child and Family Study (URCAFS) was analyzed to test four hypotheses. In general, these hypotheses derived from a central thesis: that parents who were attentive, responsive, open-ended and positive would have children who would be popular, while parents who were inattentive, unresponsive, directive and negative would have children who would be unpopular.

None of the four hypotheses were confirmed by the use of Pearson product-moment correlations. In two instances, there may have been no correlation because the URCAFS data did little to distinguish one family from another. For example, the amount of directiveness towards a child, coded as behavior commands (e.g., commands to sit down, be still, etc.), was hypothesized to be a factor in the adjustment of a child in school. It was proposed that children who were

subjected to continual restrictions and often told what to do would carry this behavior with them in their peer interactions. The result, it was hypothesized, would be negative interactions with peers. In 41 families, however, there were no reports of any behavior commands, and in the remaining families the range of this variable was extremely small. Even if there were a negative correlation between parent directiveness and child popularity, the URCAFS behavior commands measure would have been unlikely to find it.

In a similar vein, it was hypothesized that families who related positive comments, suggestions, and opinions would have more popular children, while those whose comments were predominantly negative would have unpopular ones. Here again, the URCAFS family measures of positive versus negative messages had a very limited range, and thus did little to discriminate among families.

This paucity of meaningful data was not a problem in testing the other two hypotheses. It was hypothesized, for example, that extremely verbal families would produce children who had a large impact on their peers, while families that were less verbal would produce children who were neglected by their peers. The range of the quantity of verbal interaction in the URCAFS Family Rorschach was extensive, both on a per-person and per-family basis.

Simply measuring the overall quantity of verbal interaction, however, did not discriminate between families that produced high- and low-impact children. Communication within the family has been shown to be an important aspect of family interaction (Lewis, et al., 1981). If there is a relationship between family verbal interaction style and peer status the results of this study suggest that mere quantity of verbal interaction is not the source of that relationship.

The final hypothesis was that families whose members acknowledged each other's speech would produce more preferrred children. The Pearson product-moment correlation did not indicate, however, any significant correlation between the percentage of acknowledging speeches and the child's peer preference rating. Although no direct correlation between family acknowledgment and peer status was found, an indirect correlation was found. Pro-pref, discussed further below, was significantly correlated with both the percent of acknowledging speech and with peer preference.

In general, no significant, direct correlation was found between the family variables tested and the peer ratings that were hypothesized to be affected by them. In two of the four instances (behavior commands and positive versus negative speech), the tests devised to measure

aspects of a family's interaction style appear in retrospect to have been deficient, since they produced a very limited range of data. In another instance, the hypothesis involving the quantity of speech, the data seems adequate, and the lack of a significant correlation between the family variable and peer impact may suggest that the hypothesis needs to be re-examined. In the final case, the indirect correlation found between the family acknowledgment variable and peer preference suggests that, although the hypothesis may contain an element of validity, it needs to be expressed and tested in a slightly different manner.

Pro-Pref Analysis

An alternate measure of peer status was devised in this study: pro-pref. This measure, computed by dividing likes by (likes + dislikes), essentially negates impact as a component of peer acceptance by focusing solely on the percentage, rather than the absolute quantity, of favorable nominations. Thus, children classified as average or neglected because they received fewer nominations (in other words, had lower impact) than the popular or rejected children can be found among the highest (and lowest) pro-pref scores. As table 10 shows, however, the low pro-pref scores are dominated by rejected children, the high scores by the popular ones, and the middle scores by

the neglected and average ones. Thus, it is not surprising that pro-pref correlates significantly with preference (r= +.83). More interestingly, pro-pref also correlates positively with the level of acknowledging remarks made by the child's parents. This suggests that one hypothesis of this study, that there would be a positive correlation between family acknowledgment and peer preference, was close to the mark. If one alters the hypothesis slightly to say that there will be a positive correlation between family acknowledgment and the percentage of peer nominations that will be positive, the hypothesis is confirmed by this study. Thus, children from acknowledging families will not necessarily have a high impact and thus may not belong to the popular group, but they will at least tend to be well regarded by those who take notice of them.

In addition to correlating with the acknowledgment family variable, pro-pref also correlated with IQ score. Similar results have been reported in the literature (Hartup, 1983; Sells & Roff, 1967; Gronlund, 1959; Coie, et al., 1982).

Additional Data Analysis

A series of correlational analyses was done to see what demographic variables might be involved in determining a child's impact or preference rating. These tests indicate that those children who were more preferred by their

classmates had three components in common. First, they had parents who gave positive reports concerning their social and emotional development. This finding is in keeping with research done that has described protective and risk factors for child development (Rutter, 1979, 1981). Rutter helped to clarify the variables involved in the development of competence in children under stress. He identified protective factors, including family interaction styles, which were found to be important in guarding against psychiatric disorders in children at risk. Specifically, the type of discipline and supervision provided and the existence of a positive relationship with at least one parent were noted as ameliorating conditions that promoted well-being.

Second, these tests found that more preferred children had index parents who, despite their illnesses, had personalities with a strong affective component. This finding is consistent with the existing body of URCAFS research (Harder, et al., 1980), which found these offspring scored highest on cognitive competence and academic problem-solving ability as well as friendliness.

Third, these tests also found a significant correlation between parental intelligence and child preference. Since it is likely that these more intelligent parents had more

intelligent children, this finding is consistent with other research which has correlated a child's intelligence with his or her popularity (Gronlund, 1959; Sells & Roff, 1967; Coie, et al., 1982; Hartup, 1983).

Harder et al., (1980) found that the ill parent's global rating of impairment was found to have a significant, negative correlation with the child's cognitive performance, especially when the index parent was the mother. In this study, parents whose illnesses were classified as chronic had offspring with greater impact in their classrooms, but no significant negative correlation was found between chronicity and peer preference. Nonetheless, the data may contain some implication that when a relationship exists. For example, the rejected children had 13 chronic and 4 non-chronic parents, while the popular children had 4 chronic and 9 non-chronic parents. Furthermore, analysis of variance and t-tests indicated that the parents of rejected children were in fact lower functioning than the parents of any of the other groups of children.

Cohort Analysis

The data were also examined by dividing the 90 URCAFS children into cohorts according to their impact and preference scores, and the distribution of the variables tested in the four hypotheses was reviewed. The results of

this tabulation cannot be considered statistically significnt, but nonetheless suggest a possible pattern that might explain some lack of results. In several cases, the mean scores among the cohorts suggest a possible non-linear relationship between the family variable tested and either impact or preference. For example, both the most-preferred and the least-preferred childern seemed to have fewer behavior commands in their family environments than the children whose preference scores were closer to the mean. This non-linear relationship, if it exists, may suggest a more complex set of relationships between certain family variables and peer success than has been hypothesized by this study.

Problems and Limitations of Methodology

Three types of data were used in this study: peer nominations, clinical observations of behavior during a Family Rorschach session and demographic data. The peer nominations, which took the form of the Class Play, were well administered. If any criticism can be made of this portion of the study, it is that the quesionnaire may have stressed too highly the intelligence of the children. Altogether, 9 out of 22 questions can be said to measure intellectual skills rather than social competence.

It has been pointed out that the Family Rorschach data tested in evaluating two hypotheses seemd not to

distinguish between families. It is suggested that the Family Rorschach task may not by its nature be amenable to producing a sample of average daily family interactions to measure the quality of the family environment. It may be necessary to measure family variables in more normal circumstances than are available in a laboratory study. Natural, home-based observations over a period of time would likely yield a better measure of family communication patterns.

Suggestions for Further Study

The URCAFS research design was originally intended to measure a number of variables that were ultimately unavailable for this study. These variables were supposed to have been coded using criteria established at the time the study was undertaken, but the coding was not done and the videotapes of the sessions have not all been preserved. Among the variables that would have been useful had they been available are:

AGREE, DISAGREE, intended to measure family members' acceptance and rejection of each others' ideas;

INTERRUPT, how often a child interrupts others or is interrupted by others;

OVERLAP, how often two or more family members speak at the same time.

Future studies might consider obtaining these family interaction variables. Further, some additional demographic information concerning the families could be developed. It would be interesting to know, for example, the age of the child at the time(s) of the index patient's hospitalization(s), and who takes care of the child when, as in most cases, the mother is absent.

Conclusions

The URCAFS study presented rich and interrelated data sets involving dozens of carefully monitored Family Rorschach situations and scores of peer rating studies, not to mention other data that was passed over in favor of the Family Rorschachs and peer ratings. Even though two of the four hypotheses seem to have had insufficient data to support meaningful results, the results obtained in the pro-pref studies, the analysis of variance and the cohort analysis indicate that the URCAFS data contain valuable insights into the relationship between family background and peer status.

The hypotheses posited in this study were tested in an attempt to quantify dimensions of family interaction and isolate ingredients which would predict either healthy, well-adjusted children or those who would be deemed "at risk." This study was unable to establish a direct correlation between the variables tested and peer

preference; at least an indirect link was established, however, between peer preference and the acknowledgment variable.

The results obtained in this study also corroborate existing findings in the literature to the effect that intelligent children tend to be more popular. This study also showed that URCAFS children who are rejected by their peers have parents with less affect and more serious pathology than the parents of other URCAFS children. This combination of factors certainly points to an increased risk of continued poor adjustment and potential adult disturbance.

This study suggests that, at least in the case of children of psychiatrically-impaired parents, there may be a more complex relationship between certain family interation styles and peer success than can be discerned in a test for a straight-line correlation. Some of the same behavior, at least as measured in the URCAFS study, may occur in families producing children who are at either end of the peer preference spectrum.

Finally, in developing the pro-pref measure, this study may have developed a new measure that has meaningful correlations both with family interaction style and peer success. This measure, which focuses on the precentage of favorable peer nominations rather than the quantity of them, might be of use to further researchers.

Appendices

APPENDIX A :

CLASS PLAY

Student's Name _____ Date _____

School _____ Birthdate _____

Grade _____ Teacher _____

1. Someone who makes friends easily.	P
2. A boy or girl who catches on fast to school work.	P
3. A boy or girl who is well-behaved in school.	P
4. Someone who has many friends.	P
5. Someone who does not easily understand school work.	N
6. A person who does poorly in arithmetic.	N
7. A person who gets into fights and quarrels more often than others.	N
8. Someone who usually knows the right answer.	P
9. A boy or girl who teases other children.	N
10. A boy or girl who easily forgets what he learns.	N
11. Someone who finishes school work correctly.	P
12. A person who usually keeps on talking after being told to stop.	N
13. Someone who plays with others more often than by himself/herself.	P
14. A boy or girl who usually follows the rules of the class.	P

CLASS PLAY

15. Someone who is often left out.	N
16. A boy or girl who is a good reader.	P
17. Somebody who does not understand instructions.	N
18. A person who usually tells the truth.	P
19. A boy or girl who has a hard time getting others to listen to him/her when playing.	N
20. A person who often interrupts when other children are speaking	N
21. Someone who has a hard time joining groups.	N
22. A boy or girl who has a hard time reading.	N

APPENDIX B: URCAFS Population
Likes, Dislikes, Impact and Preference Scores
Derived By Comparing URCAFS Children's Scores
To One Another
(All Data Adjusted to Compensate for Classroom Size)

URCAFS I.D.	Class Attendance	Likes[1]	Dislikes[1]	Impact	Preference	Graph Number
155	23	8.70	8.70	17.39	-0-	1
033	24	78.26	17.39	95.65	60.87	2
026	19	42.10	163.16	205.26	-121.05	3
018	28	21.42	139.29	160.71	-117.86	4
571	27	103.70	14.81	118.52	88.89	5
578	25	12.00	108.00	120.00	-96.00	6
002	28	21.43	150.00	171.43	-128.57	7
040	28	-0-	232.14	232.14	-232.14	8
105	27	122.22	22.22	144.44	100.00	9
106	23	34.78	60.87	95.65	-26.09	10
203	27	13.04	40.74	51.85	-29.63	11
205	28	50.00	17.85	67.86	32.14	12
213	29	34.48	3.45	37.93	31.03	13
207	22	22.73	18.18	40.91	4.55	14
218	25	8.00	28.00	36.00	-20.00	15
222	26	-0-	96.15	96.15	-96.15	16
223	20	55.00	10.00	65.00	45.00	17
234	24	16.67	62.50	79.17	-45.83	18
265	24	25.00	12.50	37.50	12.50	19
294	24	54.17	29.17	83.33	25.00	20
391	31	38.71	32.26	41.94	35.48	21
366	25	4.00	84.00	88.00	-80.00	22
358	25	28.00	52.00	80.00	-24.00	23
331	24	12.50	50.00	62.50	-37.50	24
323	28	21.43	57.14	78.57	-35.71	25
287	25	172.00	60.00	232.00	152.00	26
492	23	8.70	34.78	43.48	-26.09	27
485	26	15.38	23.08	38.46	-7.69	28
461	35	17.14	17.14	34.29	-0-	29
397	24	4.17	237.50	241.67	-233.33	30
399	27	92.59	14.81	107.41	-77.78	31
448	24	-0-	37.50	37.50	-37.50	32
221	27	88.88	3.70	92.59	85.19	33

[1] Likes and dislikes are presented as a percentage, computed by dividing the number of positive or negative nominations by the number of children in the class. This corrects for the likelihood that a child in a large class will receive more nominations than one in a small class.

Appendix B (continued)

URCAFS I.D.	Class Attendance	Dislikes[1]	likes[1]	Impact	Preference	Graph Number
152	35	5.71	42.86	48.57	-37.40	34
151	27	25.93	55.55	81.48	-29.63	35
602	27	18.52	48.15	66.67	-29.63	36
599	29	10.34	3.45	13.79	6.90	37
576	28	64.29	10.71	75.00	53.57	38
552	22	4.55	163.64	168.18	-159.09	39
540	19	5.26	15.79	21.05	-10.53	40
513	30	-0-	163.33	163.33	-163.33	41
496	30	6.67	13.33	20.00	-6.67	42
053	22	59.09	45.45	104.55	13.64	43
882	12	25.00	208.33	233.33	-183.33	44
734	25	264.00	8.00	272.00	256.00	45
719	23	286 96	13.04	300.00	273.91	46
705	31	51.61	3.23	54.84	48.39	47
665	30	-0-	76.67	76 67	-76.67	48
632	30	6.67	10.00	16.67	-3.33	49
606	26	19.23	315.38	334.62	-296.15	50
343	24	4.17	179.17	183.33	-175.00	51
341	26	38.46	11.54	50.00	26.92	52
337	25	88.00	4.00	92.00	84.00	53
336	33	9.09	57.58	66.67	-48.48	54
333	27	11.11	7.41	18.52	3.70	55
946	21	33.33	33.33	66.67	-0-	56
934	21	9.52	157.14	166.67	-147.62	57
919	27	51.85	40.74	92.59	11.11	58
010	23	39.13	17.39	56.52	21.74	59
013	25	24.00	-0-	24.00	24.00	60
021	38	21.05	26.32	47.37	-5.26	61
027	31	16.13	22.58	38.71	-6.45	62
029	25	8.00	20.00	36.00	-4.00	63
072	31	3.23	67.74	70.97	-64.52	64
154	20	140.00	-0-	140.00	140.00	65
160	27	125.93	-0-	125.93	125.93	66
230	24	129.17	33.33	162.50	95.83	67
488	29	3.45	27.59	31.03	-24.14	68
527	26	80.77	3.85	84.62	76.92	69
532	16	-0-	137.50	137.50	-137.50	70
593	25	24.00	4.00	28.00	20.00	71
605	28	21.43	39.29	60.71	-17.86	72

[1] Likes and dislikes are presented as a percentage, computed by dividing the number of positive or negative nominations by the number of children in the class. This corrects for the likelihood that a child in a large class will receive more nominations than one in a small class.

Appendix B (continued)

URCAFS I.D.	Class Attendance	Dislikes[1]	likes[1]	Impact	Preference	Graph Number
614	26	19.23	7.69	26.92	11.54	73
615	24	104.17	208.33	312.50	-104.70	74
680	21	33.33	9.52	42.86	23.81	75
726	27	66.67	25.93	92.59	40.74	76
748	26	15.38	15.48	30.77	-0-	77
851	25	20.00	24.00	44.00	-4.00	78
854	14	7.14	64.29	71.43	-57.14	79
881	25	16.00	16.00	32.00	-0-	80
884	22	36.36	22.73	59.09	13.64	81
921	31	35.48	35.48	70.97	-0-	82
931	28	60.71	10.71	71.43	50.00	83
953	22	4.55	63.64	68.18	-59.09	84
956	14	150.00	14.29	164.29	135.71	85
338	27	3.70	92.59	96.30	-88.89	86
712	17	5.88	158.82	164.71	-152.94	87
978	14	14.29	78.57	92.86	-64.29	88
014	25	32.00	4.00	36.00	28.00	89
959	21	9.52	14.29	23.81	-4.76	90

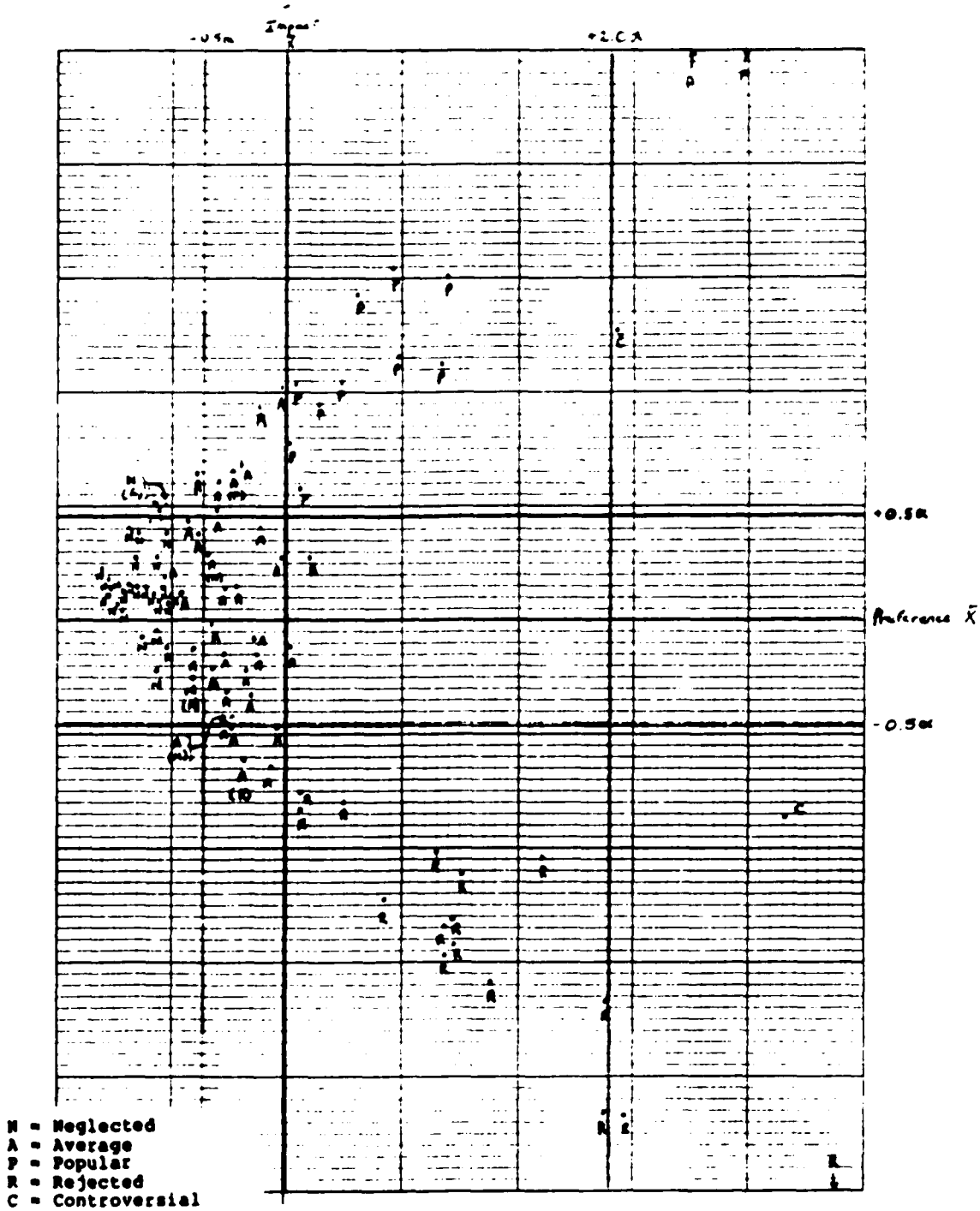
N = 90

Mean:		94.08	-15.30
Standard Deviation		71.86	93.34

[1] Likes and dislikes are presented as a percentage, computed by dividing the number of positive or negative nominations by the number of children in the class. This corrects for the likelihood that a child in a large class will receive more nominations than one in a small class.

Appendix C

URCAFS Impact and Preference Scores
Plotted Using Impact, Preference Means as Axes
And Showing Peer Status Group



Note: Where classroom data analysis resulted in reclassification, URCAFS results shown first, classroom results shown below in parantheses.

APPENDIX D: URCAFS Population
Likes, Dislikes, Impact and Preference Scores
Derived By Comparing Scores Within Classrooms
(Sorted by peer status group)

The Popular Children: Z-Impact greater than 0; Z-Preference more than 0.5 s.d. above the mean; fewer than 10 negative nominations received.

URCAFS I.D	Class Attendance	Likes	Dislikes	Z - Impact	Z - Preference	Graph Number
033	24	18	4	0.14	1.09	2
571	27	28	4	0.49	1.27	5
105	27	33	6	0.65	2.06	9
399	27	25	4	0.52	1.11	31
734	25	66	2	2.06	2.53	45
719	23	66	3	2.05	2.27	46
337	25	22	7	0.38	1.74	53
154	20	28	0	0.36	1.31	65
160	27	34	0	0.96	1.70	66
230	24	31	8	0.79	1.71	67
726	27	18	7	0.07	1.05	76
931	28	17	3	0.04	0.92	83
956	14	21	2	1.65	2.12	85

N=13

The Rejected Children: Z-Impact greater than 0; Z-Preference more than 0.5 standard deviations below the mean; Fewer than 10 positive nominations received.

URCAFS I.D.	Class Attendance	Likes	Dislikes	Z - Impact	Z - Preference	Graph Number
026	19	8	31	1.56	-0.95	3
018	6	39	0.71	-1.25	4	
578	25	3	27	0.49	-0.75	6
002	28	6	42	1.41	-1.32	7
040	28	0	65	1.98	-2.22	8
222	26	0	25	0.08	-1.02	16

Appendix D (continued)

397	24	1	57	1.77	-1.95	30
552	22	1	36	0.54	-1.01	39
513	30	0	49	1.32	-1.73	41
882	12	3	25	0.35	-0.76	44
665	31	0	23	0.06	-0.69	48
606	26	5	82	2.88	-2.78	50
343	24	1	43	1.72	-2.28	51
934	21	2	33	1.35	-0.94	57
532	16	0	22	0.05	-0.94	70
338	27	1	25	0.85	-1.19	86
712	17	1	27	1.06	-1.14	87

N= 17

The Neglected Children: Z-Impact more than 0.5 standard deviations below the mean; Fewer than 10 positive and negative nominations received.

URCAFS I.D.	Class Attendance	Likes	Dislikes	Z - Impact	Z - Preference	Graph Number
154	23	2	2	-0.80	0.38	1
218	25	2	7	-0.70	-0.07	15
265	27	6	3	-0.55	0.37	19
485	26	4	6	-0.92	0.07	28
461	35	6	6	-0.72	0.15	29
448	24	0	9	-0.89	0.27	32
599	29	3	1	-1.05	0.46	37
540	19	1	3	-1.01	0.12	40
496	30	2	4	-1.02	0.11	42
632	30	2	3	-0.78	-0.10	49
333	27	3	2	-0.86	0.37	55
013	25	6	6	-0.81	0.28	60
017	32	5	7	-0.69	0.35	62
029	28	4	5	-0.56	0.36	63
488	29	1	8	-0.74	0.22	68
593	25	6	1	-0.78	0.84	71
614	26	5	2	-1.08	0.35	73
680	22	7	2	-0.56	0.83	75
748	26	4	4	-1.09	0.36	77
851	25	5	6	-1.03	0.11	78
854	16	1	9	-0.64	-0.38	79
881	25	4	4	-0.91	0.56	80
884	23	8	5	-0.63	0.28	81
014	25	8	1	-0.68	0.32	89
959	21	2	3	-1.18	0.69	90

N= 25

Appendix D (continued)

The Controversial Children: Z-Impact more than 2.0 Standard deviations above the mean; Not rejected or popular.

URCAFS I.D.	Class Attendance	Likes	Dislikes	Z - Impact	Z - Preference	Graph Number
287	27	43	15	2.73	1.81	26
615	26	25	50	2.67	-0.88	74

N= 2

The Average Children: Those Children in no other group.

URCAFS I.D.	Class Attendance	Likes	Dislikes	Z - Impact	Z - Preference	Graph Number
106	23	8	14	0.10	-0.10	10
203	27	3	11	-0.30	0.01	11
205	28	14	5	-0.40	1.06	12
213	29	10	1	-0.71	0.58	13
207	22	5	4	-0.50	-0.09	14
223	20	11	2	-0.47	0.68	17
234	26	4	15	-0.05	-0.31	18
294	24	13	7	-0.15	0.56	20
391	31	12	1	-0.53	0.75	21
366	25	1	21	-0.19	-0.68	22
358	25	7	13	-0.16	0.06	23
331	25	3	12	-0.44	0.02	24
323	30	6	16	0.03	-0.46	25
492	23	2	8	-0.50	-0.12	27
221	27	24	1	-0.25	0.96	33
152	35	2	15	-0.79	-0.29	34
151	29	7	15	0.31	0.16	35
602	28	5	13	-0.35	-0.07	36
576	28	18	3	-0.07	1.17	38
053	22	13	10	0.19	0.84	43
705	31	16	1	-0.24	0.70	47
341	28	10	13	-0.39	0.65	52
336	35	3	19	-0.10	-0.06	54
946	22	7	7	-0.34	0.46	56
919	28	14	11	0.89	0.37	58
010	24	9	4	-0.46	0.50	59
021	40	8	10	-0.27	0.05	61
072	35	1	21	-0.41	-0.52	64
527	27	11	1	-0.55	0.77	69
605	28	6	11	-0.67	-0.04	72
921	32	11	11	0.00	0.27	82
953	22	1	14	-0.40	-0.27	84
978	17	2	11	-0.06	0.18	88

N= 33

APPENDIX E:

RELATIONSHIP SCALE

DEFINITION: The Relationship Scale measures the amount of friendliness or attacking that occurs between family members.

MAJOR CATEGORIES: Each speech is scored in one and only one of the following categories:

5	strong positive relationship
4	mild positive relationship
3	neutral relationship
2	mild negative relationship
1	strong negative relationship
NS	nonscorable

DEFINITIONS OF CATEGORIES:

5 strong positive relationship: the speech is quite friendly, positive, or accepting. It carries an element of strong good will or support.

4 mild positive relationship: the speech is somewhat friendly, positive, or accepting. It carries some good will, but is less intense than a strong positive relationship speech.

3 neutral relationship: the speech doesn't seem to imply any particular relationship message. The words are neutral in content, and the tone of voice is neither accepting or attacking.

2 mild negative relationship: the speech is somewhat attacking, rejecting, or complaining. It implies some ill will or rejection.

1 strong negative relationship: the speech is openly attacking, rejecting, or strongly complaining. It implies strong criticism of, or annoyance with, the person to whom it is addressed.

NS nonscorable: the speech is too short or too soft to be scored.

GENERAL DISCUSSION:

A. The Relationship Scale is scored using both the tape and the transcript.

B. We assume that all speeches can be scored along a continuum which ranges from "accept" to "reject" or from "affiliate" to "attack," regardless of their explicit content. The Relationship Scale measures the quality of the relationship which the speaker indicates to the person he is addressing, along this continuum.

C. The rater should consider both verbal and tonal aspects of a speech when scoring it on the Relationship Scale. The score of a speech is the "sum" of its content "score" and its tone "score." Thus, for example, a very strong friendly tone alone is sufficient for a score of 5, strong positive. A somewhat friendly tone combined with friendly

content might also yield a score of 5. But a somewhat friendly tone coupled with neutral content could receive a score no higher than 4, mild positive, and might even receive a score of 3, neutral. For example:

5 - "You've really made some good suggestions here." (said warmly)

5 - "This is a lively discussion." (said with a great deal of warmth)

4 - "This is a lively discussion." (said with some warmth)

4 - "You've really made some good suggestions here." (said in a bland tone of voice)

D. Each speech is scored <u>in relation to the person to whom it is addressed</u>. The rater should check the "to whom" column of the transcript before scoring a given speech. For example:

D1 to Mo: Dad is a terrible person to have along at the beach, so let's just the two of us go and we can have a great time together.
(Daughter's remark is an attacking remark in relation to father, but it is a friendly remark to mother. Since daughter is speaking to mother, the speech is scored as a positive relationship speech.)

E. The rater should score each speech using his own response to it as the indicator of whether or not it is attacking or friendly. He should not make a score in terms of what he thought the speaker intended to do. Thus, on this scale, as on others, the rater should make an effort to avoid imputing motives to the speaker. For example:

Mo (to 10 year old child): Can I speak, Maryanne? (said in an overly sweet, humble voice)

In this speech, the mother was trying to make a positive relationship remark to her daughter, but her speech does not come across as really friendly to the rater. Therefore, her speech is not scored as a positive relationship remark; it is scored either neutral or perhaps mild negative.

The rule--that the rater refrain from scoring "intent"--is <u>very important</u>.

F. Single or two-word speeches must have very strong affect in order to receive a relationship score. They rarely get a score of 1 or 5. Such remarks as, "Marvelous!" (said with great warmth) or "Shut up!" (said with considerable anger) might receive a score of 5 or 1, respectively. But most one- or two-word speeches will be scored 3, neutral, or perhaps 2 or 4.

G. The Relationship Scale should be distinguished from other scales, and should be scored independently. For example:

1. The Relationship Scale should be scored independently from the Clarity Scale, although there will be some overlap. For example, an unclear speech will rarely receive a 4 or 5, positive relationship score, but this could be possible as in the following example:

   Fa: Johnny, would you like to go to the races? (laugh)
   (Father's speech might be scored unclear because of the laughter, but, if it is said in a warm tone of voice, it might also be given a score of 4, mild positive relationship.)

2. The Relationship Scale differs from the Commitment Scale and should be scored independently. For example:

   Mo: Can we go to the beach on our vacation?
   Fa: I don't know, dear (said with warmth)
   (Father's speech is scored 2, avoid commitment, but it is nevertheless a positive relationship remark.)

3. The Relationship Scale differs from the Agree/Disagree Scale. For example:

   Fa: Let's go to the movies.
   Mo: Oh, that's a great idea. (said with sarcasm)
   (On the Agree/Disagree Scale, mother's remark would be scored 1, agree, but on the Relationship Scale it is scored as an unfriendly speech, either 2 or 1.)

SCORING PROCEDURES:

A. Positive relationship speeches

Typical kinds of positive relationship remarks include:

1. Direct praise or encouragement of another person. For example:

   Mo: That certainly is a good idea, dear.

   or

   Fa: You're doing a good job as leader here.

   Note: If speaker A praises person C when speaking to person B, the score depends largely on the speaker's tone of voice. A's praise of C, if delivered in a neutral tone of voice, is scored 3, neutral. But A's praise of C, if given in a very warm, friendly tone of voice, is scored as positive relationship.

2. Direct comment about or statement of the speaker's positive feelings. For example:

   Fa: That makes me feel good to know that you think that way.

3. Offers of suggestions or opinions given in a supportive tone of voice. For example:

   Fa: Well, how about all of us going to the zoo tomorrow? (said in a strongly supportive, friendly tone of voice)

4. Generous answers to questions, i.e., the giving of more information than was requested, or, of a supportive explanation of an answer. For example:

   D2: What's at the park?
   Fa: Well, there's a place to camp out there, and to picnic, and there's a small zoo with animals, you know, like ducks and sheep. You'd like it there.

   Note: Some warmth has to be expressed in order for this to be scored as positive relationship.

5. Invitation to another to participate in the discussion. For example:

   Mo: What do you think of the park, Sandy? You get your turn, too, you know. (said warmly)

   Note: Some warmth or support has to be expressed in order for this to be scored as a positive relationship remark. If this remark is heard in a matter of fact tone of voice, it is scored 3, neutral.

6. Evaluative comments that are either one word or a short phrase and are said in a warm, enthusiastic tone of voice. For example:

   Fa: You might even wind up sleeping out on the porch.
   D2: That's okay! (said with enthusiasm)

   Mo: We could go the last two weeks in August.
   D1: Yes, that's even better!

7. Friendly laughter is scored as a positive relationship remark.

All of the above types of remarks are common forms of positive relationship speeches. The first two types are most likely to receive a score of 5, but any of the above might be scored 5, if the tone of voice strongly suggests friendly or supportive feelings.

Most families, but not all, will have more 4's than 5's on the Relationship Scale.

B. Negative relationship speeches

Typical kinds of negative relationship remarks include:

1. Direct attack on another person: a remark which is overtly critical of the other person and which is delivered in a slightly to strongly hostile tone of voice. For example:

   Fa: You're being stupid! (said in angry voice)

2. Very strong complaints which are said in a negative tone of voice. This can be a complaint about the intent or motives of the other person. For example:

   Mo: Let's not bring so many friends home next time. (said with an edge to her voice)

   Or it can be a complaint about an idea or plan, for example:

   Dl: Oh, I'm tired of going to the beach! (said with a whine)

   Note: If speaker A complains to B about C, the score depends largely on the speaker's tone of voice. A's complaint about C, if delivered in a neutral or friendly tone of voice, is scored 3, neutral. But A's complaint about C, if given in a strongly critical or bitter tone of voice, is scored as a negative relationship remark.

3. Questioning the motives or opinions of another person. For example:

   Fa to Mo: There you go again trying to be the boss!

4. Sarcastic remarks: Any clearly sarcastic remark is given a negative relationship score. For example:

   Fa: Oh, sure, your idea of going camping in the middle of winter is just brilliant. (said with sarcasm)

5. Attack on a suggestion in a vicious tone of voice, or with disdain or contempt: If the attack is on an idea, then the tone of voice must be distinctly critical for the remark to be scored as a negative relationship remark. For example:

   Sl: Let's go to Hawaii.
   Fa: That's a stupid idea. (said with irritation)
   (Father's attack is on son's idea only.)

   If the words directly criticize the person who made the suggestion, the attack need have only a small amount of hostility for it to be given a negative relationship score. For example:

   Sl: Let's go to Hawaii.
   Fa: You're being stupid as usual!
   (Father's attack is on the person of son.)

   Note: When the attack is on the idea expressed by the person, the tone of voice must be distinctly critical in order for it to be scored as a negative relationship remark. When the attack is on the person himself, the tone of voice is not so important when scoring negative relationship.

6. Displays of impatience or exasperation: The words of such remarks may be critical or chastizing; the tone is sharp, impatient. Such speeches may also include a rejection of a suggestion. For example:

   Mo: Look, Janet.....I'm talking. (said with annoyance)

   or

   Fa: Well, now, that's simply out of the question entirely.

7. Exclamatory remarks which conventionally imply disapproval are scored as negative relationship remarks. These are usually one word remarks. For example:

   Mo: And Susan can make some Betty Crocker cupcakes.
   S2: Yuch!

   or

   S2: We can take a ball and play polo in the pool.
   D1: Oh corn!

8. Defensive responses are scored as negative relationship remarks. For example:

   Mo: Don't you want to do anything?
   Fa: Well, sure I do, for heaven's sake.
   (Both father's and mother's speeches are scored as negative relationship remarks.)

All of the above types of speeches are common forms of negative relationship remarks. Direct attacks on a person are more likely to receive a score of 1 than are the indirect attacks. But a strongly attacking tone of voice is sufficient for a score of 1. Less intense forms of all the above types of speeches will be scored 2, mild negative. Speeches which are essentially neutral in content, but have a slight negative tone, will be scored either 2 or 3.

Most families, but not all, will have more 2's than 1's on the Relationship Scale.

C. Neutral relationship speeches: Give a score of 3, neutral, to speeches which are neither friendly nor attacking in tone or content. Most speeches are scored 3, neutral, on the Relationship Scale.

D. Nonscorable - NS: Speeches which are too short or too soft to be scored positive, negative, or neutral, are scored NS, nonscorable. This score is rarely used on the Relationship Scale because even very short phrases or incomprehensible speeches can be judged on the basis of their tone alone.

SPECIAL SCORING PROBLEMS:

A. Borderline cases:

1. If a speech is a borderline remark between a mild score and neutral, the rater should give it a score of 3, neutral.

2. If a speech seems to be a borderline case between a strong and mild form of a score, the rater should give it the score of the mild form, either a 4 or a 2.

3. If the rater has given the score of 3, neutral, to three or more speeches according to borderline rule #1, he should go back and rescore at least one of these speeches.

B. Occasionally a speech will seem to express both positive and negative affect simultaneously. And sometimes the content of a speech may imply one kind of relationship while the tone implies another. Some of these speeches will be picked up on the Clarity Scale as incongruent remarks, but others are milder conflicts, and will not be scored 2, incongruent, on the Clarity Scale. Such speeches as these are usually scored 3, neutral, on the Relationship Scale. If a positive or negative score is given to them, it should be slightly weighted towards the tone of voice and not the content of the speech.

Thus, there are really two kinds of neutral speeches. First, there are speeches which have neutral content and are delivered in a neutral tone of voice. Second, there are speeches which simultaneously suggest mild positive and mild negative relationship. These will usually be remarks which may imply a negative relationship through content, but are delivered in a somewhat friendly tone of voice.

C. Interruptions: Whether or not a speech is interrupted is irrelevant to its score on the Relationship Scale. All phrases are given a score on the Relationship Scale.

D. Laughter: A laugh which comes in the middle of a speech is scored as part of the tone of the speech. Laughter alone, or pure laughter, is scored as a separate speech. If the laugh is clearly friendly, it might be scored 4, mild positive relationship. If a laugh is ambiguous, it should be scored NS, nonscorable.

E. Miscellaneous:

1. Enthusiasm: The rater should distinguish between enthusiasm for an idea and positive relationship qualities in a speech. The more that approval of a suggestion is expressed in phrases which also compliment the person who made the suggestion, the more likely the remark will receive a score of 4 or 5, positive relationship.

2. Disagreement: A strong "no" to a suggestion or request is not necessarily a negative relationship remark. There must be some indication of rejection of the person in order for such remarks to be scored 2 or 1, negative relationship.

APPENDIX F: Descriptions, Labels, Means and Standard Deviations of Selected Measured Rorschach and Demographic Variables

	Description	Label	Mean	Standard Deviation
1.	Global Rating Scale	Grating	2.4	0.84
2.	Child Overall Psychiatric Evaluation	COPE	5.0	1.20
3.	Chronicity Measure	CORT	3.2	1.30
4.	Patient's Age	PTAGE	39.5	6.75
5.	Spouse's Age	SPAGE	40.8	8.00
6.	Kids in Class	NKIDS	25.7	4.6
7.	Likes	LKS	9.7	12.4
8.	Dislikes	DLKS	13.2	15.6
9.	Child's IQ	Full IQ	112.1	11.4
10.	Father's IQ	Dad IQ	113.5	13.1
11.	Mother's IQ	Mom IQ	109.2	12.9
12.	Verbal Communication	BELL	215.7	136.9
13.	Verbal Communication	RATE	42.5	22.7
14.	Amount of Positive Acknowledgment	ACK 12	53.0	13.8
15.	Amount of Negative Acknowledgment	ACK 34	47.1	13.8
16.	Number of Behavior Commands	BEHCMNDS	1.10	2.0
17.	Number of Positive Messages	RELAPOS	2.6	1.4
18.	Number of Negative Messages	RELANEGS	0.9	1.0
19.	Z-Impact	ZIMPACT	0.05	0.95
20.	Z-Preference	ZPREF.	0.16	1.00
21.	Pro-Pref	PROPREF	45.9	33.2

Appendix G: Family Variables
Correlated with Impact Score
(In ascending order of Impact)

URCAFS I.D.	Impact	Bell	Rate	Percent Behavior Commands
959	-1.18	160	32.0	0
748	-1.09	256	36.6	1.5
614	-1.08	78	15.6	0
599	-1.05	83	16.6	0
851	-1.03	156	39.0	0
496	-1.02	153	30.6	8.4
540	-1.01	146	*	0
485	-0.92	345	57.5	0.3
881	-0.91	491	70.1	1.2
448	-0.86	*	*	*
333	-0.86	*	*	*
013	-0.81	194	32.3	0
155	-0.80	874	124.9	0.3
152	-0.79	272	*	0
593	-0.78	270	67.5	1.2
632	-0.78	72	*	0
488	-0.74	117	29.3	0.8
461	-0.72	252	*	0.4
213	-0.71	227	28.3	0.4
218	-0.70	227	45.4	0
027	-0.69	242	40.3	4.0
014	-0.68	166	20.8	5.6
605	-0.67	247	49.4	0
854	-0.64	185	30.9	1.6
884	-0.63	108	27.0	0.9
680	-0.56	153	30.6	0
029	-0.56	286	57.2	0
527	-0.55	123	30.8	0
265	-0.55	276	46.0	4.6
391	-0.53	195	48.8	0
207	-0.50	221	44.2	0
492	-0.50	34	11.3	0
223	-0.47	527	105.4	0
010	-0.46	215	30.7	2.7
331	-0.44	289	83.5	0
072	-0.41	197	32.8	4.7
205	-0.40	106	35.3	1.9
953	-0.40	180	36.0	1.2

* Data not available.

Appendix G. (continued)

URCAFS I.D.	Impact	Bell	Rate	Behavior Commands
341	-0.39	208	41.6	0
602	-0.35	*	*	*
946	-0.34	230	38.3	6.4
203	-0.30	359	59.8	0
021	-0.27	151	37.8	2.6
221	-0.25	252	*	0
705	-0.24	144	36.0	0
366	-0.19	253	42.1	1.1
358	-0.16	162	40.5	1.2
294	-0.15	421	52.6	0.5
336	-0.10	77	25.7	0
576	-0.07	135	*	0
978	-0.06	182	60.7	1.1
234	-0.05	124	20.7	9.8
921	0.00	115	23.0	0
323	0.03	88	29.3	1.9
931	0.04	54	13.5	0
532	0.05	304	76.0	0
665	0.05	338	48.3	0
726	0.07	129	32.3	1.4
222	0.08	223	44.6	0.4
106	0.10	159	26.5	5.3
033	0.14	615	123.0	1.3
053	0.19	110	*	0
151	0.31	99	33.0	0
882	0.35	176	44.0	0
154	0.36	*	*	*
337	0.38	203	25.4	0.5
571	0.49	61	20.3	0
578	0.49	435	87.0	0
399	0.52	428	107.0	0
552	0.54	178	*	0.5
105	0.65	194	32.3	0
018	0.71	280	93.3	0
230	0.79	97	32.3	1.0
338	0.85	489	54.3	0.4
919	0.89	399	*	1.5
160	0.96	173	43.3	0
712	1.06	69	23.0	0
513	1.32	103	*	0
934	1.35	181	25.6	1.6
002	1.41	196	39.2	0.5
026	1.56	81	16.2	2.3
956	1.65	162	27.0	0

* Data not available.

Appendix G (continued)

URCAFS I.D.	Impact	Bell	Rate	Behavior Commands
343	1.72	112	37.3	0
397	1.77	72	*	1.3
040	1.98	295	49.2	1.3
719	2.05	243	40.5	0.4
734	2.06	320	*	0.3
615	2.67	88	*	3.1
287	2.73	355	*	0
606	2.88	102	*	5.1

* Data not available.

Appendix H: Family Variables and Pro-Pref
Correlated With Preference
Presented In Ascending Order of Preference
(All Family Variables Expressed
As a Percerntage of Total Speaches)

URCAFS ID	Pref-erence	Pro-Pref	---Acknowledgement--- 1	2	3	4	BHCMDS	Relapos	Relanegs
606	-2.78	5.7	29.7	25.6	29.7	12.1	5.1	3.0	1.7
343	-2.28	2.3	26.0	44.8	17.7	11.5	0	3.5	0
40	-2.22	0.0	19.4	37.3	29.9	13.4	1.3	6.5	0.7
397	-1.95	1.7	29.7	40.6	18.8	10.9	1.3	2.6	1.3
513	-1.73	0.0	26.4	18.4	49.4	5.7	0	1.8	0.9
002	-1.52	12.5	16.5	29.1	37.8	16.5	0.5	3.0	1.0
018	-1.25	13.3	24.8	34.9	33.2	7.1	0	3.5	0.3
338	-1.19	3.8	33.2	25.4	26.7	14.7	0.4	2.7	1.0
712	-1.14	3.6	18.4	13.2	50.0	18.4	0	2.9	1.4
222	-1.02	0.0	31.6	36.8	17.5	14.0	0.4	2.2	4.3
552	-1.01	0.0	21.1	23.2	41.5	14.1	0.5	3.0	2.0
026	-0.95	20.5	26.2	35.1	27.0	21.6	2.3	1.1	1.1
934	-0.94	5.7	14.1	18.9	48.1	18.9	1.6	0.5	1.6
532	-0.94	0.0	18.5	16.3	48.9	16.3	0	1.3	0.7
615	-0.88	33.3	20.3	27.5	37.7	14.5	3.1	2.0	0
882	-0.76	10.7	15.6	22.1	52.5	9.8	0	2.7	0
578	-0.75	10.0	19.0	22.3	47.6	11.0	0	2.1	0
665	-0.69	0	35.0	23.6	32.9	8.4	0	3.8	0.6
366	-0.68	4.5	29.9	35.3	27.8	7.0	1.1	5.4	2.3
072	-0.52	4.5	24.7	33.3	19.5	22.4	4.7	4.7	0.9
323	-0.46	27.3	30.4	43.0	25.3	1.3	1.9	2.9	1.9
854	-0.38	10.0	30.3	18.3	34.9	16.5	1.6	2.1	0
234	-0.32	21.1	20.2	33.9	34.9	11.0	9.8	2.3	1.5
152	-0.29	11.8	21.6	14.8	54.5	9.1	0	1.8	0.7
953	-0.27	6.7	18.6	20.4	46.0	15.0	1.2	2.7	0.5
492	-0.12	20.0	28.1	31.3	28.1	12.5	0	2.6	0
632	-0.10	40.0	12.2	24.5	44.9	18.4	0	1.3	0
106	-0.10	36.4	21.3	19.4	35.2	24.1	5.3	1.2	0.6
207	-.09	55.6	40.6	35.0	19.8	4.6	0	2.2	1.3
602	-.07	27.8	*	*	*	*	*	*	*
218	-.07	22.2	34.9	30.2	30.7	4.2	0	3.5	0
336	-.06	13.6	20.7	34.5	39.7	5.2	0	3.8	0
605	-.04	35.3	19.4	9.4	48.3	22.8	0	1.5	1.2
203	+.01	21.4	20.6	35.9	33.8	9.6	0	0.8	0.5

* Data not available.

Appendix H (continued)

URCAFS ID	Preference	Pro-Pref	---Acknowledgement--- 1	2	3	4	BHCMDS	Relapos	Relanegs
331	.02	27.3	29.9	28.5	37.4	4.2	0	3.4	1.4
021	.05	44.4	24.8	33.1	25.6	16.5	2.6	4.6	0
358	.06	35.0	22.2	42.1	24.6	11.1	1.2	2.5	0
485	.07	40.0	17.0	33.7	29.0	20.3	0.3	4.8	1.4
496	.11	33.3	17.5	21.1	28.9	32.5	8.4	1.2	4.8
851	.11	45.5	34.1	42.3	20.3	3.3	0	2.5	0
540	0.12	25.0	20.4	21.4	45.6	12.6	0	4.7	0
461	0.15	50.0	29.2	28.7	34.9	7.2	0.4	2.2	0.7
151	0.16	31.8	25.4	9.5	57.1	7.9	0	0.9	2.8
978	0.18	15.4	11.3	19.9	47.5	21.3	1.1	1.1	1.1
488	0.22	11.1	31.9	26.5	29.2	72.4	0.8	1.6	0.8
921	0.27	50.0	19.5	15.9	50.0	14.6	0	3.3	0.8
448	0.27	0.0	*	*	*	*	*	*	*
884	0.28	61.5	18.6	20.3	55.9	5.1	0.9	2.8	0.9
013	0.28	100.0	27.2	34.2	25.3	13.3	0	2.5	0
014	0.32	88.9	25.5	38.7	14.6	21.2	5.6	1.1	1.1
614	0.35	71.4	18.0	14.8	49.2	18.0	0	2.3	1.1
027	0.35	41.7	23.0	29.0	31.0	17.5	4.0	2.0	3.9
748	0.36	50.0	25.2	29.0	33.3	12.4	1.5	1.9	0.4
029	0.35	44.4	39.5	33.8	21.5	5.1	0	1.0	0
333	0.37	60.0	*	*	*	*	*	*	*
265	0.37	66.7	28.2	34.5	27.8	9.6	4.6	2.1	0.4
919	0.37	56.0	16.3	22.5	53.2	8.0	1.5	1.0	0.5
155	0.38	50.0	12.0	15.0	49.4	23.6	0.3	0.9	3.4
599	0.46	75.0	24.1	44.3	21.5	10.1	0	3.5	0.9
010	0.50	69.2	20.3	34.6	28.3	21.8	2.7	10.2	0
294	0.56	65.0	27.3	28.2	31.2	13.2	0.5	1.9	1.4
881	0.56	50.1	13.9	16.0	61.4	8.6	1.2	2.0	1.6
213	0.58	90.9	23.6	33.1	29.8	13.5	0.4	4.5	0.8
341	0.65	43.5	26.0	44.8	17.7	11.5	0	2.3	0.9
223	0.68	84.6	34.8	31.1	30.0	4.1	0	2.3	0.4
959	0.69	40.0	22.0	23.0	42.0	13.0	0	0.6	2.5
705	0.70	94.1	30.2	31.8	33.3	4.7	0	2.0	0
391	0.75	92.3	34.4	35.6	27.0	3.1	0	6.4	0
527	0.77	91.7	26.9	36.5	28.8	7.7	0	0.8	0.8
680	0.83	77.8	26.6	10.1	60.6	2.8	0	1.3	0.6
053	0.84	56.5	27.4	40.5	23.8	8.3	0	3.5	0
593	0.84	85.7	32.4	29.5	30.0	8.2	0.7	3.7	0.4
931	0.92	85.0	26.3	13.2	50.0	10.5	0	3.4	0
221	0.96	96.0	32.1	29.4	32.5	7.0	0	4.5	0.4
726	1.05	72.0	22.5	25.5	31.4	20.6	1.4	0.7	1.4

* Data not available.

Appendix H (continued)

URCAFS ID	Preference	Pro-Pref	---Acknowledgement--- 1	2	3	4	BHCMDS	Relapos	Relanegs
205	1.06	73.7	41.5	43.9	12.2	2.4	1.9	1.9	1.9
033	1.09	81.8	30.9	37.3	26.2	5.6	1.3	2.9	0.6
399	1.11	86.2	31.7	33.7	30.3	4.3	0	4.2	0
576	1.17	85.7	30.8	20.5	33.3	15.4	0	6.5	0
571	1.27	87.5	23.3	37.2	23.3	16.3	0	4.9	0
154	1.31	100.0	*	*	*	*	*	*	*
160	1.70	100.0	16.4	24.6	51.6	7.4	0	1.1	0.6
230	1.71	79.5	18.6	41.9	30.2	9.3	1.0	2.9	1.0
337	1.74	95.7	51.0	23.4	19.3	6.2	0.5	3.3	0
287	1.81	74.1	31.1	17.4	40.4	11.1	0	0.6	1.4
105	2.06	84.6	28.6	29.2	38.1	4.2	0	3.4	0
956	2.12	91.3	23.7	36.6	31.2	8.6	0	3.7	0
719	2.27	95.7	23.7	33.7	33.9	8.5	0.4	4.4	0.4
734	2.53	97.1	13.7	22.7	36.3	27.4	0.3	1.6	0.3

* Data not available.

Appendix I: Peer Status Group and Preference Correlated With Pro-Pref

URCAFS ID	Pro-Pref	Peer Status Group	Preference
040	0	Rejected (R)	-2.22
513	0	(R)	-1.73
222	0	(R)	-1.02
552	0	(R)	-1.01
532	0	(R)	-0.94
665	0	(R)	-0.69
448	0	Neglected (N)	0.27
397	1.7	(R)	-1.95
343	2.3	(R)	-2.28
712	3.6	(R)	-1.14
338	3.8	(R)	-1.19
366	4.5	Average (A)	-0.68
072	4.5	(A)	-0.52
606	5.7	(R)	-2.78
934	5.7	(R)	-0.94
953	6.7	(A)	-0.27
578	10.0	(R)	-0.75
854	10.0	(N)	-0.38
882	10.7	(R)	-0.76
488	11.1	(N)	0.22
152	11.8	(A)	-0.29
002	12.5	(R)	-1.52
018	13.3	(R)	-1.25
336	13.6	(A)	-0.60
978	15.4	(N)	0.18
492	20.0	(A)	-0.12
026	20.5	(R)	-0.95
234	21.1	(A)	-0.31
203	21.4	(A)	+0.01
218	22.2	(N)	-0.07
540	25.0	(N)	+0.12
323	27.3	(A)	-0.46
331	27.3	(A)	+0.02
602	27.8	(A)	-0.07
151	31.8	(A)	+0.16
615	33.3	Controversial (C)	-0.88
496	33.3	(N)	+0.11
358	35.0	(A)	+0.06
605	35.3	(A)	-0.04
106	36.4	(A)	-0.10
632	40.0	(N)	-0.10
485	40.0	(N)	+0.70
959	40.0	(N)	+0.69
027	41.7	(N)	+0.35
341	43.5	(A)	+0.65

Appendix I (continued)

URCAFS ID	Pro-Pref	Peer Status Group	Preference
029	44.4	(N)	+0.35
021	44.4	(A)	+0.05
851	45.5	(N)	+0.11
461	50.0	(N)	+0.15
921	50.0	(A)	+0.27
748	50.0	(N)	+0.36
155	50.0	(N)	+0.38
946	50.0	(A)	+0.46
881	50.1	(N)	+0.56
207	55.6	(A)	-0.09
919	56.0	(A)	+0.37
053	56.5	(A)	+0.84
333	60.0	(N)	+0.37
884	61.5	(N)	+0.28
294	65.0	(A)	+0.56
265	66.7	(N)	+0.37
010	69.2	(A)	+0.50
614	71.4	(N)	+0.35
726	72.0	Popular (P)	+1.05
205	73.7	(A)	+1.06
287	74.1	(C)	+1.81
599	75.0	(N)	+0.46
680	77.8	(N)	+0.83
230	79.5	(P)	+1.71
033	81.8	(P)	+1.09
223	84.6	(A)	+0.68
105	84.6	(P)	+2.06
931	85.0	(P)	+0.92
593	85.7	(N)	+0.84
576	85.7	(A)	+1.17
399	86.2	(P)	+1.11
571	87.5	(P)	+1.27
014	88.9	(A)	+0.32
213	90.0	(A)	+0.58
527	91.7	(A)	+0.77
391	92.3	(A)	+0.75
705	94.1	(A)	+0.70
337	95.7	(P)	+1.74
719	95.7	(P)	+2.27
221	96.0	(A)	+0.96
734	97.1	(P)	+2.53
013	100.0	(N)	+0.28
154	100.0	(P)	+1.31
160	100.0	(P)	+1.70

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