BIRTH ORDER AND MALADAPTIVE BEHAVIOR
IN SCHOOL-AGED CHILDREN

DISSERTATION

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This study investigated the relationship between maladaptive behavior, defined as referral to counseling, and the Adlerian construct of birth order. The birth order variables examined were ordinal position, sex of subject, family density, family size, socio-economic status, intactness of family, age of mother, and sex of sibling.

The subjects in this study were 217 school-aged children with academic and/or behavior problems who were referred to an interdisciplinary guidance center. The subjects were assigned to counseling or no-counseling groups on the basis of an interdisciplinary evaluation and staffing, which included an extensive battery of academic and psychological tests.

Discriminant function analysis was employed to determine whether or not a set or subset of the birth order variables could classify the subjects into counseling or no-counseling groups. No significant relationship was found between the set or subset of birth order predictors and assignment to counseling or no-counseling groups; however, the set of predictors did classify the counseling group beyond simple chance.
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BIRTH ORDER AND MALADAPTIVE BEHAVIOR
IN SCHOOL-AGED CHILDREN

Alfred Adler made a primary contribution to psychology by pointing out the effects of birth order on personality (Mosak, 1969). In his theory, Adler pointed out the high probabilities that children born in certain birth order positions would demonstrate specific personality characteristics. However, Adler believed that these personality characteristics were affected by such factors as being the only child of a sex among opposite sex siblings, being sickly or retarded, being born after the death of a predecessor, or being born after a long period of time between siblings. Therefore, Adler's construct of birth order was not one of ordinal position alone, but one of psychological position within the family constellation (Ansbacher & Ansbacher, 1956; Dreikurs, 1968; Adler, 1928).

Specific types of both adaptive and maladaptive behavior are associated with various birth order positions. The first child is most often spoiled by parental attention, and then dethroned by a younger sibling. The general adaptive behavior of the first-born is to regain the first position of parental attention through achievement and adaption that pleases those in authority. When adjustment takes a maladaptive form, the first-born seeks attention in negative ways, such as acting out behavior, seeking power over others, or becoming overly dependent (Adler, 1928, 1930, 1931; Ansbacher & Ansbacher, 1956).
Second-born children adaptively seek to excel and gain parental attention in areas they perceive to be weaknesses in the first-born. Maladaptive behavior may take the form of rebellion (Adler, 1928, 1930, 1931; Ansbacher & Ansbacher, 1956). The youngest child adaptively learns to seek parental attention through charm and cuteness. Maladaptive behavior of the youngest is generally helpless, irresponsible, and related to keeping others in the child's service (Adler, 1928, 1930, 1931; Ansbacher & Ansbacher, 1956; Dreikurs, 1968).

The implications of the effect of birth order on maladaptive behavior in children were first expressed by Adler (1931), when he wrote that due to their sense of deprivation of affection and loss of status after the arrival of the second child, first-borns were most often seen in guidance clinics. Adler's birth order construct has led to over 766 studies of birth order since 1963 (Miley, 1969; Vockell, Felker, & Miley, 1973; Forer, 1977). These studies have failed to consistently support the theory that birth order is related to personality characteristics (Havassey-DeAvila, 1971), and only limited research has investigated the relationship between birth order and maladaptive behavior in school-aged children (Miley, 1969; Vockell, Felker, & Miley, 1973; Forer, 1977). Studies have, however, clearly demonstrated that first-born males are more likely to be referred to guidance clinics than their second-born, last-born, or female siblings (Rosenow, 1930; Peskin, Giora, & Kaffman, 1974).

Criticisms of previous birth order studies have pointed to researchers' failure to control for the important variables related to birth order, as proposed by Adler. Previous studies have looked
at birth order as if it were merely ordinal position, omitting Adler's concern for the various aspects of the family atmosphere. The variables generally neglected in these studies are sex of subjects, family density, age of subject, sex of siblings, family size, socio-economic status, intactness of family, and age of mother (Schooler, 1972; Gandy, 1974; Manaster, 1977).

Manaster (1977), in his review of birth order studies, stated:

Adler noted or implied concerns regarding family size, family density, and sex of siblings in reference to birth order, and birth order as a factor in family constellation. It is apparent that the time has come to integrate his concerns into contemporary birth order research. Birth order and family constellation information may be extremely useful. Empirical justification for their use is still needed. (p. 8)

This study was designed to include aspects of Adler's psychological construct of birth order that often have been omitted in other studies, and to focus on the relationship between birth order and the referral to counseling of school-aged children with maladaptive behavior.

Synthesis of Literature

Birth order is one of the fundamental concepts of Adler's Individual Psychology. Adler theorized that a different psychological situation existed for each child in a family due to the change in the family constellation upon the birth of each child. Birth order is more than ordinal position; it is a psychological position within the family, dependent on the results of the child's "attempts to adapt himself to his particular circumstances" (Adler, 1931, p. 144). Whether the child behaves adaptively or maladaptively depends on the family environment and the way in which the child chooses to compete with siblings for
significance. If parents maintain an atmosphere in which cooperation, equality, and affection are expressed, the child is more likely to behave adaptively. On the other hand, the child likely will behave maladaptively if the child perceives an atmosphere of emotional or physical deprivation (Adler, 1928, 1930, 1931; Ansbacher & Ansbacher, 1956).

Adaptive or maladaptive behavior is also dependent on the ability of each child to compete with other siblings for parental attention. The child's perception of being able to compete with siblings may be affected by such factors as being youngest, smallest, less physically or intellectually capable, or being convinced by pampering parents that one is helpless. A child first tries to excel in constructive ways and in areas perceived as weaknesses or underdeveloped in siblings. If the child is unable to compete with siblings, or fails to gain a position of significance using positive behaviors, the child will turn to maladaptive behavior to gain significance (Adler, 1928, 1930, 1931; Ansbacher & Ansbacher, 1956; Dreikurs, 1968, 1972).

Motivated by the belief that not enough formal attention was being paid to the influence of various sibling positions on the individual child, Koch (1955) studied attitudes and behaviors of 384 five- and six-year-old children from urban, intact, two-child families. One half of the group was male and one half of the group was female. In the first part of her extensive study, she found first-born females with a brother two years or four-to-six years younger to be significantly (p<.05) more friendly, affectionate, and obedient than children of any other birth
order or sex. She found second-borns to be more responsive to adult approval than first-borns, when the siblings were two to four years apart in age. Koch (1955) also found obedience, resistance, and affection toward adults varied significantly, according to the child's birth order, sex, sex of sibling, and age spacing.

As a continuation of the larger study, Koch (1956) examined teacher ratings of personality traits in relation to ordinal position, sex of sibling, and age differences. There were several significant (p < .05) findings in the study. First-borns at close age spacings recovered less quickly from anger or emotional upset than second-borns. Second-borns were less hesitant to express their anger and to attack directly than were first-borns, regardless of age spacing or sex. First-born males showed more impulse control, while second-born males exhibited more nervous habits. First-born females showed more nervous habits than second-born females. First-born children from opposite-sex sibling pairs were indicated as healthier than those from same-sex pairs, while this pattern was reversed in second-borns of either sex. The age spacing of two to four years was found to be more stimulating and/or stressful for first-born males, especially if the sibling was a sister.

The relationship of maladaptive behavior to birth order in kibbutz and non-kibbutz families was investigated by Peskin, Giora, & Kaffman (1974). Two hundred five children from two-sibling, intact families referred to guidance clinics constituted the sample. Significant findings (p < .05) indicated an over-representation of males from same-sex
pairs in the urban clinics and males from opposite-sex pairs in the rural clinics. Males significantly ($p<.01$) outnumbered females in the overall sample. In both urban and rural clinics, first-born male children with opposite-sex siblings were more often referred to the clinics.

Wishing to investigate the relationships among birth order, sex, and children's behavior problems, Lahey, Hammer, Crumrine, and Forehand (1980) designed two experiments. In experiment one, the subjects were 195 males and 130 females from two-child families, ages two to 17, who were clients at the University of Georgia Psychology Clinic from 1970 to 1980. Mentally retarded children and those referred exclusively for intellectual testing were excluded from the study. They found a significantly high ($p<.01$) referral rate for first-born males.

In order to provide data complementary to experiment one, experiment two used 83 kindergarten subjects from two-child families in which there was a sibling three or less years younger/older than the subject. The preschool teachers filled out standardized rating forms on the behaviors of each child so that the relationship of behavior problems to birth order and sex could be examined. Teacher ratings were taken to provide information independent of parental sensitivity. The significant findings ($p<.05$) supported the previous experiment that first-born males from two-child families had relatively more behavior problems than other birth order-sex combinations.

Antisocial behavior of children, as related to first-borns and marital discord, was examined by Whitehead (1979). The sample consisted
of 2,275 first-born, seven-year-old children of both sexes. Significant findings indicated that boys whose parents had either divorced or separated, expressed hostility, destructive behavior, or pervasive sadness, while girls were sensitive, high strung, or emotionally maladjusted.

Gallagher and Cowen (1977) studied children in kindergarten through third grade in 17 urban and suburban schools, who were referred by their teachers as experiencing educational and/or behavioral problems. Middle children consistently had lower acting out scores than did all other birth orders. Gallagher and Cowen (1977) suggested that omitting family size as a variable may have confounded their results, as the number of middle children increases with family size.

The relationship between birth order and adjustment, as defined by the California Test of Personality, was investigated by Lessing and Oberlander (1967). The sample consisted of 855 white, school-aged children from different socio-economic status. A significantly higher adjustment score was found for first-borns. Lessing and Oberlander (1972) replicated their study using two samples of children from suburban schools. Each sample was given a different battery of personality adjustment tests. No significant birth order effects were found.

The relationship between birth order, family size, and psychological adjustment was investigated by Touliatos and Lindholm (1980). The sample consisted of 2,991 native-born white children in kindergarten through eighth grade, who were living in intact families and enrolled in regular school classes. Two hundred six classroom teachers were
asked to provide demographic data and ratings on the Behavior Problem Checklist. Although no significant findings were found in the general analysis, conduct problems and socialized delinquency were found to be related to birth order and family size in specific analysis. A pattern emerged in the findings in which younger children had the most problems. Although this pattern held true for families with two siblings, it did not hold true for those families in which there was only one child or three or more siblings. In families of three or more siblings, middle children had the fewest problems. When the levels of family size were considered separately, socialized delinquency remained significant. Middle-born children with four siblings experienced more maladaptive behavior than other middle-borns, while middle-borns with three or fewer siblings and those with five or more siblings did not seem to vary. The findings were not significant for older or younger children. Touliatos and Lindholm (1980) concluded that neither birth order nor family size was significant in effecting children's psychological adjustment even when grade, sex, and social class were taken into account. Their findings suggest that family structure variables may lack the robustness and consistency that research has indicated.

Berg, Butler, and McGuire (1972) probed the relationship between birth order and mother's age in 100 adolescent school phobics. Their significant findings indicated that school phobics were late birth order children from families of three or more children. The mother's age was significantly (p<.05) higher in the school phobic group than in the non-phobic control group.
Birth order and the number of child rearing problems reported by parents in 598 clinical cases were studied by Shrader and Leventhal (1968). Using the Moody Problem Checklist format, a problem checklist was devised. Two hundred thirty seven problems typical of boys and girls were listed. Significant findings (p<.05) supported the hypothesis that first-borns from two-child families would have more problems than their siblings. No significant relationship was found between sex of subject and number of problems reported, although the mother's age was a factor in the number of child behavior problems reported. Because younger mothers reported significantly more child rearing problems, the researchers suggested that young parents may have more anxiety about their children, expect too much of them, and treat their children with inconsistent, immoderate, and excessive interference that leads to maladaptive behavior.

In an investigation of sibling set configurations in which at least one child was an identified patient, Fishbein (1981) studied 488 families seeking treatment at the Philadelphia Child Guidance Clinic. The relationship between sex and birth order of sibling set, number of parents in the primary family unit, and family dysfunction were assessed in two- and three-child families. The significant findings indicated that within a given sibling set, the identified patient was most likely to be first born and/or male. The sibling set with the lowest degree of family dysfunction was the all-female set. The sibling set with the highest degree of family dysfunction in both two- and three-child families was a sibling set in which a male was older than a female.
Marjoribanks (1976) examined the extent that relationships between sibling size and cognitive and affective characteristics were changed by family environments. His data was collected over a four-year period as part of a national survey of elementary school children in England. The final sample included 396 females and 383 males. To define family environment, Marjoribanks (1976) took some 40 separate indices from a national sociological/educational survey to construct a measure of cumulative family environment. After factor analysis, the indices included father's occupation, father's education, family income, crowding in the home, amenities in the home, parent's aspirations for children, literacy of home, parental interest and support of school, initiative and responsibility taken by parents toward education, belief in the value of school, and interest in school work. Using the sum of the scores on these indices, a family environment score was obtained. Cognitive abilities and affective characteristics scores were taken from the national test survey. The data indicated that changes in behavior scores were related to changes in size of sibling group; in other words, the higher acting out behavior, the larger the sibling size was likely to be. However, this phenomena did not hold true if sibling size and environmental level both increased proportionately.

Criticisms of birth order studies have been numerous. In a summary of the findings of birth order research done before 1971, Havassey DeAvila (1971) wrote, "the characteristic which seems to best typify the literature is inconsistency" (p. 233). Kushnir (1978) pointed out that birth order studies lack a consistent categorization
of birth order, are post hoc speculation, tend to confuse causes with intervening variables and effects, are misleading and unconvincing, and are concerned with first-born subjects. Gandy (1974) stated that most studies have failed to control for sex of subject, sex of sibling, family density, family size, socio-economic status, and intactness of family. Schooler (1972) suggested strengthening birth order studies by considering family density, sex of siblings, family size, socio-economic status, intactness of family, and sex of subject in addition to ordinal position. The mother's age is also a critical variable that has been omitted from the studies (Shrader & Leventhal, 1968; Berg, et al., 1972).

Adams (1972) summarized the problems found in previous birth order studies under three headings: demographic and cohort difficulties, controls and specifications, and early socialization theories. He suggested that a way to clarify the actual effect of both the demographic effects and cohort issues was to have a sample in which no more children were added to the family. In this way the over-representation of first-borns due to population trends and generalization from cohort of "same event" situations could be overcome. In the area of controls and specifications, Adams (1972) suggested that birth order studies should include variables such as sex, socio-economic status, number of siblings, composition of sibling relationships by sex, and age spacing/family density. He pointed out that in early socialization theory much of the literature depended on the idea that the first-born was more likely to have a time as an only child, but he contended that this was also a position shared by the youngest child. When the other children leave home, the youngest
is very likely to experience the parents as an only child. In addition, the youngest child may experience the family with one parent missing through death or divorce. Therefore, it was Adams' (1972) suggestion that families which do not have both parents should be considered in birth order studies.

Despite the plethora of research on birth order and maladaptive behavior, the data have not consistently demonstrated that maladaptive behavior occurs at either end of the birth order dimension (Shrader & Leventhal, 1968). Adams (1972) stated that the failure to consistently demonstrate that maladaptive behavior occurs at specific birth orders "may be so, but the current state of these researches is such as to call not for abandonment but for refinement and further testing" (p. 418). The technical, statistical, and definitional problems that have plagued previous studies can be managed, and now is the time to integrate Adler's concerns of birth order into contemporary research, according to Manaster (1977).

In summary, the literature indicates that failure to attain consistent results in birth order research, or to find a consistent relationship of birth order to maladaptive behavior, appears to be influenced by the omission of these variables: age of subject, sex of subject, family density, family size, socio-economic status, intactness of family, age of mother, and sex of sibling in addition to ordinal position. Through the inclusion of these variables, this study more closely approximated what Adler termed psychological birth order.
Hypothesis

To carry out the purpose of this study, which is descriptive ex post facto research, the following hypothesis was tested:

There is a significant relationship between assignment to counseling or no-counseling groups and the independent variables of ordinal position of subject, age of subject, sex of subject, family density, family size, socio-economic status, intactness of family, age of mother and sex of sibling, such that (a) the set of variables can predict classification, or (b) a subset thereof, can predict classification.

Method

Subjects.—The subjects for this study were 217 school-aged children with academic and/or behavior problems, who were referred to and evaluated by the staff of a North Texas area interdisciplinary center between 1975 and 1980. Two hundred thirty eight children were evaluated, but 21 had incomplete or missing data and were eliminated from the study. The subjects were identified through the center's master evaluation list, which consisted of the names of the children and a summary of remedial recommendations for all clients receiving a complete interdisciplinary assessment.

Subjects for this study were accepted on the basis of the following criteria.

1. The subjects had to be between the ages of 5.0 and 18.0 years of age.
2. The subjects had to have received an evaluation from each of the three disciplines represented in the center: speech, language, and hearing; reading; and counseling.

3. The subjects had to be evaluated between the years 1975 and 1980.

The sample is unique in that each child was screened by specialists in each of the three disciplines and an interdisciplinary team staffing before recommendations for specific remediation were made. The counseling component of the center espoused an Adlerian orientation toward child/family assessment and counseling.

The geographical area from which the clinical population was drawn included both rural and urban areas made up of farms, ranches, and small communities. The population was from a wide range of social, cultural, socio-economic status and ethnic backgrounds (Smith & Wilborn, 1977).

**Procedures.**-- Permission was obtained from the director (Appendix A) to examine the records of the children evaluated at the center from 1975 through 1980. On the basis of the recommendations from the interdisciplinary staffing, the subjects were placed in either the counseling group (Group I) or in the no-counseling group (Group II). The records of the individual children in each group were then examined. From the Background Information form (Appendix B) the age, sex, ordinal position of the subject, family size, intactness of the family, age of the mother and sex of siblings were obtained.

The children were designated either first-born, middle-born, or last born. Twins were classified according to their position in relation
to other children in the family, as if theirs were a single birth. Only children were classified as first-born. All children that were not first- or last-born were designated as middle-born.

The family density figure was generated by subtracting the age of the youngest child listed as a member of the subject's family from the age of the oldest child listed as a member of the subject's family. The resultant numeral was divided by the total number of children listed as members of the family. This formula, which is presented below, resulted in a decimal that represented the number of children born per year.

\[
\frac{\text{Oldest child's age} - \text{youngest child's age}}{\text{Total number of children in family}} = \text{Number of children per year}
\]

The socio-economic status of the subjects was determined from the occupation of the head of the household, using the North Watt Social Status Scale (Reiss, 1961; Blau & Duncan, 1967). If the parents or legal guardians of the subject were separated or divorced, the socio-economic status was based on the job title of the parent who currently had custody of the child. In cases where both parents were employed and living together, the head of the household was considered to be the father.

Family size data was taken from the Background Information form. Family size was determined by including parent(s) and child(ren) who were listed as part of the family.

Three categories were used to describe the structure of the family from which the client came. An intact family was one with both natural parents living in the home. Not intact families were those in which the
child was living with only one parent. Blended families were those in which a step-parent or a step-sibling was present.

The mother's age was obtained from the Background Information form. The mother's age was her age at the time of the referral of the child to the center.

The sex of the siblings was reported in four categories, which reflect both age spacing and sex of siblings. The sibling relationships described were: sibling of the same sex less than two years older/younger than the subject, sibling of the other sex less than two years older/younger, sibling more than two years older/younger than the subject, and no sibling. Several subjects may have had more than one sibling within a classification; however, only one sibling was recorded—the sibling closest to the subject's age. When a subject had several siblings, only one sibling closest to the subject was recorded.

Instrumentation.—The counseling battery administered to each child referred to the center from 1975 through 1980 included: Wechsler Intelligence Scale for Children-Revised, Visual Aural Digit Span Test, Motor-Free Visual Perception Test, Bender Visual Motor Gestalt Test, House-Tree-Person, School Apperception Method, and the Adlerian Parent/Child Interview. The Wechsler Preschool and Primary Scale of Intelligence and the Wechsler Adult Intelligence Scale were substituted for the Wechsler Intelligence Scale for Children-Revised for five to six year olds and for subjects over 16, respectively. These tests provided the information upon which recommendations for remediation were made.
The Wechsler Intelligence Scale for Children-Revised (WISC-R) measures general intelligence in children 6 to 16 years of age. The WISC-R is organized into six verbal subtests, which through proration yield a verbal IQ, and six performance subtests, which through proration yield a performance IQ. The verbal and performance IQs may be combined to yield a full scale IQ. The deviation IQ concept used in the WISC-R shows how an individual's IQ score compares with subjects of a similar age through use of norm tables (Stellern, Vasa, & Little, 1976). The deviation IQ has a mean of 100 and a SD of 15. The norm sample was stratified on the basis of the 1970 U.S. census with respect to geographic region, urban-rural residence, occupation of the head of the household, and race (white/nonwhite). Average split-half reliabilities for verbal, performance, and full scale IQs were .93, .90, and .96, respectively. No discussion of the validity is included in the WISC-R manual (Wechsler, 1974). However, the WISC-R has been reported to correlate with the 1972 Stanford Binet IQs for full scale in a homogeneous age group at .73 (Anastasi, 1976). A number of monographs and books have been published on the WISC and WISC-R, which summarize the results of research on the tests (Glasser & Zimmerman, 1967; Hewitt & Massey, 1969; Searls, 1975).

The Wechsler Preschool and Primary Scale of Intelligence (WPPSI) measures general intelligence of children, ages four to six and a half years old. The scale has 11 subtests, but only 10 are used in providing the IQ score. Eight of the tests are extensions and/or adaptations of the WISC subtests. Three subtests were especially constructed to replace WISC subtests, because the WISC subtests were unsuitable for the age
grouping. The raw scores are converted to normalized standard scores with a mean of 10 and a SD of three for each quarter-year group. The sum of the scaled scores on the Verbal, Performance, and Full Scale is converted into deviation IQ with a mean of 100 and a SD of 15. The WPPSI organization and scoring is similar to the WISC-R. The reported reliabilities of the Full Scale IQ varies between .92 and .94, the Verbal IQ varies between .87 and .90, and the Performance IQ varies between .84 and .91. Validity studies report a correlation of .75 with the Stanford-Binet for children five to six years old (Anastasi, 1976).

The Wechsler Adult Intelligence Scale (WAIS) measures general intelligence for males and females 16 to 64 years of age. The WAIS has 11 subtests with a mean of 10 and a SD of three. The Verbal, Performance, and Full Scale IQs can be expressed as deviation IQs with a mean of 100 and a SD of 15. The IQs are found with reference to the individual's standing in comparison with reference to the group. In a reliability study using three age groups of 18 to 19, 23 to 34, and 45 to 54, reliability coefficients of .97 were found for Full Scale IQ, .96 for Verbal IQ, and .93 and .94 for Performance IQ. In validity studies with unselected adolescents and adult groups, correlations with clustering around .80 have been found between the WAIS and the Stanford-Binet (Anastasi, 1976).

The Motor-Free Visual Perception Test (MVPT) (Colarusso & Hamill, 1972) is a test of visual perception that avoids motor involvement and is practical for screening diagnostic, and research purposes. The 36 items are presented visually, and the subject indicates the correct answer by pointing. The tally of correct responses indicates the raw score, which can be converted through the use of the norm tables to a
perceptual age and perceptual quotient. Using the test-retest method, the Pearson-product moment coefficient was found to be .81. Split-half reliability was found to be .88. An F significant at the .01 level was found in tests of three types of construct validity: age differentiation, correlations with a similar test, and internal consistency (Colarusso and Hamill, 1972).

The Visual Aural Digit Span Test (VADS) (Koppitz, 1977) consists of four subtests that require repeating orally presented digits, orally repeating digits from visual memory, writing orally presented digits, and writing digits from visual memory. The test measures the subject's ability in oral, aural, visual, and written short-term memory and intra- and inter-modalities. A score from zero to seven, designating the number of digits repeated or reproduced, is given on each subtest. A summation of the correct digits in all four categories, when compared to the norm table, provides an age range equivalent. The individual scores on each subtest can be compared to age range norms and be reported in percentile scores. Using the test-retest method, reliability correlations ranging from .72 to .92 were found for individual subtests of the VADS. When correlated to the WISC, the VADS was found to be valid in determining learning disabled children in the areas of auditory processing, verbal and written recall, and short-term memory. Correlations between the VADS subtest and the WISC subtests of Comprehension, Similarities, Picture Completion, Picture Arrangement, Block Design, and Object Assembly range from .28 to .69, significant at or above the .05 level (Koppitz, 1977).
The Bender Visual Motor Gestalt Test (Bender, 1946) consists of nine designs, each on a separate card, presented one at a time. The examinee reproduces each design using a pencil and paper, while looking at the card. The Koppitz (1963) scoring system provides a developmental score of visual motor integration. Using the Koppitz scoring system, scorer reliability was found to be statistically significant at the .001 level with correlations ranging from .88 to .96. Although validity of the Bender has not been established, it has come into widespread use as a clinical instrument to indicate maturation, intelligence, psychological disturbance, and brain injury (Pascal & Sutton, 1951). Correlations ranging from .48 to .79 have been found between the Bender scores and WISC or Stanford Binet scores for intellectual functioning (Koppitz, 1946, 1963). In addition, Koppitz (1963) presents 10 indicators of emotional disturbance in children that can be ascertained from the drawings.

The House-Tree-Person (HTP), School Apperception Method (SAM), and the Adlerian Parent/Child Interview are not truly tests, but rather projective and interview instruments. Because of the subjective nature of these instruments, statistical reliability and validity has not been established. As Anastasi (1968) points out, these instruments are not less useful in assessment when used in conjunction with other statistically dependable tests, and are valuable in providing "leads for further exploration or hypothesis about the individual for subsequent verification" (p. 519).
The House-Tree-Person (HTP) (Buck, 1947) is administered by asking the subject to draw a house, a tree, and a person. The drawings of the children in this study were analyzed according to the HTP catalog (Jolles, 1964). The HTP is used in conjunction with other information, as an observational technique. The HTP has a notable volume of research supporting its clinical usefulness as summarized by Bielauskas (1965) and Hammer (1964).

The School Apperception Method (SAM) (Solomon & Starr, 1968) is a projective technique closely related to the Thematic Apperception Test (TAT) (Murray, 1938), but all pictures are of school-related nature. The SAM consists of 22 drawings depicting children and school personnel in a wide range of interactions. Twelve of the pictures are suggested for standard administration. The manual provides a standard administration technique and interpretation guideline. The authors state the SAM was developed so that interpretation could be from any theoretical framework (Solomon & Starr, 1968). In the center that used this study, the Adlerian theoretical framework was used for interpretation. Because of the subjective nature of the test, no statistical reliability or validity has been established (Buros, 1972).

The Adlerian Parent/Child Interview (Appendices C and D) consists of two types of information—the individual's and parent's answers to a family constellation questionnaire (Dreikurs, 1954; Shulman, 1962) and the subject's early recollections (Dreikurs, 1954; Mosak, 1962). The information gathered from both the subject and the parent helps the counselor to understand the client, the family atmosphere, and the family interaction, and also helps the counselor to formulate a treatment
hypothesis. Norms, reliability, and validity data have not been estab-
lished, although the interview form has proven to be an adequate clinical
instrument in practice (Gushurst, 1971).

The North-Hatt Social Status Scale (Reiss, 1961) was developed by
constructing a list of occupations obtained from census reports. The
occupations were categorized into major occupational groups and assigned
a number ranging from zero to 96. The occupational numbers were deter-
mined from ratings given each occupation by the 2,920 raters on the basis
of perceived social status and education (Reiss, 1961; Blau & Duncan,
1967). Occupations with numbers above 82 are classified as upper class,
occupations with numbers between 52 and 82 are classified as middle
class, and occupations with numbers below 52 are classified as lower
class (Reiss, 1961).

The Background Information form (Appendix B) was designed by the
project staff of the Pupil Appraisal Center, North Texas State University,
Denton, Texas. The School Assessment and Referral for Individual Study
forms (Appendix E) and Teacher Observations of Child's Behavior form
(Appendix F) were designed by doctoral students and faculty at the School
Counseling Center, University of Missouri at Columbia. The forms collect
a variety of demographic information, behavioral observations, medical
information, and facts regarding past experiences or lack of experience
in counseling. Information collected from these forms has been used
in previous research related to the children referred to the inter-
disciplinary center (Wilborn & Smith, 1974; Smith & Wilborn, 1977).
Results

The hypothesis for this study stated that there is a significant relationship between assignment to counseling or no-counseling groups and the independent variables of ordinal position of subject, age of subject, sex of subject, family density, family size, socio-economic status, intactness of family, age of mother, and sex of sibling, such that (a) the set of variables can predict classification, or (b) a subset of variables thereof can predict classification. The Statistical Package for the Social Sciences (SPSS) (Nie, Hull, Jenkins, Steinbrenner, & Bent, 1975) discriminant function analysis program was used to determine whether differences in counseling and no-counseling groups were statistically significant. The Wilks' lambda test of significance and the univariate F-ratio were used to determine the discriminating power that existed in the variables being employed. The variables were analyzed individually and then as a set of predictors.

A first step was to describe the two groups along the dimensions of the predictor variables. Table 1 (p. 24) presents a summary of the ages of the subjects in this study.

Table 2 (p. 24) indicates the distribution of males and females in each group.

The males in Group I outnumber the females two to one. In Group II, the no-counseling group, the males outnumber the females three to one.

The number and percent of birth orders of the subjects are presented in Table 3 (p. 25).
Table 1
Means, Standard Deviations and Ranges of Subjects' Ages

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>S.D.</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group I</td>
<td>9.0</td>
<td>2.6</td>
<td>5.0 to 17.3</td>
</tr>
<tr>
<td>Group II</td>
<td>8.9</td>
<td>2.5</td>
<td>5.0 to 14.11</td>
</tr>
<tr>
<td>Total</td>
<td>9.0</td>
<td>2.6</td>
<td>5.0 to 17.3</td>
</tr>
</tbody>
</table>

Table 2
Number and Percent of Male and Female Subjects

<table>
<thead>
<tr>
<th></th>
<th>Males</th>
<th>Females</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number</td>
<td>Percent</td>
</tr>
<tr>
<td>Group I</td>
<td>141</td>
<td>66.3</td>
</tr>
<tr>
<td>Group II</td>
<td>22</td>
<td>74.0</td>
</tr>
<tr>
<td>Total</td>
<td>163</td>
<td>67.2</td>
</tr>
</tbody>
</table>
Table 3
Number and Percent of Birth Orders of Subjects

<table>
<thead>
<tr>
<th></th>
<th>First Born</th>
<th></th>
<th>Middle Born</th>
<th></th>
<th>Last Born</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number</td>
<td>Percent</td>
<td>Number</td>
<td>Percent</td>
<td>Number</td>
<td>Percent</td>
</tr>
<tr>
<td>Group I</td>
<td>108</td>
<td>52.0</td>
<td>41</td>
<td>18.9</td>
<td>57</td>
<td>29.0</td>
</tr>
<tr>
<td>Group II</td>
<td>14</td>
<td>51.8</td>
<td>7</td>
<td>18.5</td>
<td>8</td>
<td>26.6</td>
</tr>
<tr>
<td>Total</td>
<td>122</td>
<td>52.0</td>
<td>48</td>
<td>19.0</td>
<td>65</td>
<td>29.0</td>
</tr>
</tbody>
</table>

Table 4
Family Density of Subjects Reported in Means and Standard Deviations

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>S.D.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group I</td>
<td>.58</td>
<td>.44</td>
</tr>
<tr>
<td>Group II</td>
<td>.74</td>
<td>.63</td>
</tr>
<tr>
<td>Total</td>
<td>.60</td>
<td>.47</td>
</tr>
</tbody>
</table>
Family density is summarized in Table 4 (p. 25). The decimal reflects the average number of children born per year; therefore, the smaller the number, the less dense the family.

The socio-economic status of the subjects was determined by the occupation of the head of the household, using the North-Hatt Social Status Scale (Reiss, 1961). Occupations with numbers above 82 are classified as upper class, occupations with numbers between 52 and 82 are classified as middle class, and occupations with numbers below 52 are classified as lower class. Table 5 summarizes the socio-economic status of the two groups.

Table 5
Means, Standard Deviations and Ranges of the Socio-Economic Status on the North-Hatt Social Status Scale

<table>
<thead>
<tr>
<th></th>
<th>Means</th>
<th>S.D.</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group I</td>
<td>55.07</td>
<td>22.13</td>
<td>0 to 93</td>
</tr>
<tr>
<td>Group II</td>
<td>56.19</td>
<td>20.40</td>
<td>19 to 93</td>
</tr>
<tr>
<td>Total</td>
<td>55.21</td>
<td>21.89</td>
<td>0 to 93</td>
</tr>
</tbody>
</table>

Subjects in both groups were found to be middle class.

Family size was determined by including parent(s) and child(ren) who were listed as part of the family on the Background Information form. Family size information is indicated in Table 6 (p. 27).
Table 6
Means and Standard Deviations
of the Family Size of the Subjects

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>S.D.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group I</td>
<td>4.8</td>
<td>4.4</td>
</tr>
<tr>
<td>Group II</td>
<td>4.4</td>
<td>1.4</td>
</tr>
<tr>
<td>Total</td>
<td>4.7</td>
<td>4.2</td>
</tr>
</tbody>
</table>

Table 7
Number and Percent of Intact, Not Intact, and Blended Families
Represented in the Sample

<table>
<thead>
<tr>
<th></th>
<th>Intact</th>
<th>Not Intact</th>
<th>Blended</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number</td>
<td>Percent</td>
<td>Number</td>
</tr>
<tr>
<td>Group I</td>
<td>150</td>
<td>74.7</td>
<td>28</td>
</tr>
<tr>
<td>Group II</td>
<td>20</td>
<td>70.4</td>
<td>3</td>
</tr>
<tr>
<td>Total</td>
<td>170</td>
<td>74.1</td>
<td>31</td>
</tr>
</tbody>
</table>
A description of the subjects' families is shown in Table 7 (p. 27). Intact families had both natural parents in the home, not intact families had only one parent, and blended families had either a step-parent or step-sibling in the home.

Table 8 shows the means, standard deviations, and ranges of the mothers' ages as recorded in the Background Information form. The age of the mother was the mother's age at the time of the child's referral to the center.

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>S.D.</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group I</td>
<td>33.9</td>
<td>5.7</td>
<td>22 to 52</td>
</tr>
<tr>
<td>Group II</td>
<td>33.6</td>
<td>5.6</td>
<td>27 to 54</td>
</tr>
<tr>
<td>Total</td>
<td>33.7</td>
<td>5.7</td>
<td>22 to 54</td>
</tr>
</tbody>
</table>

A description of the sibling relationship is shown in Table 9 (p. 29). Sibling relationship is reported in four categories: sibling of the same sex less than two years older/younger than the subject, sibling of the other sex less than two years older/younger than the subject, a sibling more than two years older/younger than the subject, or no sibling.
Table 9

Number and Percent of Sibling Relationships of Subjects

<table>
<thead>
<tr>
<th></th>
<th>Same Sex</th>
<th>Other Sex</th>
<th>Other Sibling</th>
<th>No Sibling</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>&lt;2 years</td>
<td>&lt;2 years</td>
<td>&gt;2 years</td>
<td></td>
</tr>
<tr>
<td>Number</td>
<td>Number</td>
<td>Percent</td>
<td>Number</td>
<td>Percent</td>
</tr>
<tr>
<td>Group I</td>
<td>45</td>
<td>22.1</td>
<td>42</td>
<td>20.0</td>
</tr>
<tr>
<td></td>
<td>91</td>
<td>45.3</td>
<td>28</td>
<td>12.6</td>
</tr>
<tr>
<td>Group II</td>
<td>6</td>
<td>22.2</td>
<td>8</td>
<td>25.9</td>
</tr>
<tr>
<td></td>
<td>8</td>
<td>29.6</td>
<td>6</td>
<td>22.2</td>
</tr>
<tr>
<td>Total</td>
<td>51</td>
<td>22.1</td>
<td>50</td>
<td>20.7</td>
</tr>
<tr>
<td></td>
<td>99</td>
<td>43.3</td>
<td>34</td>
<td>13.8</td>
</tr>
</tbody>
</table>

The Wilks' lambda (U-Statistic) and the univariate F-ratio were used to determine whether the criterion means for each of the predictor variables differed significantly for the two groups. The Wilks' lambda and the univariate F-ratio are summarized in Table 10 (p. 30).

No significant differences were found between the two groups on the predictor variables. Therefore, in order to test Hypothesis 1(a), whether or not the entire set of variables could predict classification, all of the predictor variables were analyzed at the tolerance level of .000001. Those variables which failed to make a large enough contribution to the total variance were excluded from the discriminant function analysis. Those variables failing the tolerance test were: female, last born, blended family, and no sibling.

Discriminant function analysis provides both data analysis and classification. Table 11 (p. 31) summarizes the results of the data analysis through the canonical discriminant function analysis.
Table 10

Comparison of the Predictor Variables Using the Wilks' Lambda
and Univariate F-Ratio (df = n-2)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Wilks' lambda</th>
<th>F Ratio</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>0.999</td>
<td>0.119</td>
<td>0.730</td>
</tr>
<tr>
<td>Male</td>
<td>0.997</td>
<td>0.642</td>
<td>0.424</td>
</tr>
<tr>
<td>Female</td>
<td>0.997</td>
<td>0.642</td>
<td>0.424</td>
</tr>
<tr>
<td>First Born</td>
<td>1.000</td>
<td>0.001</td>
<td>0.980</td>
</tr>
<tr>
<td>Middle Born</td>
<td>0.999</td>
<td>0.003</td>
<td>0.958</td>
</tr>
<tr>
<td>Last Born</td>
<td>0.999</td>
<td>0.005</td>
<td>0.942</td>
</tr>
<tr>
<td>Family Density</td>
<td>0.998</td>
<td>2.611</td>
<td>0.108</td>
</tr>
<tr>
<td>Status</td>
<td>0.999</td>
<td>0.061</td>
<td>0.804</td>
</tr>
<tr>
<td>Intact Family</td>
<td>0.999</td>
<td>0.234</td>
<td>0.629</td>
</tr>
<tr>
<td>Not Intact Family</td>
<td>1.000</td>
<td>0.0001</td>
<td>0.993</td>
</tr>
<tr>
<td>Blended Family</td>
<td>0.998</td>
<td>0.346</td>
<td>0.557</td>
</tr>
<tr>
<td>Mother's Age</td>
<td>0.999</td>
<td>0.055</td>
<td>0.815</td>
</tr>
<tr>
<td>Same Sex Sibling</td>
<td>1.000</td>
<td>0.0002</td>
<td>0.989</td>
</tr>
<tr>
<td>Other Sex Sibling</td>
<td>0.998</td>
<td>0.502</td>
<td>0.480</td>
</tr>
<tr>
<td>Older Sibling</td>
<td>0.989</td>
<td>2.357</td>
<td>0.126</td>
</tr>
<tr>
<td>No Sibling</td>
<td>0.992</td>
<td>1.824</td>
<td>0.178</td>
</tr>
</tbody>
</table>
Table 11
Canonical Discriminant Function for the
Set of Predictor Variables

<table>
<thead>
<tr>
<th>Eigenvalue</th>
<th>Canonical Correlation</th>
<th>Wilks' Lambda</th>
<th>Chi-Square</th>
<th>DF</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.0626</td>
<td>0.24273</td>
<td>0.9410</td>
<td>12.66</td>
<td>13</td>
<td>0.4743</td>
</tr>
</tbody>
</table>

The data analysis results in Table 11 indicate that the entire set of predictor variables could not predict classification at the .05 level of significance.

The classification procedure of the discriminant analysis was then completed to determine whether or not the set of predictors could classify beyond simple chance. Because of the unequal number of subjects in each group, it was necessary to compute the prior probabilities for group membership in each group. The prior probability for being classified in Group I (Counseling) was 87 percent, and in Group II (No-Counseling) was 12 percent. Table 12 (p. 32) summarizes the classification results of the discriminant function analysis.

The prior probability for being classified in Group I was 87 percent, and 98.4 percent were classified in Group I. Therefore, classification in Group I exceeded simple chance by approximately 11 percent. The prior probability of being classified in Group II was 12 percent, and 11.1 percent were classified in Group II. Although the set of predictors did exceed simple chance in classification of subjects, the predictors
did not discriminate between the two groups at the .05 level of significance. Therefore, Hypothesis 1(a) was rejected.

Table 12
Classification Results of the Discriminant Function Analysis Using the Set of Predictor Variables

<table>
<thead>
<tr>
<th>Actual Group</th>
<th>Number of Cases</th>
<th>Predicted Group Membership</th>
<th>Group I</th>
<th>Group II</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Number</td>
<td>Percent</td>
</tr>
<tr>
<td>Group I</td>
<td>190</td>
<td></td>
<td>187</td>
<td>98.4</td>
</tr>
<tr>
<td>Counseling</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Group II</td>
<td>27</td>
<td></td>
<td>24</td>
<td>88.9</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Correctly</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Classified</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>in Combined</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Groups</td>
<td>87.6%</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

A factor analysis was performed on the entire group of predictor variables to determine whether or not a subset of variables could predict classification. The variable female and male were found to be redundant so the variable was renamed sex and the analysis repeated. The subset of variables was selected on the basis of eigenvalues of .99 or greater. The eight factors selected, which accounted for 81.5 percent of the total variance, were age, sex, first born, middle born, last born, family density, family size, and status. The Varimax Rotated Factor Matrix is presented in Appendix G.

Discriminant function analysis provides both data analysis and classification. Table 13 (p. 33) summarizes the results of the analysis.
of the subset of predictor variables through the canonical discriminant function analysis.

Table 13
Canonical Discriminant Function of the Subset of Predictors

<table>
<thead>
<tr>
<th>Eigenvalue</th>
<th>Canonical Correlation</th>
<th>Wilks' lambda</th>
<th>Chi Square</th>
<th>DF</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.0109</td>
<td>0.1039</td>
<td>0.9892</td>
<td>2.292</td>
<td>8</td>
<td>0.971</td>
</tr>
</tbody>
</table>

The data analysis results in Table 13 indicate that the subset of predictor variables could not predict classification at the .05 level of significance.

The classification procedure of the discriminant analysis was then completed to determine whether or not the subset of predictors could classify beyond simple chance. Because of the unequal number of subjects in each group, it was necessary to compute the prior probabilities for group membership in each group. The prior probability for being classified in Group I (Counseling) was 87 percent, and in Group II (No-counseling), 12 percent. Table 14 (p. 34) summarizes the classification results of the discriminant function analysis.

The results of the classification procedure indicated that all members of Groups I and II were classified in Group I, when the subset of predictor variables was used. The prior probability for classification in Group I was 87 percent. As subjects in both Groups I and II were classified in Group I, a comparison between prior probability for
Group I and the total correctly classified percent of 87.56 shows that the relationship between the discriminating subset of variables and group classification is exactly chance. Therefore, Hypothesis 1(b) was rejected.

Table 14
Classification Results of the Discriminant Function Analysis Using the Subset of Predictor Variables

<table>
<thead>
<tr>
<th>Actual Group</th>
<th>Number of Cases</th>
<th>Predicted Group Membership</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group I</td>
<td>190</td>
<td>Group I: 190 100%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Group II: 0 0%</td>
</tr>
<tr>
<td>Group II</td>
<td>27</td>
<td>Group I: 27 100%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Group II: 0 0%</td>
</tr>
</tbody>
</table>

Total Correctly Classified in Combined Groups 87.56%

The results of the classification procedure indicated that all members of Groups I and II were classified in Group I, when the subset of predictor variables was used. The prior probability for classification in Group I was 87 percent. As subjects in both Groups I and II were classified in Group I, a comparison between prior probability for Group I and the total correctly classified percent of 87.56 shows that the relationship between the discriminating subset of variables and group classification is exactly chance. Therefore, Hypothesis 1(b) was rejected.
Discussion

This study examined the relationship between the Adlerian concept of birth order and maladaptive behavior in school-aged children referred to an interdisciplinary diagnostic and remedial center. Discriminant analysis did not show the set of predictor variables or a subset thereof to be able to distinguish the two groups at the .05 level of significance in data analysis. However, classification results did exceed the prior probability for chance classification when the entire set of predictors was used.

Birth order, as defined by including environmental factors and ordinal position, was not found to be a predictor variable that would distinguish between the two groups. This finding appears to be consistent with those of several other studies. Touliatos and Lindholm (1980) found that neither birth order nor family size had a significant effect on children's mental health even when grade, sex, and social class were taken into account. In a similar study, Lessing and Oberlander (1967) found sex and ordinal position were not related to low adjustment scores on the California Test of Personality. Lahey, Hammer, Crumrine, and Forehand (1980) failed to find a significant relationship between birth order, sex of sibling, sex of subject, and behavioral problems.

Consistent with the findings of previous research, the current study had more males than females in the subject population. Peskin, Giora, and Kaffman (1974), in their sample of rural and urban children referred from kibbutz and non-kibbutz families, found an over-representation of males in the clinic population. In a study of families with problem
children, Fishbein (1981) found that the identified patient was more often male. As early as 1930, Rosenow (1930) observed that males were more frequently referred than their female counterparts. This finding seems to support Adler's observation (Ansbacher & Ansbacher, 1956) that males are most often referred for remediation of maladaptive behavior, but the findings of this study failed to support earlier findings that sex alone is a predictor variable in determining referral for counseling.

Approximately 50 percent of the subjects in this study were first-born; approximately 30 percent of the subjects were last-born; and the remaining 20 percent were middle-born. Adler (1931) noted that first-borns were more often seen in the guidance clinic than any other birth order. Peskin, Giora, and Kaffman (1974) and Lahey, Hammer, Crumrine, and Forehand (1980) also found significantly higher numbers of first-borns in their studies of children with behavior problems. Lahey, Hammer, Crumrine, and Forehand (1980) found in addition that first-borns had more reported problems. Gallagher and Cowen (1977) found middle children to have less acting out behavior, which was consistent with their low referral rate to the center. Touliatos and Lindholm (1980) found older children to have the most problems on the behavior checklist. In this study, however, in and of itself, this was not a predictor variable that could distinguish between the counseling and no-counseling groups.

Family density was the predictor variable in this study that most closely approached significance (p=.11). Although family density appeared to have the greatest promise in discriminating between the two groups, it failed to reach the .05 level of significance required in this study.
Family size was not found to be a predictor variable that would distinguish between the two groups in this study. Gallagher and Cowen (1977) believed family size should be included in birth order research, and various birth order researchers did control for family size (Koch, 1955, 1956; Peskin, et al., 1974; Lahey, et al., 1980; Fishbein, 1981). While the results of this study showed family size alone was not a significant variable in determining between the two groups, the factor analysis (Appendix G) seemed to indicate that family size in combination with socio-economic status may provide a direction for use in future birth order studies.

Approximately 75 percent of the subjects in this study were from intact homes, where both natural parents were present. Another 15 percent of the sample was from a blended family in which there were two parents, but one was a step-parent. These family types together show that about 90 percent of the subjects in this study were from two-parent homes, while 10 percent of the subjects were from one-parent homes. The direction of the data seems to indicate that two-parent families may be more likely to seek counseling for their children than are non-intact families. Previous research has not addressed this variable. Future studies might be designed to address the issue of whether or not single parents do seek counseling for their children less often than two-parent families.

In the discriminant analysis using a subset of variables to predict group membership, all of the subjects were classified into the counseling group. This finding lead to a re-examination of the subjects' records for possible clues as to why the predictor variables did not distinguish
between the two groups. This investigation lead the researcher to the hypothesis that the no-counseling group may have been a false group or a false dichotomy. In the center's master list of children who were evaluated, subjects had been placed in the no-counseling group for several reasons that were not related to whether or not the child needed counseling, such as already being in counseling therapy at another location, reading and speech were determined to have a higher immediate priority, or the child lived too far away from the center to return for therapy on a consistent basis.

Because of the number of subjects apparently correctly placed in the counseling group and the stringent screening process made prior to placement, it appears likely that the failure of the analysis to discriminate between the two groups may be related to the membership of the no-counseling group. Other factors which may have contributed to the failure to discriminate between the two groups may have been the lack of information concerning the death of siblings, retardation of siblings, or learning disabled siblings. The sibling relationship, as Adler (1931) posed it, was not available to further describe the family constellation.

Although this investigation did not reveal any set or subset of birth order variables that could distinguish between groups of children in counseling and no-counseling, it seems reasonable to assume that some of the patterns that emerged from the data may warrant further investigation.

All the predictor variables were treated as equal in this study, and yet the factor analysis indicated that the predictor variables may not contribute equally to the prediction of maladaptive behavior.
Further research to develop a scale containing weighted scores along the dimensions of sex, birth order, family density, intactness of family, and sibling relationships, which can be administered prior to receiving counseling, seems warranted. To validate such an instrument, it would be necessary to compare results (criterion) with a personality/adjustment measure to establish a correlation between easily attained birth order information and a standardized definition of maladaptive behavior.

Lahey, Hammer, Crumrine, and Forehand (1980) stated in their research:

Future research of this nature may allow child health care professionals to more readily screen for high risk children on the basis of easily attainable demographic data. Such research may also suggest prophylactic interventions for maladaptive behavior (p. 614).
Appendices
APPENDIX A

Karla Carmichael, as a Graduate Assistant at the Pupil Appraisal Center at North Texas State University, has access and permission to use the client records for research purposes on the premises.

Lance M. Gentile, PhD
Director

Linda Webb-Woodard, Ed.D.
Supervising Counseling Specialist
APPENDIX B

A FRAME OF REFERENCE FOR COUNSELING

PARENT INTERVIEW

The parents are first encouraged to tell the nature of their problem. "Please tell me why you are here" may be the opening statement. The interview may be initiated by a question, "What is the major concern?"

During the initial phase the counselor may ask the parents to elaborate when the statements of a significant nature are reported. At every point that the parent reports what the child does, the counselor immediately asks, "What do you do about it?"

Statements of the parents related to the action which they pursue should not be taken for granted. Every statement of action which is not clear should be challenged with "What do you mean by that?" Once the counselor understands the parent's action, the counselor asks, "Then what happens?"

The initial report of the parents is followed by specific questions. The purpose of specific questioning is to clarify points that have not been brought out in the spontaneous report. The following outline will serve the counselor as a frame of reference in pursuing those areas not already covered.

I. Describe the nature of your concern.
   A. Under what conditions did the concern arise?
      1. At what age? (length or duration)

II. What is the child's position in the sibling sequence?
   A. Ratio of male to female.
   B. Describe the interactions you see among the children.
      1. Conflict
      2. Rivalry
      3. Teasing
      4. Submission
      5. Sulking

III. Describe others who have an environmental influence on the child and family.
   A. Relatives
      1. Grandparents
      2. Other relatives
   B. Other people living in the house
   C. Neighbors
Parent Interview

IV. In what way does the child stand out in the family?
   A. Conditions under which the child functions adequately
   B. Ways the child is successful

V. Describe the nature of the daily routine.
   A. Getting up in the morning.
      1. Who awakens the child?
      2. What about dressing?
      3. What about breakfast?
   B. Getting off to school.
   C. Describe the lunch hour
   D. Describe the dinner hour
   E. How does the child get off to bed? What time?

VI. Tell what happens when the family goes out together.
   A. Preparation for going out
   B. Leaving the house
   C. What happens when away

VII. What is the nature of the child's social relationships?
   A. Ability to make contact with others
      1. Neighborhood children
      2. Adults
      3. Children at school
   B. Does the child have pets?
      1. Tell how the child cares for them
   C. Attitude toward school
      1. Schoolwork
      2. Teachers
      3. Those in authority
   D. What impressions have been conveyed to the child from
      the family situation?
      1. Tragedy in family
      2. Who is boss in family
      3. Type of discipline
      4. Supervision

VIII. What is the child's interest in the future?
   A. What does the child want to be when s/he grows up?
   B. What is the occupation of other family members?

IX. Does the child have nightmares, dreams?
   A. What are the dreams about?

X. With whom is the child most often compared?
   A. Which parent is child most like?
   B. Which parent is child least like?
Parent Interview Supplement

A. Sibling Characteristics:

List sibling who is highest and lowest in each attribute:
(if child is not at either extreme, give his/her position
as to similarity to either.)

Intelligent
Hardest worker
Best grades in school
Conforming
Rebellious
Helps around the house
Critical
Considerate
Selfish
Tries to please
Sensitive
Temper
Materialistic
Most Friends
Most Spoiled
High standards of achievement
Athletic
Strongest
Attractive
Most punished

B. Sibling Interactions

Who takes care of whom?
Who plays with whom?
Who gets along best with whom?
Which two fight and argue the most?
Who is father's favorite?
Who is mother's favorite?

C. Family Atmosphere

How would you describe your husband/wife?
How would you describe yourself?
Which child is most like father? How?
Which child is most like mother? How?
What kind of relationship exists between father and mother?
Who is dominant, makes decisions, etc.?
Do parents agree on child rearing methods?
Who is more ambitious for the children? In what way?
Do parents disagree openly? About what? How do the dis-
agreements end?
APPENDIX C

LIFE STYLE GUIDE—CHILDREN

I. Family Constellation: List all siblings in descending order, including the child in his position.

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<tr>
<th>Name</th>
<th>Birthdate</th>
<th>Education</th>
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1. Who is most different from you? How?
2. Who is most like you? How?
3. Tell about your life before you went to school.

II. Functioning at Life Tasks:

1. Socially: How do you get along with adults? How do you get along with children?
2. Work: How do things go for you in school?
   - What subject do you like best? Why?
   - What subject do you like least? Why?
3. What would you like to be when you grow up?
4. What do you fear the most?

III. Family Atmosphere:

1. What kind of a person is father?
2. What kind of a person is mother?
3. Which of the children is most like father?
4. Which of the children is most like mother?
IV. Rating:
List highest and lowest sibling for each attribute:

Intelligent
Hardest worker
Best grades in school
Conforming
Rebellious
Helps around the house
Critical
Considerate
Selfish
Tries to please

Sensitive, feelings easily hurt
Temper
Materialistic, likes to get things
Friends (most)
Most spoiled
High standards of achievement, behavior morals
Athletic
Strongest
Prettiest
Most punished

V. Early recollections:

VI. Three Wishes:

If you were going to pretend to be an animal, which would you choose? Why?
APPENDIX D

Dear Parent:

It is the desire of our staff to have the most complete picture possible of your child in order to better understand the problem. This questionnaire will help you give us the information we need to be of as much assistance as possible.

Please do not write in diagonally marked blocks. Fill in requested information on line above blocks.

Name of child ___________________________ (A1/6-30)

Date of birth ___________________________ (A1/31-36)

Sex of child ____________________________ (Please check appropriate box)

1. Male
2. Female

Age ________ years ________ months ___________________________ (A1/38-41)

Race or nationality (Please check appropriate box)

1. White
2. Negro
3. Latin
4. Other: Explain ___________________________ (A1/42)

Present grade in school ___________________________ (A1/43-44)

Name of school ___________________________ (A1/45-47)

Father ___________________________ (A1/48)

Employed by ___________________________ Job Title ___________________________ (A1/49)

Mother's occupation:

1. Part time
2. Full time
3. Housewife

Employed by ___________________________ Job Title ___________________________ (A1/50)

Form PAC-3a, page 1
Home Address ___________________________ Home Phone ___________________________

City & Zip Code ___________________________ Business Phone ___________________________

With whom does child live? (Please check only one)

1. Both natural parents
2. Adoptive parents
3. Welfare Foster home
4. Relatives
5. Only mother
6. Mother and stepfather
7. Only father
8. Father and stepmother
9. Other familial situation

Parents' marital status (Please check appropriate box)

1. Parents living together
2. Separated
3. Divorced
4. Father deceased
5. Mother deceased
6. Re-married

If parents are separated or divorced, when? ___________________________

List by name the members of your family in the order of their age, beginning with the oldest parent.

<table>
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<tr>
<th>Member</th>
<th>Age</th>
<th>Male or Female</th>
<th>Current Grade or Ed. Completed</th>
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F. Ed. ___________________________ (A1/55)
M. Ed. ___________________________ (A1/55)

No. of children in family ___________________________ (A1/57-58)
Place of child ___________________________ (A1/59-60)
Did child attend a pre-school?
  1. Yes
  2. No

If Yes, for how long? At what age?

My child entered the first grade at age

Was child adopted?
  1. Yes
  2. No

Has he been told he was adopted?
  1. Yes
  2. No

At what age was he adopted? years months

My child was born after months' pregnancy

Was the (number) pregnancy?

Was born in: (Please check appropriate box)
  1. Home
  2. Hospital
  3. Clinic

Child's weight at birth lbs. oz.

During the pregnancy the mother's health was: (Please check appropriate box)
  1. Good
  2. Fair
  3. Poor

Were there any health problems or diseases during pregnancy?
  1. Yes
  2. No

If so describe:

The child was born after labor lasting hours.

Condition of delivery: (Please check appropriate box)
  1. Fast
  2. Moromet
  3. Slow

Type of birth: (Please check appropriate box)
  1. Normal
  2. Breach
  3. Caesarian
  4. Instrument birth (forceps)
Did child have any problems at birth?

1. Yes
2. No

If Yes, describe:

My doctor suggested that I take special precautions or watch for:

During my child's early years, he had problems with:

Eating
1. Yes Describe
2. No

Sleeping
1. Yes Describe
2. No

Toilet Training
1. Yes Describe
2. No

Crying
1. Yes Describe
2. No

General Health
1. Yes Describe
2. No

Diseases
1. Yes Describe
2. No

Serious Injuries
1. Yes Describe
2. No

Child has been hospitalized
1. Yes Describe
2. No

Age when hospitalized

Reason

Child sees doctor: (Please check appropriate box)
1. At regular intervals each year
2. Irregularly, but at least once a year
3. Seldom
4. Never

How long since last seen by doctor? (Please check appropriate box)
1. 3 months
2. 6 months
3. One year
4. 18 months
5. 2 years
6. 3 years
7. More than 3 years

Form PAC-3a, page 4
Is child presently taking medicine?
1. Yes
2. No

Does child have a vision problem?
1. Yes
2. No

Often complains of eyes burning, hurting or aching?
1. Yes
2. No

Wears glasses?
1. Yes
2. No

Has a hearing problem?
1. Yes
2. No

Has a hearing aid? Yes: No which he: does: does not wear.

Might benefit from a hearing aide according to doctor?
1. Yes
2. No

Has a speech problem?
1. Yes Describe ____________________________
2. No

Child's physical development was: (Please check appropriate box)
1. Normal
2. Rapid
3. Slow

Age in months when child crawled __________

Walked alone at about __________ months

Began to talk at about __________ months

Began to feed self unassisted at about __________ months

Child has convulsions or spells now?
1. Yes
2. No

Had a neurological examination?
1. Yes
2. No

NEUROLOGICAL EXAMINER Date City and State Findings-Medication
Has had a psychological or psychiatric examination?

- 1. Yes
- 2. No

PSYCHOLOGICAL OR PSYCHIATRIC EXAMINER (Indicate which) Date City and State

Do any other members of immediate family have speech, hearing, vision, reading, or emotional problems?

- 1. Yes
- 2. No

Describe Problem:

Has the child had tutoring or therapy for his problem?

- 1. Yes
- 2. No

By whom? __________________________ When? __________________________

For how long? __________________________

Have any of your other children been seen by this center?

- 1. Yes Name of child __________________________
- 2. No

My child had the following illnesses: (Please indicate at what age)

- 1. Mumps
- 2. Polio
- 3. Asthma
- 4. Measles
- 5. Ulcers
- 6. Hay Fever
- 7. Pneumonia
- 8. Meningitis
- 9. Chicken Pox
- 10. Fainting
- 11. Whooping Cough
- 12. Tonsillitis
- 13. Scarlet Fever
- 14. Frequent headaches
- 15. Frequent colds and/or tonsilitis
- 16. Other: Describe __________________________

FOR PAC USE ONLY

Referred by ____________________________

Referred for ____________________________

No. of schools attended ____________________________

Grades repeated: ____________________________

Describe the problem your child is having (What do you think your child needs help with?)

____________________________________________________________________________________
____________________________________________________________________________________
____________________________________________________________________________________

When did this problem begin?

____________________________________________________________________________________
____________________________________________________________________________________
____________________________________________________________________________________

Other agencies which have seen your child (such as counseling, remedial reading, speech, or testing centers).

<table>
<thead>
<tr>
<th>Name</th>
<th>Address</th>
<th>Date First Seen</th>
<th>Last Seen</th>
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Release of Information

I hereby authorize the Pupil Appraisal Center to administer their standard block of tests in the areas of counseling, reading, and speech. I also give permission for the release of diagnostic information to the school ______ attends.

(Name of Child)

Signed: ____________________________

Relationship to Child: ____________________________

Date: ____________________________
SCHOOL ASSESSMENT AND REFERRAL FOR INDIVIDUAL STUDY

Date ____________________

Name of Pupil ____________________ Birth Date ____________________
Month __ Day __ Year __

Father ____________________ Address ____________________
Street or Box ____________________
City __ State __ Zip __

Mother ____________________ Address ____________________
Street or Box ____________________
City __ State __ Zip __

Child Lives With ____________________ Telephone ____________________

School ____________________ Address ____________________

Counselor ____________________ Principal ____________________ Classroom Teacher ____________________

Referred by: Please give names of all personnel involved:

Teacher ____________________ Reading Clinic ____________________
Special Ed. ____________________ Nurse ____________________
Principal ____________________ Adm. ____________________
Counselor ____________________ Other (specify) ____________________

Referred for: ____________________

Hearing ____________________ Lack of Satisfactory Academic Progress ____________________ Behavior ____________________
Speech ____________________ Reading ____________________ Emotional ____________________
Other (specify) ____________________
55

Hearing Screening  250  500  1000  2000  4000  Date

Check frequency at which no response was made.  Screening Level

Audiogram made?  Yes  No  Comment

2. School Data

Teacher Estimate of Level Achievement (Grade Level)
Reading
Arithmetic
Spelling

Grades (Summary of Earned Grades)
Language Arts
Arithmetic
Social Studies

Grades Repeated

Describe Child's Problem:

Authorization and Signatures: (Referral must be discussed with parent).

Who discussed referral with parent?

Public School approval and request for appraisal at Pupil Appraisal Center, and agreement to expedite transportation to Center.

Referral form completed by:  Signed  Date

School Administrator:  Signed  Date

Pupil Appraisal Center approval for entry into Center:

Director of Center:  Signed  Date
### School Record

<table>
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<tr>
<th>School</th>
<th>Dates Attended</th>
<th>Grades</th>
<th>Days Absent</th>
<th>Grade Average</th>
<th>Behavior</th>
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Test Information:

Please record test scores (including all subtest scores) and other information on ALL tests that have been given to this student. (Attach second sheet if necessary).

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<th>Tests</th>
<th>Date Administered</th>
<th>Results</th>
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APPENDIX F

TEACHER OBSERVATIONS OF CHILD'S BEHAVIOR

Child's Name: ____________________________ Age: __________

School: ____________________________ Grade __________

Teacher's Name ____________________________

INSTRUCTIONS: Skip any you feel unable to judge. Check yes or no, or place a check at the point on the continuum that best describes the child, whenever is applicable.

If qualifying statements are required for clarification or substantiation, place the number and its respective comment in the space provided after each division.

I. ACADEMIC AND RELATED AREAS

1. Enjoys school

2. Willing to try things that may be hard for him to do

3. Curious, interested, willing to explore

4. Gives up easily, falters at difficulty

   a. If a child gives up, under what circumstances does it occur?

   b. What is done about it?

5. Can express his ideas adequately for age

V. Low Low Avg. High V.High

6. Capable of sustained attention and interest for age

V. Low Low Avg. High V.High

7. Accomplishes things, gets things done

V. Low Low Avg. High V.High

8. Does this child stand out (positively or negatively) in your group?

   a. If yes, in what way?

   b. If no, explain why not.

   c. Is there anything about this child that is different or unique?

   d. Describe any special abilities or needs the child may have.
9. Works independently, carries out assignments without supervision.

| V. Low | Low | Avg. | High | V. High |

a. If sometimes, what types of assignments can he carry out?

b. What type can he not carry out?

10. In what subject areas does the child do

a. Above average work?

b. Average?

c. Below average?

11. Flexible, handles new situations well, likes changes

| V. Low | Low | Avg. | High | V. High |

**Elaborations and/or comments on ACADEMIC AND RELATED AREAS:**

11. RELATION TO OTHERS (SOCIAL)

1. Blames others or things for his troubles or his failure

   Yes ______ No ______

2. Submissive and unassertive, others can walk all over him

   Yes ______ No ______

   a. If so, under what circumstances?

3. Patient, can wait his turn, delay gratification

   Yes ______ No ______

4. Shows concern for others, sympathetic

   Yes ______ No ______
7. Assumes group leadership for a given activity

8. Makes friends quickly and easily

9. Competitive, has a keen sense of rivalry

10. Enthusiastic, easily excited to active, energetic participation

   a. What will especially "turn him on"?

11. How will he respond when criticized, blamed, or in some way assaulted?

   **Elaborations and/or comments on RELATION TO OTHERS:**

III. PERSONAL

1. Responds positively to humorous situations

2. Sensitive, feelings easily hurt

3. Depressed, unhappy, glum

4. Separate fantasy and reality

5. Recovers after emotional upset; does not remain silent, sulky, irritable

   a. If he doesn't recover what does he do?

6. Complains of headache, stomachaches, or other minor ailments

7. Appears anxious, depressed, nervous

   **Yes**

   **No**
a. What signs do you observe?

8. Accepts help when it is realistically needed
   Yes ___________ No ________

9. If boy, acts masculine; if girl, feminine (according to ordinary standards)
   V. Low | Low | Avg | High | V. High

10. Behavior is within bounds of ordinary social stands (honesty, truthfulness)
    V. Low | Low | Avg | High | V. High

11. Exhibits inappropriate types of behavior or feelings
    V. Low | Low | Avg | High | V. High

**Elaborations and/or comments on PERSONAL AREA:**

[IV. TEACHER (YOURSELF)]

1. What are some of the behaviors specifically that this child engages in that are annoying to you or to the class?
   a. ______________________________________________________
   b. ______________________________________________________
   c. ______________________________________________________

2. What happens when the child does these annoying things?
   ______________________________________________________
   Then what happens (Child's reaction; class's reaction)?
   ______________________________________________________
References


Schooler, C. Birth order effects: Not here, not now! *Psychological Bulletin, 1972, 78*, 161-175.


