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Family factors and individual coping as predictors of urban middle school competence

Paulus, John Andrew, Ph.D.
The Ohio State University, 1991

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FAMILY FACTORS AND INDIVIDUAL COPING AS PREDICTORS
OF URBAN MIDDLE SCHOOL COMPETENCE

DISSERTATION

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

By

John A. Paulus, B.S., M.A.

*****

The Ohio State University

1991

Dissertation Committee:
D. J. Tosi
A. D'Costa
M. A. Fristad
P. M. Clark

Approved by
Advisor
College of Education
To My Parents
I express sincere appreciation to Dr. Donald J. Tosi for his guidance, insight, and encouragement throughout the research. I thank the other members of my advisory committee, Drs. Ayres D'Costa, Mary A. Fristad, and Dr. Philip M. Clark for their timely encouragement and advice. Gratitude is expressed to Dr. Mary Claytor, Columbus Public Schools, for her support and her belief in this study. I express thanks to Drs. Ronald Etheridge, Howard Merriman, Timothy Ilg, and Ed Matthews, Columbus Public Schools, for their support. Gratitude is expressed to Mr. Bert Wiser, Columbus Public Schools, and Dr. Robert McCallum, the Ohio State University, for their statistical help. Gratitude is also expressed to Mr. Stephen Tankovich, Mr. Walter Richardson, and Mrs. Iris Fields, Columbus Public Schools, and their middle school staff, for their assistance. To my wife, Gail, I offer sincere thanks for your years of support and unshakable faith in me. To my children, Ben, Elaine, and Leslie, I thank you for understanding my frequent absences.
VITA

August 19, 1948 ...................................... Born - Ermelo, the Netherlands

1970 .......................................................... B.S., The Ohio State University, Columbus, Ohio

1975 .......................................................... M.A., The Ohio State University Columbus, Ohio

1975-1977 ................................................ School and Family Counselor, Rosemont School for Girls, Columbus, Ohio

1980-1985 ................................................ Caseworker and Medicaid Reviewer, Franklin County Welfare Department, Columbus, Ohio

1985-1988 ................................................ Academic Advisor, The Ohio State University, Columbus, Ohio.

1988-Present ........................................... Pre-Doctoral Psychology Intern, Behavioral Health Services, Columbus, Ohio

FIELDS OF STUDY

Major Field: Education

Studies in Ethics and Advanced Career Counseling with Dr. Susan Sears. Studies in Supervision Theory & Practice, Group Counseling and Family Counseling with Dr. James Wigtill.

Studies in Leadership and Advanced Interventions with Drs. Donald Tosi and Pamela Wise.

Studies in Research & Assessment in Family Therapy and Family Therapy Techniques with Dr. Geoffrey Leigh. Studies in Psychodiagnostic Assessment with Dr. Henry Leland.
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CHAPTER I
INTRODUCTION

Students in large urban school districts continue to drop out of school at alarming rates. Researchers and school administrators believe the transition from elementary secondary school is particularly difficult for urban youth and this factor may contribute to the dropout problem. Many of these youth have difficulty adjusting to middle school. The transition from elementary school to middle school requires increasing independent behavior and self-control. Many adolescents find this transition to a more impersonal and stressful environment to be difficult and frustrating (Grannis, Fahs, and Bethea, 1989). A demanding, impersonal, secondary school environment may foster increasing absences and discipline problems (Goll, Holland, and Lanese, 1989; Galloway, 1983).

The interaction of large and impersonal, secondary school environments with youth who have marginal social and academic coping skills more than likely contributes to the high dropout rates in urban school districts. While the national dropout rate for high schools is estimated at 25 per cent (Weber, 1988; O'Connor, 1985), large, urban school have a substantially larger share of this challenge, with dropout rates ranging from 30 to 50 per cent (Hammack, 1986; Smith, 1986). Columbus Public School data are consistent with these figures. Last Spring former superintendent Ronald Etheridge reported a dropout rate of 37.7 percent for high school students during the 1987-1988 school year. Columbus assistant
superintendents are recommending that dropout prevention programs, including assessment programs, be implemented at the elementary and middle school levels.

The assessment of urban youth competence in the secondary school setting has become an area of increasing research in recent years (Garmezy, Masten, & Tellegen, 1984; Garmezy, 1981; Grannis, Fahs, and Bethea, 1989). While these studies have identified some personal and stress factors related to urban school competence, there is a need for more comprehensive, multivariate studies. Multivariate studies using multiple sets of person and environmental variables as predictors need to be conducted. Such multivariate studies would clarify the relative contribution of personal characteristics and environmental influences on urban school competence.

Background for the Problem

While some researchers are pointing to the high dropout rates in the urban schools, others are investigating how so many youngsters manage to stay in school despite adverse conditions. In their “Project Competence”, Garmezy, Masten, and Tellegen (1984) reported that the ‘engaged’ competent youth are academically oriented, are not isolates, and have close relationships with parents and siblings. Through the use of hierarchical multiple regression analysis, these researchers found that IQ and socioeconomic status (SES) added significantly to the variance of ‘engaged’ competence.

In recent years there has been increasing interest in how stress, coping, and competence are related to youth in the urban schools (Garmezy et al., 1984; Garmezy, 1981; Grannis, Fahs, and Bethea, 1989; Fahs, 1987; Garmezy, 1981; and Rutter, 1983). Sex differences in coping with stress, and
math achievement were observed to be important predictors of how well urban youth adjust to the inner city middle school (Grannis et al., 1989). Grannis et al. reported that boys who were more sensitive in their perception of stressful events in the urban middle school setting and youth who had good math achievement tended to be more successful academically than their peers without these traits.

The relationship of personality and intelligence with competence in the junior high setting was first extensively investigated by Cattell and Butcher (1968) and Barton, Dielman and Cattell (1972). These researchers found that a regression model of the Culture Fairs IQ test and the High School Personality Questionnaire proved best at predicting achievement for sixth and seventh graders in social studies, science, mathematics, and reading.

Review of the literature has shown that three domains are relevant to competence in youth. Personal characteristics, family characteristics, and individual coping patterns help explain competence of youth in school. **Person Variables**

Sex, age, race, math achievement, and reading achievement are individual characteristics most frequently cited in the literature as being important to academic achievement and school attendance.

**Sex.** Female adolescents tend to earn better grades than male students (Poole and Lowe, 1981; Grannis et al., 1989).

The literature on dropping out of school shows males dropping out of school in greater percentages than females (Rumberger, 1987; Ekstrom, Goertz, Pollack, 1986; and Hammack, 1986).
Grannis et al., (1989) observed that males, particularly Afro-American males, had greater difficulty coping with aggressive and disruptive behavior in the urban middle school than female adolescents. In a longitudinal, cross-cultural study of adolescents, Werner and Smith (1982) reported that females cope better during early teenage years and childhood, while males cope better in their later teen years.

**Age.** Being “over-age” for one’s grade level was observed to be one of the strongest and most consistent predictors of poor academic achievement and dropping out (Hammack, 1986; Wehlage & Rutter, 1986; Poulos, 1986; Schreiber, Kaplan, & Strom, 1966; Zeller, 1970).

**Race.** Minority students, particularly Afro-American and Hispanic students, are more likely to be suspended from school (Block, Covill-Servo, and Rosen, 1978). Goll, Holland, and Lanese (1989) reported that absence and suspensions were the variables that best described youth “at risk”.

The performance of black students on standardized tests, particularly in reading and math achievement, tends to be poorer than that of white adolescents (Asbury, Stokes, Adderly-Kelly, & Knuckle, 1989; Stokes, 1990; Levine & Eubanks, 1990; & Lockheed, 1985).

Black and Hispanic students tend to dropout of school in greater percentages (Hammack, 1986; Ekstrom et al., 1986; Smith, 1986; Rumberger, 1983, 1987).

**Math achievement.** Math achievement and reasoning and problem-solving ability have been found to be significant predictors of academic achievement in the middle school (Grannis et al., 1989, Fahs, 1978), of staying in school (Bachman, O'Malley, & Johnston, 1978), and of educational attainment (Jencks et al., 1979).
Reading achievement. Minority students, particularly Afro-American and Hispanic youth, tend to score lower on reading achievement tests using standard English (Levine, Eubanks, 1990; Claytor, 1978). Low achievement, low verbal ability, and low reading ability are factors influencing the student's decision to dropout of school (Ekstrom, et al., 1986; Zeller, 1970).

Family Variables

Family socioeconomic level (FSEL), family rapport/discord, family size, and family structure, are the family factors most frequently cited in relation to academic achievement, social competence, and mental health status.

Family socioeconomic level. Family socioeconomic level, a student rating of the family's socioeconomic status, has been reported as one of the strongest predictors of educational attainment and of dropping out of school (Ekstrom et al., 1986; Bachman, O'Malley, & Johnston, 1978). Socioeconomic status (SES) has been shown to be a strong predictor of reading achievement (Dolan, 1983; Anderson, Wilson, & Fielding, 1988).

Family rapport/discord. Family discord, particularly mother-child discord, was reported to be a significant predictor of children's school competence and activity competence (Feldman, Stiffman, & Jung, 1987). Marital discord and parent-child separation have been associated with behavioral problems in school and conduct disorder in boys (Emery, Weintraub, & Neale, 1982; Rutter, 1971). Social competence was predicted by warm, responsive parenting (Pettitt, Dodge, & Brown, 1988); while lack of acceptance and understanding in the home was related to dropping out (Cervantes, 1966).

Family structure. Werner and Smith (1982) noted that single-mother households experience more stress and are associated with poor coping in
youth unless alternative caretakers are available in the household. Rosenberg (1965) observed greater anxiety and lower self-esteem in high school school youth of divorced families than in youth of intact families.

Family size. Family size was negatively associated to behavior problems in youth with mentally-ill family members (Feldman et al., 1987). Steelman (1985) observed that sibsize was negatively related to intellectual growth; and Bachman et al. (1978) reported that family size was negatively associated with educational attainment.

Individual Coping Patterns

Coping patterns and coping skills are first developed in the home environment and are demonstrated in the school setting through academic achievement, school behavior, and social competence.

The relationship of personality characteristics, individual coping styles, and resiliency in youth to competence in the urban school setting has become of increasing interest to researchers. Externalizing (external locus of control), aggressive behavior, and being disengaged from the schooling process have been reported as coping styles which predict poor competence in school (Garmezy, Masten, & Tellegen, 1984; Fahs, 1987; Grannis, Fahs, & Bathea, 1989).

Coping skills have been defined as the unique personal abilities that enable a child to resist significant environmental stressors (Feldman et al., 1987). A student's cognitive and problem-solving abilities, persistence, and friendship-making ability are examples of coping skills. Coping and stress in childhood have become of increasing interest to investigators (Rutter, 1983; Kapan, 1983; Wallerstein, 1983; Garmezy, 1981).
Coping patterns reflect the individual's personality and serve as the bridge between family and school. Parent modeling of behavior, parental marital relationships, and parent-child relations all influence the configuration of a child's coping pattern and which coping styles predominate (Millon, 1969, 1981).

Millon, Green, and Meagher (1982) developed the Millon Adolescent Personality Inventory (MAPI) to measure coping patterns and self-discontent. The first eight scales of the MAPI are the eight personality/coping styles derived from Millon's biosocial-learning theory. These coping patterns are expressed in a profile which indicate what coping styles predominate and the degree of psychopathology of the particular youth.

Importance of the Problem

Characteristics of the person, family characteristics, and individual coping styles all contribute to the urban youth's competence in the middle school. Few studies have investigated how these three sets of variables predict school-based competence.

Purpose of This Study

This study is a multivariate investigation of the relationship of person, family, and coping pattern variables to academic achievement, attendance, and social competence in the urban middle school. The relationship of both individual variables (e.g., sex, family rapport, passive-dependent coping) and sets of variables (person variables, family variables, and coping patterns) to school-based competence will be investigated. It is of interest to discover which variables and sets of variables are the strongest predictors of competence.
Predictive Model

A predictive model of school-based competence was created to integrate the findings on school achievement and dropping out. This model was purposely created to be explanatory of the relationship between person, family, and individual coping variables and the criteria of school-based competence. (see Figure 1).

Sex, age, and family socioeconomic status (SES/Family SEL) have been frequently reported as variables which are relevant to school competence and dropping out. Sex, age, family rapport/discord and Family SEL were reported in the literature as variables relevant to coping, mental health, psychopathology, and behavior problems. For these reasons, these four variables are given precedence when used in regression models.

In this study it was decided to follow the statistical format of Garmezy et al., (1984) in their study of urban youth competence. The variables of sex and age are first entered into the regression models to give priority to organismic characteristics over environmental characteristics. In this manner the effects of sex and age on school competence can be controlled as the relationship of other predictor variables to school-based competence is investigated.

Secondly, in the regression model of sex, age, and the set of family variables predicting school competence, Family discord and Family SEL are purposely given precedence and priority over other family variables. Using hierarchical multiple regression analysis, these two variables are entered into the model before other family variables; thereby reserving greater power of (F) test for these two variables. This step was taken because these two family variables are deemed to be of greater theoretical importance than the other family variables in study.
FIGURE 1 Predictive Model of School-based Competence
Finally, the predictive model of school-based competence assists in the causal ordering and the grouping of variables for the hierarchical analysis approach to multiple regression/correlation analysis (MRC). Hierarchical analysis has been shown to be a powerful and efficient statistical tool for the logical ordering and analysis of multiple variables (Cohen & Cohen, 1983; Garmezy et al., 1984). Using this predictive model in conjunction with hierarchical MRC permits a sophisticated and sequential check of the contribution of these independent variables on grades, attendance, and social competence in the urban school setting.

Definition of Terms

Coping Patterns

Coping patterns are predominant ways of acting or responding to one’s environment and includes: whether a person tends to initiate behavior or react to it; whether the individual largely depends on self, other, or a mix of self and other for fulfillment of needs; and whether the person is primarily oriented toward pleasure or pain for the reinforcement of behavior and needs.

Family Discord

The family rapport/discord dimension is measured by the family rapport scale (G) of the Millon Adolescent Personality Inventory (MAPI). High scores indicate that the adolescent experiences discomfort, rejection, and conflict in the family. Low scores are indicative of family rapport and of the youth experiencing comfort, acceptance, and mostly harmonious relationships in the family.
Social Competence

Social competence is a judgment by self or other as to how well an individual adapts to his environment, including social skills, friendship-making ability, and peer acceptance.

Study Limitations and Assumptions

Limitations

The limitations of the study were as follows:

1) The subjects were recruited from English classes of three Columbus middle schools.

2) The subjects who participated needed parental permission forms. Parental attitudes and parent-child relations may have dictated who participated.

3) A small percentage of Columbus eighth graders participated in this study; therefore the findings of this study are restricted to urban white and Afro-American eighth graders.

4) The cross-sectional nature of this correlational-predictive study is a limitation. A long term study would better indicate the accumulative effects of family discord on coping patterns and school competence, and the effects of coping patterns on school-based competence over time.

Assumptions

It can be assumed that a large proportion of the subjects were more motivated than their peers to participate. Conversely, those youth who didn’t return permission forms were less motivated to take part in a paper and pencil study and may have had parents opposing their participation.
Theoretical Hypotheses

The following null hypotheses are to be investigated:

**Family discord as predictor**

After having included sex and age in the model, family discord will not make a significant contribution to the variance of the dependent variable when added to the regression model.

**Sex X family discord as predictor**

After having included sex and family discord in the model, the interaction variable of sex X family discord will not make a significant contribution to the variance of the dependent variable when added to the regression model.

**The set of family factors as predictor**

After having included sex and age in the regression model, the set of family variables will not make a significant contribution to the variance of the dependent variable when added to the regression model.

**Coping patterns as predictor**

After having included sex and age in the regression model, the set of coping patterns will not make a significant contribution to the variance of the dependent variable when added to the regression model.

**The set of family variables as predictor after controlling for the set of person variables**

After having included the set of person variables in the regression model, the set of family variables will not make a significant contribution to the variance of the dependent variable when added to the regression model.
Summary

The predictive model of school-based competence and hierarchical analysis to MRC assist in the construction of the hypotheses for this study. Hypotheses and regression models are constructed to give logical and sequential priority to variables deemed theoretically significant. These significant variables are entered first in the regression model so that the variance accounted for by these variables is not diminished by variables of lesser import to the logic and theory of this study.
CHAPTER II

LITERATURE REVIEW

Scope and Format of the Literature Search

The literature search examined issues relevant to urban school competence. Dropout literature was examined for factors related to staying in school and leaving school early. Mental health and competence literature gave clues to what helps youth cope and what is related to social competence. Educational and psychology literature was reviewed to identify important individual and family characteristics relevant to coping, academic achievement, attendance and social competence. Dropout literature of the past twenty-five years was reviewed. The last ten years of literature on coping and social competence was reviewed.

(1) Millon’s biosocial-learning theory and its relevance to this study will begin this review. The predictive model of school-based competence offers a good organizational framework for the remainder of this chapter. (2) The second section of the literature review discusses person variables as predictors of academic and social competence and dropping out of school. (3) The third section of this review examines family variables related to competence in school and mental health. (4) Fourthly, individual coping and its relationship to mental health and school-based competence will be discussed. The final two sections discuss (5) predictors of school-based competence and (6) measuring social competence.
Biosocial-learning Theory

Theodore Millon (1969, 1981) formulated his biosocial-learning theory from an extensive review of clinical and neuropsychological literature. Using concepts of neuropsychological stages of development, including Piaget’s hierarchic order of intellectual development and including concepts of sensory-attachment and impoverishment developed by animal researchers such as Lorenz (1935) and Harlow (1960) and infant researchers such as Bowlby (1952) and Yarrow (1961) and by weaving in Erikson’s (1959) concepts of child development where they are appropriate, Millon has created a modern and comprehensive theory of child development and psychopathology. Biosocial-learning theory espouses three stages of neuropsychological development: sensory-attachment, sensorimotor-autonomy, and intracortical-initiative.

Sensory-attachment (Stage 1) occurs during the first two years of life and sensory processes predominate during this time. An inadequate environment providing inadequate stimuli develops children with marked deficits in social attachments.

Sensorimotor-autonomy (Stage 2) occurs primarily between the ages of one and four. The child develops focused, voluntary movements, and the child begins to crawl, explore, babble, and manipulate objects. The child develops an ability to entertain him or herself, an important capacity for later cognitive tasks. The learning during this stage is critical for school readiness. Clarke and Clarke (1976) found that children who were isolated or ignored at home or in institutional settings until age 4 obtained IQ’s no-higher than the 50s. When some of these children were shifted to caring and stimulating adoptive homes before age 4 their IQ’s improved dramatically—to the 80-100 range.
Intracortical-initiative stage of development ranges from the age of four to eighteen (Millon, 1969). Based largely on the work of Piaget and Erikson, this stage sees the child develop language skills and the capacity to symbolize objects. During the school years the child develops the capacity to manipulate and coordinate these symbols, and the child learns to write sentences, recall events, share stories and songs, and plan activities. Increasingly sophisticated schemas and cognitive structures develop within the child to internally represent and explain outside events.

Millon (1969, 1981) has incorporated the concepts of modeling behavior, vicarious learning, and self-efficacy from Social Learning theory (Bandura, 1977; Bandura, & Walters, 1963) into his Biosocial-Learning theory. A youth in the intra-cortical stage has developed schemas for judging such concepts as ‘what is a teacher?’ ‘how are boys and girls different?’ ‘am I a good speller’ and ‘school is important or not important because....’ Bandura maintains that youth with such cognitive capacity are capable of imitating and quickly learning complex behaviors from peer and adult models.

Millon derived eight coping styles from the "three polarities that govern all mental life" (Millon, 1981). The active-passive dimension indicates whether an individual takes the initiative with events or whether the person’s behavior is largely reactive to events. The pleasure-pain dimension indicates whether the individual is motivated by positive or attractive reinforcing events or aversive or negatively reinforcing events. Thirdly, the dimension of self-other is similar to the introversive-extroversive dichotomy and the concept of internal versus external locus of control.
Millon (1981) states that dependent personalities find their source of reinforcement within others and thereby arrive at feelings of pleasure and avoidance of pain. In contrast, the independent personalities have learned to find maximum pleasure and minimum pain by relying on themselves. The ambivalent personalities are in conflict regarding whether to depend on themselves or on others for reinforcement. They vacillate between conformity and independence, and between feeling accepted and feeling hostile. The detached personalities have a deficit capacity to experience pleasurable reinforcers and they tend to alienate themselves from others.

Millon (1969, 1981) uses the three dimensions of mental life and the six basic personality/coping patterns to formulate eight mildly pathological coping patterns. The passive-dependent coping pattern individual is a submissive personality who assumes a passive role in interpersonal relationships. The active-dependent coping pattern individual is a gregarious, histrionic personality who actively seeks attention and affection. The passive-independent coping pattern individual is characterized by egotistic self-involvement and exploitation of others. The Passive-ambivalent personality struggles with fear of social disapproval and hostility toward others. Behind this type's facade of social restraint are feelings of anger and intense opposition. The passive-detached individual is a passive observer of life and has no interest in the rewards and demands of human relationships. The active-detached individuals are constantly vigilant to protect themselves from the repetition of painful events.

Millon (1969) states that these coping patterns are largely the product of environmental influences. He states that the active-ambivalent, negativistic youngster, for example, has been exposed to more than his share
of parental inconsistency. When parents chronically vacillate from hostility and rejection to love and affection, a youth is encouraged to develop this negativistic, active-ambivalent coping pattern.

The Millon Adolescent Personality Inventory (MAPI) was developed from Millon's biosocial-learning theory and his eight basic coping patterns and from the Rogerian model of self-actualization. The first eight scales of the instrument were constructed to assess the student's basic style of relating to others—the student's basic coping pattern. The second group of scales assess personal growth and sense of self (including family rapport/conflict and the level of comfort experienced within the family). The final four scales are a self-rating of educationally-troublesome behaviors (e.g., poor attendance, noncompliance). The MAPI can be used by school counselors to assess the student's adjustment to school, school competence, self-discontent, and the student's predominant coping patterns.

Summary

Millon's biosocial learning theory and his eight basic coping patterns help explain adolescent behavior and psychopathology. The MAPI was constructed to assess adolescent coping, maladjustment, and competence in the school setting. This study will investigate how well the MAPI predicts school-based competence. Particularly, the first eight scales of coping patterns and the family rapport/discord scale (G) and their relationship to school competence will be investigated.

Person Variables

Age, sex, race, math and reading achievement are variables that are most frequently cited as relevant academic achievement, at-risk behavior,
and dropping out. In this multivariate study it is critical to investigate how these person variables influence grades, attendance, and social competence. By controlling for sex and age differences, for example, we get a clearer view of how other sets of variables contribute to school-based competence.

Age

Being overage for one's grade, usually as a result of being held back in earlier grades, has been a consistent predictor of dropping out of school. Hammack (1986) observed that in Los Angeles (1981-82) over-age was the most frequent code used with dropouts, and in Miami (1980-1985) that being overage in the eighth grade was very strongly associated with dropping out. Studies from the 1960s to the present suggest that being overage for one's grade and being 17 or 18 during the ninth or tenth grade classifies youth as "at risk" of dropping out (Bowman & Matthews, 1960; Schreiber, Kaplan, & Strom, 1966; Ekstrom et al., 1986; Sherrada, 1986; Poulos, 1986; Goll, Holland, & Lanese, 1989.) Galloway (1983) also observed that as youth reached age 16 (the legal age to stop attending school in Britain) their attendance became significantly poorer than that of younger students.

The literature shows a similar relationship between age and antisocial behavior. Mensch and Kandel (1988) suggested that as youth grow there are greater opportunities for deviant behavior, and they suggest that age, drug and alcohol use, and dropping out are related. With increasing age and multiple drug use, drug-abusing youth are increasingly absent from school and retarded in their educational attainment (Cohen & Santo, 1979). Beschner and Friedman (1979) observed that the earlier a student in high school begins marijuana use, the more likely that he or she will fail in school and perform poorly on personal competence measures.
A final, important reason for including age in the predictive model of school-based competence is the fact that this variable carries important information on maturation and the independence of youth from their families. In general, as a child learns self-help skills and social skills in the home, she or he becomes more involved with peers and less dependent on the family with increasing age. Erikson (1950) has noted stages of development the child passes through with increasing age as the child becomes increasingly autonomous. Ausubel (1954) observed that pre-teen and older youth are increasingly peer and social group oriented. Glasser (1975) has stated that the teenage years are involved in a struggle with identity and self-esteem issues. Millon (1969) has observed that adolescents develop increasingly mixed coping patterns with age as they observe parents and peers handling situations; either healthy, neurotic, or increasingly schopathological coping styles develop in the youngster over time. These coping patterns may determine how well a youngster adapts to the school setting.

Sex

Just as age affects the likelihood of dropping out, so, too, have sex differences been observed in dropping out behaviors, with boys dropping out at higher rates than girls (Hammack, 1986; Ekstrom et al., 1986; Rumberger, 1987). The sexes differ in reasons for dropping out, with males frequently citing poor grades, dislike of school, working, and inability to get along with teachers (Bowman and Mathews, 1966; Hammack, 1986), whereas females more often cite marriage, dislike of school, poor grades, and pregnancy (Ekstrom et al.; Hammack; Bowman and Matthews). The interaction of sex, social values, and personal characteristics factor into the different reasons
between the sexes for dropping out. For example, Poole and Lowe (1983) observed that girl leavers tend to earn higher grades, be more introverted, and have lower achievement motivation than boys. Leavers of both sexes rarely discussed their job plans with their parents.

In their study of urban eighth grade youth at a New York City middle school, Grannis, Fahs, and Bathea (1989) and Fahs (1987) found girls to earn higher grades, to be more sensitive to others, and to have higher average stressor appraisal than boys. Boys who were academically successful were found to be more sensitive and to have stronger stressor appraisal and associated positive behavior than less successful boys. Boys who were more aloof to stressful events and their school surroundings adjusted poorly to the school setting.

In their study of Chicago dropouts, Lichter et al. (1963) observed behavior differences between boys and girls. Boys had more behavior problems at earlier ages than the girls in their sample despite the fact that girls came from lower SES families. Cultural expectations and tolerance for boys' aggressive and competitive behavior allows the school setting to be a good arena for boys to express their defiance of parents and teachers and their conflicts over male adequacy. Lichter et al. conclude:

We believe the reason why boys outnumber the girls in our project population, as well as in the drop-out population as a whole, is that for boys school provides a special culturally determined focus for rebellion and conflict formation. (p.61)

They observed that girls, as they became teens, would reject previously held values of school achievement and would make love and marriage their goals. With the maturation process and its accompanying stresses, the underlying personality problems of these girls came to the foreground (Lichter, et al). In
contrast, as the dropout boys matured, they merely continued their rebellious behavior; unable to cope with the pressures of academic achievement, they would, in a passive-aggressive manner avoid school and its demands.

Race

Race was seen to be a most important predictor of being suspended from school in New York State school districts during the 1970's (Block, Covill-Servo, and Rosen, 1978). Block et al. found that many of the secondary schools in Buffalo, Rochester, and Syracuse city school districts suspended black and Hispanic students three to four times as often as white students. A pervasive intolerance for children who are different (and minority), and administrative practice and policies rather than student behavior, were cited for the incidence of suspension. With Goll, Holland, and Lanese (1989) finding that absence and suspensions were the variables which best describe youth "at risk" for dropping out, it is not surprising to find that black and Hispanic youth drop out of school in higher percentages than white students (Hammack, 1986; Ekstrom et al, 1986; Smith, 1986; Rumberger, 1983, 1987). Dropout and discipline in the school studies like those done in New York state (Smith; Block et al,) may have helped reverse discriminatory practices by school administrators in recent years. Rumberger (1987) observed some reversal in dropout rates between blacks and white in recent years, with a drop in rates for black students and a slight increase for white students. In Columbus Public Schools, former Assistant Superintendent Howard Merriman observed that white males are dropping out at increasing higher rates.

In addition, black students tend to perform more poorly on standardized achievement tests, particularly in reading and math

Yeakey and Bennett (1990) believe much of the difference between black and white students’ academic achievement can be explained by poverty, family socio-economic status, and family structure. In the last two decades there has been a rapid increase in single, female-headed households, and Yeakey and Bennett state that the number of Afro-American children growing up in fatherless families increased by 41 percent between 1970 and 1980. They also state that the poverty rates of Afro-American and Hispanic-female-headed households exceeded 50 percent in 1982. This poverty is a good predictor of academic performance because the conditions of poverty discourage the supportive expectations that enhance learning.

Yeakey & Bennett (1990) maintain that test constructors who design intelligence and achievement tests for minority youth need to broaden their concept of the black intellect. Madhere (1989) states that most attempts to create culture-fair intelligence tests have centered on efforts to change verbal to figural items. He believes that such test modification can be sensitive to the Black culture by tapping into the kinesthetic (e.g., dance, rhythm) modality rather than the figural modality. Sattler (1982) maintains that the culture of poverty creates a different intellect and a different style of coping that contrasts poor children from their peers. He believes that premature structuring occurs in these children of poverty when these children are forced to apply their abilities to practical matters before these abilities are fully elaborated. Different cognitive structures and languages develop which change the way these children cope, mobilize, set goals and delay gratification. The resultant cognitive structures and coping styles affect how these youth perform on tests and how they do in school.
Math achievement

The debate continues to rage over the racial and cultural fairness of IQ tests. McGurk (1982) in his review of black, Hispanic, and white high school youth IQ test scores, found white students to score consistently and significantly higher than the other groups. Graziano, Varca, and Levy (1982) found that no definite conclusion could be reached on the effect of the race of the examiner on the performance differences between black and white youth on IQ tests. Methodological inadequacies of some of the studies examined precluded clear conclusions. Reynolds and Jensen (1983) examined the performance of black and white youth on the WISC-R, and found that whites exceeded black children on performance (primarily spatial visualization ability); no significant differences were found on verbal ability; and black children did better on tasks of memory. They concluded that black-white differences are primarily due to differences in general ability; however, they stated that the particular sources of black-white differences in mental skills remain to be discovered.

Murray and Levine (1966) point out that cultural differences also enter into the performance of youth on IQ tests. While upper and middle-class youth appear to have an intrinsic motivation to perform correctly and to work effectively on tests, this assumption cannot be held for lower-class children. These authors maintain that lower-class children require tangible rewards to work effectively.

Walsh and Betz (1985) maintain that standardized achievement tests are useful in comparing average levels of performance across different schools of a school system. Jencks et al. (1979) examined (Project Talent) national data on high school and their eventual educational attainment and
economic success. They found that tests of academic ability predicted economic success better than other tests. Tests covering a wide range of academic ability were better predictors of economic success than of a single ability. They concluded:

These results suggest that academic, verbal, and quantitative ability predict educational and economic success better than other kinds of information or cognitive skills. (p. 91).

Jencks et al., and Spreen (1984) have noted that adolescent mathematics achievement is one of the best predictors of later adult success. Math achievement scores were consistently found to be the strongest predictor of SPA in a New York City middle school (Grannis et al., 1989). Similarly, Ekstrom et al., (1986) found that poor mathematics skills, measured by sophomore year achievement tests, and sophomore year grades were key indicators of dropping out, particularly for white students.

Stokes (1990) states that the National Assessment of Educational Progress report found that youngsters are progressing in lower order math skills (computation) at the expense of higher order skills (problem-solving, etc.). Stokes investigated a sample (n = 74) of young Afro-American students to determine to what extent income, level of cognitive development, gender, and chronological age predicted mathematical performance. She found that age and level of cognitive development predicted a large and significant percentage of the variance in math computation, math word problems, and in total math performance in youngsters.

Stokes states that her results replicate the findings of Hiebert and Carpenter (1982) who reported a positive relationship between level of cognitive development and the ability to solve arithmetic problems. She
states that her findings illustrate Piaget's (1969) and Vygotsky's (1962) beliefs that logical thinking and cognitive ability are enhanced in a series of stages through social interaction. Her results, she states, substantiate Piaget's argument that cognitive development is an important and necessary ingredient in a child's preparation for mathematic experience.

The literature suggests that achievement tests tend to be a better predictor of school performance, educational attainment and adult economic success than other kinds of tests, including intelligence tests. For this reason achievement scores from the Comprehensive Tests of Basic Skills (CTBS norms U and V) were selected for use in this study. The mathematics section of the CTBS (forms U and V) includes 40 items of mathematics computation and 45 items of mathematics concepts and application. The CTBS Technical Manual reports a correlation of .71 for total reading and total math scores for eighth graders (n = 1,138). The total battery of achievement test scores for this sample correlated .93 with total scores math scores. Thus, achievement (as measured by the CTBS) can be a good indicator of the general achievement level for a middle school student.

Test constructors of the CTBS (U and V) conducted bias analysis of pre-test data to ensure that item content of this instrument did not favor a particular racial group (CTBS Technical Report; Diamond and Elmore, 1986). Math items were purposely structured so that slower students would have time to work each kind of math problem. Reliability and internal consistency of the math achievement section has found to be good with a Kuder-Richardson-20 (KR20) of .92.

**Reading Achievement**

In their Youth in Transition studies Bachman (1970) and Bachman et al. (1978) examined cognitive ability and family factors as predictors of
educational attainment in a national sample of high school boys. For their measure of cognitive ability, these researchers used a composite of scores from the Gates Reading test, the Vocabulary sub-test of the GATB-J, and the Ammons Quick Test. These researchers found a strong relationship between this ability composite and educational achievement, educational attainment and dropping out. In addition, they found reading comprehension and vocabulary skill had strong associations with family socioeconomic level.

Poor reading ability has been associated with dropping out of school. Zeller (1970) cited low grades and low reading ability as primary factors for identifying dropouts. Poor reading ability was one of the main factors encouraging black and Hispanic students to drop out of New York state public schools (Block et al.). Ekstrom et al. (1986) observed that sophomore students with behavior problems (and at risk of dropping out) were males with low verbal ability as indicated by vocabulary test scores. In a Cincinnati study of dropouts, 92 percent scored in the average or below average range of reading level (Phi Kappa Delta, 1989).

Claytor (1978) completed a multivariate study of Columbus (Ohio) elementary students and their reading achievement. She found that non-white students scored lower on tests of reading achievement, were less confident in social situations, and made less use of alternative learning methods.

Levine and Eubanks (1990) examined the reading achievement scores of white, black, and Hispanic suburban youth and observed the scores for the two minority groups were nearly a half a standard deviation lower than those for white students.
The home environment and encouragement of spare time reading and its relationship to reading achievement has also been investigated. Dolan (1983) found that the educational environment of the home was a significant predictor of standardized reading achievement. Reading books at home was the best predictor of several measures of reading achievement (Anderson, Wilson, & Fielding, 1988).

The CTBS reading achievement tests (vocabulary and reading comprehension) were put through a bias analysis with the 45 items retained for each test having significantly lower bias ratings than the items excluded. Reading comprehension and vocabulary subtests received excellent internal consistency ratings (KR20) of .93 and .94 respectively.

Summary

The person variables of age, sex, race, math achievement and reading achievement have been found to be important variables in predicting school performance, educational attainment, and dropping out. It should not be surprising to find this set of variables to be a significant predictor of school-based competence.

Family Variables

Family discord/rapport, family socioeconomic level, family size, and family structure have been shown to be variables that relate significantly to academic achievement, social competence and mental health of youth.

Family discord/rapport

Research has shown that family conflict is related to difficulties in children's and adolescents' functioning as reflected by coping problems and deficits in cognitive and social competence (Feldman, & McCombs, 1988; Shaw & Emery, 1987).
In their longitudinal, multivariate study, Feldman et al. (1987) examined the influence of mentally-ill parents family relations, spousal conflict, and parent-child conflict on the adaptation and behavior of at-risk children. Mothers with affective illnesses had a particularly detrimental effect on their children because this disorder prevented them from establishing harmonious relationships with their children. Mother-child discord was found to be the most problematic form of family discord and was strongly correlated with behavioral problems in at-risk youth in both single and two-parent families. In addition, the frequency of father-child discord and of family discord was strongly related to behavioral problems in youth.

Feldman et al. (1987) reported that mother-child discord explained significantly more of the variance in Achenbach Behavior Checklist (CBCL scores) of children than father-child discord. Feldman et al. observed mother-child discord, family discord, and the proportion of mentally ill family members to be the best predictors of children's behavior problems. Family discord was found to vary directly with the proportion of mentally ill family members. Although no relationship was found between family discord and achievement scores on the Wide Range Achievement Test (WRAT-R) a rather brief achievement measure, Feldman et al. found that children who experience rather frequent mother-child discord had relatively low levels of activity competence, and this that discord was associated inversely with school competence. In general, these researchers concluded that academically-oriented coping skills are impervious to family discord, and family rapport does not assure good academic achievement.
Since the pioneering work of Rutter (1970), a number of researchers have linked family discord with mental health and behavior problems in youth. Rutter concluded that the quality of family relationships was the most important variable in relation to the rate of behavioral and psychiatric disorders in children. He found that the worse the parental marriage, the higher the rate of antisocial disorders in the sons and that lack of parental warmth toward children was also related to the rate of antisocial disorders in boys. Emery and O'Leary (1982) also found marital discord to be strongly related to conduct problems in boys. Rutter (1971) observed that in divorce and parent-child separation, there were significantly higher rates of behavior disorder and delinquency when there was high tension and hostility between parents than with low tension separations.

Parental mental illness, particularly affective disorders and personality disorders, have been linked with family discord and psychiatric illness in children. Gammon (1983) reported that children of depressed parents are much more likely to suffer emotional disturbance, attention-deficit disorders, separation anxiety, and conduct disorders than children of normal parents. Rutter, Quinton, Rowlands and Berger (1975) found parental personality disorder, prolonged marital discord, and parent's irritability and hostility toward the child to be factors most strongly associated with psychiatric disturbance in children. Weissman et al. (1984) found that children of depressed parents and children with two mentally ill parents were particularly at risk of school problems, emotional problems and DSM-III diagnosis. Feldman et al. came to the same conclusion in their longitudinal study of at risk children.

A number of recent studies investigated the relationship between interparental conflict and school performance. Wierson, Forehand, and
McCombs (1988), in their multivariate study (using hierachical MRC) found that adolescent perception of parental conflict contributed unique variance to deficits in cognitive functioning beyond that accounted for by parental report. They found a stronger relationship between family member perception of conflict and the cognitive variables of grades (GPA) and teacher rating of cognitive competence than between perceived conflict and social/behavioral variables. Feldman, Wentzel, Weinberger, and Muson (1990) observed that fathers’ marital satisfaction was significantly correlated with their sixth grade sons’ achievement change scores (as measured by the California Tests of Basic Skills/CTBS) and their ability to restrain themselves in social situations. In Germany, Hurrelmann, Engel, Holler, and Nordlohne (1988) observed significant relationships among the frequency of psychosomatic disorders, risk of failure in school, and emotional conflict in the family.

Urban adolescents’ perception of teacher support in school and their perception of the level of cohesion in their family system were consistently associated with favorable adaptive outcomes in the urban school setting. Family Cohesion (as measured by the Family Environment Scale, FES; a concept similar to family rapport) proved to be the most consistent predictor of self-concept and grades, but not of absences (Felner, Aber, Primevera, Cande, 1985). McCombs, Forehand, and Smith (1988) investigated maternal problem-solving and its relationship to adolescent social functioning. Mothers who modeled an integrating, information-exchanging, creative problem-solving style tended to have youngsters with greater social competence than other mothers. A third positive component of family life, acceptance and understanding has been linked to school adjustment. Cervantes (1966) observed that graduates of high school saw their families as
accepting of each other as complete persons, while dropouts tended not to experience such acceptance and understanding.

Millon (1969) and Bandura (1977) point out that a child learns more from incidental behaviors and attitudes parents display and from vicarious experiences in the home than from intentional parental training. Millon points out that each family has its own style of communicating, its particular patterns of listening and attending, and its unique way of conveying thoughts and feelings to one another. When this family communication system is irrational and/or hostile, the child internalizes this model and will have difficulty functioning well with others. Adolescents from these families may likely become at-risk youth. Millon (1969) states that children who have been exposed to extremely inconsistent parenting models, who may be hostile and rejecting one moment and affectionate and loving the next, tend to develop negativistic, active-ambivalent coping patterns. These youth are continually struggling with inner conflicts and therefore have great difficulty adapting to social environments.

Millon (1969) believes that chronic parental conflict and nagging encourages pathological behavior, anxiety, insecurity, instability, and inner conflict in youth.

The resultant confused mental state, in conjunction with the learned models of conflicting and destructive behavior, ill equip these youth for the school setting. Millon (1981) describes in some detail how deprecating, hostile, and inconsistent parenting styles influence the creation of avoidant, compulsive, borderline and other types of pathological personalities.

The Family Rapport (G) scale of the Millon Adolescent Personality Inventory (MAPI) was purposely created to allow adolescents to express their concerns with their family. This scale is a measure of a teenagers feeling of
comfort and harmony or discomfort and tension that is experienced in the family (Millon, Green, Meagher, 1982; Meagher, Zuskar, Millon, and Green, 1978). Meagher et al. state that the MAPI was developed to assess adolescent self-discontent; and in terms of Rogerian theory, a teenager who experiences a large discrepancy between the real and the ideal self would experience psychological discomfort. A teenager who lives in a family environment where depreciations and hostility are the norm would likely be discontented and would rate his family discordant (with a resultant high score on the family rapport/discord (G) scale).

Family discord has been associated with behavior problems in children and youth, psychiatric illness in children, and grades lower than those earned by children of cohesive, harmonious, or normal families. However, family discord has not been significantly associated with achievement scores and attendance in the literature.

**Family Socio-Economic Level (FSEL) and SES**

Family socio-economic status (SES) and Family socio-economic level (family SEL) are terms that have been used to describe the income, social, and educational levels of families. SES has been consistently used in the educational mental health literatures as a predictor of school and mental health competence. This section describes how family SEL and family SES are related to dropping out of school, academic achievement, school and other behaviors, and mental health in youth. In assessing the family background of a national sample of tenth grade boys and its relationship to dropping out of school, Bachman (1970) and Bachman, O’Malley, and Johnston (1978) developed a summary measure of family socio-economic level (family SEL). This composite measure of family SEL was comprised of
six components: father's occupational status (rated according to Duncan's socioeconomic index of occupations; (Reiss, 1961); father's education, mother's education, possessions in the home, number of books in the home, and number of rooms per person in the home. These researchers reasoned that this summary measure of family SEL would simplify statistical analysis and remove redundancy among these separate variables in the contribution to the variance of the criteria (grades, dropping out, etc.).

A strong relationship was found between family SEL and educational attainment, and ability (a composite of the Quick Test of Intelligence, the vocabulary subtest of GATB, and the Gates Reading test) (Bachman, et al.,). Bachman and colleagues concluded that family SEL is important in shaping ability (in school) and has positive influence on performance, aspirations, and important self-concepts (Self-Concept of School-Ability). They also observed that broken homes tended to be lower in SEL and have higher dropout rates.

Family socioeconomic status (SES) is a variable that is consistently brought out in the drop-out literature. The lower the student's family SES, the more likely the student is to drop out of school (Rumberger, 1987; Ekstrom, Goertz, Pollack, & Rock, 1986; Bachman et al., 1978; Dentler Warshauer, 1968; Matthews, 1960). Ekstrom et al. pointed out that FSES appears to reflect the quality of support for educational achievement. Number of books and study aids in the home was also cited as an important support indicator.

Dentler and Warshauer (1968) observed that community support for education plays a role in dropping out. They found that non-white high school withdrawal was related to few high income families, a high incidence of blue collar workers, white dropouts, and adult illiterates within the
community. Family SEL has been shown to affect academic and social competence in school. Bloom (1965) believes that the middle class and culturally advantaged homes provide a more complex, interactive, and corrective setting for learning. He believes that the curriculum and teaching style in these homes account for much of the differences among children in their thinking styles, their adaptability, and their performance in school.

Paternal encouragement and expectations of intellectual achievement are related to achievement in children (Belsky, Lerner, & Spanier, 1964). When mothers have achievement standards that are both high and explicit, they encourage positive attitudes toward school performance in their children (Belsky et al.). Poole and Lowe (1982) also found a strong relationship between parental expectations and dropping out of school. Parents who linked education with job prospects encouraged their youth to stay in school, while parents who did not discuss possible jobs with their youth encouraged dropping out.

Assessments of mother-infant interaction and general environmental quality were among the best predictors of IQ and language development at age two and three (Bee et al., 1982). For the low-education mothers in their sample, measures of family ecology (level of stress, social support, and maternal educations) were strongly related to child IQ and language at ages three and four (Bee et al.).

In a multivariate study of young African-American adolescents in Atlanta, Spencer, Dobbs, and Swanson (1988) reported consistent links between family SES and the competencies and behavioral problems of these youth. Lower-income youth (particularly males) had more behavioral
problems and fewer competencies than their higher SES peers. The variables of school-related self-esteem and SES-gender (interaction) were significant predictors of academic performance.

Family socioeconomic status (SES) has been linked to mental health, the ability to cope with stress, and psychopathology. In examining the relationships of parental psychopathology, SES, and student intelligence, school behavior and academic achievement, Worland et al. (1984) concluded that low SES and cognitive inadequacy cause a pattern of academic failure that affect classroom behavior and may lead to serious psychopathology. They also observed that SES had a direct influence on intelligence factors and was most strongly associated with verbal comprehension as measured by the Weschler Intelligence Scale for Children-Revised (WISC-R).

The relationship of family economic stress, parental support and adolescent maladjustment has been investigated. Economic distress was associated with increases in adolescent depression, loneliness, and male delinquency and drug use, and with decreased paternal support for female adolescents (Lempers and Lempers, 1990).

Liem and Liem (1980) reviewed the literature on the relationship of social class to life events and mental illness. Lower-class status generated greater exposure to stressful events, and lower-class individuals tend to respond to these events with greater stress, more negative affect, and more avoidant coping strategies than middle class persons.

Family socioeconomic status has been reported to be an important predictor variable for academic performance, school behavior, and school competence for adolescent youth. SES has been directly related to academic performance and competence ratings and indirectly related to school behavior and eventual dropping out.
**Family Size**

Family size has been linked to dropping out, coping and behavior problems, and intellectual ability. Family size predicted educational attainment of male youth (Bachman et al., 1978) and dropping out (Bowman & Matthews, 1960). Large families tended to be lower in family SEL and both of these variables were related to lower Quick Test scores of intelligence (Bachman, 1970). Number of siblings is related inversely to test performance and is reported to have its greatest impact under lower SES conditions (Steelman, 1985).

In a study by Feldman et al. (1987) an inverse relationship was found between family size and behavior problems of youth with mentally ill parents. The larger the family, the more a child would be buffered from mentally ill family members by other family members. Feldman et al. (1987) found that the proportion of mentally ill family members in a family was a significant predictor of serious coping problems in their children.

**Family Structure**

The relationship of family structure to academic achievement, educational attainment, and mental health has been extensively investigated during the last 25 years. In a study of New York high school youth, Rosenberg (1965) reported that academic success and divorce affected self-esteem. Divorce in Jewish and Catholic families had a particularly detrimental effect on children's self-esteem. Rosenberg observed that youth in blended (re-structured) families tended to have greater mental disturbance, more anxiety, and lower self-esteem than other youth.

Recent studies have linked alternate family structures and living arrangements with mental health and behavior problems in children and
youth. At risk children with significantly more behavior problems lived more frequently with one biological parent, in a group home or an institutional setting (Feldman et al. 1987). Feldman et al. observed a significant association between percentage of mentally ill family members and maladjustment and behavior problems in youth. Parental separation and single parenting was strongly associated with problem behavior in aggressive, hyperactive, and aggressive-hyperactive boys (McGee, Williams, and Silva, 1984). Father absence and group home placement were found to be significant predictors of suicidal behavior of adolescents (Garfinkel & Golombek, 1981). Rickel and Langner (1985) examined the short- and long-term effects of marital disruption on the psychological adjustment of urban children in New York City. They observed that children with natural fathers in the home showed the least pathology and children with surrogate fathers showed the most disturbed behavior. Likewise, Farrington (1982) reported that chronically delinquent youth had family histories characterized by continuous separation from a parent, ineffective child-rearing, and large numbers of children in the family.

Family structure has been reported to impact academic achievement and dropping out. Students from broken homes were twice as likely to drop out of school (Bachman et al., 1978). Single parenting, SES, race, low achievement scores, and low grades were listed as important factors associated with dropping out (Ekstrom et al. 1986). Dropouts tended to come from homes that were less likely to have both natural parents living there; where mothers and teenagers were working, and where teenage pregnancy and welfare support were evident (Ekstrom et al, 1986; Dentler & Warhsauer, 1968; Cervantes, 1965). Galloway (1983) reported that separation, divorce, chronic
illness of parent, parental unemployment, financial problems, government support of family, and parental mental illness and depression were all important factors contributing to poor school attendance.

Summary. Family rapport, family SEL, family size and family structure have been reported to impact dropping out of school, attendance, and school behavior. It appears likely that the set of family variables (family rapport, family SEL, family size and family structure) will impact the school-based competence of urban youth in this study.

Individual Coping

Three related terms, 'coping skills,' 'coping styles,' and 'competence' are consistently brought out in the literature on individual coping. These terms need to be defined. In addition, their relationship to school-based competence will be delineated in this section.

Coping

Coping is described as one of three basic ego processes and modes of expression which include coping, defense, and fragmentation (Haan, 1977). In a situation requiring social restraint, coping may suppress behavior, a neurotic defense may repress thoughts and feelings, and an individual with severe psychopathology may enter a state of depersonalization. The coping person in this situation restrains his or her affective-cognitive reactions when their expression would be inappropriate or dysfunctional, but remains aware of what he or she is feeling and doing.

Macoby (1983) traced the increasing complexity of coping as the youngster matures. She stated that there is an increasing repertoire of situationally relevant coping behaviors with increasing age. As a
consequence the child is less dependent on the attachment figure. As a child grows older, ideals and competencies become more important, and the child makes increasing use of social comparison to evaluate his or her performance. With age, the coping child develops sensitivity to others, self-monitoring skills, an ability to withhold judgment, and more planful, problem-solving strategies.

**Coping Skills**

Coping skill has been equated with youth being highly adaptive in stressful situations, including urban school environments (Garmezy, 1981; Garmezy, Masten, & Tellegen, 1984). A weak positive relationship was found between positive coping and final grades and a weak negative relationship was found between denial and final grade point average for a sample of female urban adolescents (Fahs, 1987). Urban middle school youth who had higher stress appraisal scores and were more sensitive in personality fared better academically at an urban New York middle school (Grannis, Fahs, & Bathea, 1989). Coping skills have been described as unique personal abilities which help a child resist significant environmental stressors (Feldman et al., 1987). Problem-solving abilities, perceptual acuity, assertiveness, and ability to make and sustain friendships were included as coping skills. In a study of Hawaiian children, Werner and Smith (1982) observed that resilient children were more socially oriented and socially responsive, were higher on verbal reasoning and preceptual motor skills, and had higher IQ scores than poorly coping youngsters. While resilient children were found to be more independent, aggressive, and active than other children, coping problem children were seen as more withdrawn and as more ambivalent.
Rutter (1983) referred to coping processes as what a person does about the stress situation. He stated that coping has the dual function of problem-solving and the regulation of emotional distress. Coping can include the changing of a threatening situation and attempts to change the appraisal of them so that they are not threatening.

**Competence**

Competence is a multi-dimensional concept used in the literature to include the terms of 'social competence,' 'activity competence,' 'interpersonal competence,' 'behavioral competence' and 'academic competence.' Gresham (1986) stressed the importance of differentiating social skills and social competence. Social skills are specific behaviors which an individual shows to adequately perform a task. Social competence is an evaluative term which uses certain criteria to judge that a person has performed a task adequately.

Anderson and Messick (1974) described the effort of a panel of experts under the auspices of the Office of Child Development of the U.S. Department of Health Education and Welfare to arrive at a comprehensive list of criteria for measuring social competence in children and youth. There was agreement that social competency was something more than intelligence and that it played an important role in both the fostering and the evaluation of children's development.

Gresham and Reschly (1987) have taken the criteria of social competence and conceptualized three subdomains: (a) adaptive behavior, (b) social skills, and (c) peer acceptance. Other researchers report similar components of social competence. Pellegrini, Masten, Garmezy, and Ferrarese (1987) reported that social comprehension was strongly related to social competence as indicated by positive peer reputation. Pellegrini et al. stated:
Children demonstrating high levels of this general social reasoning ability were viewed by their peers as popular, friendly and considerate and as leaders (p. 710).

Garmezy and Neuchterlein (1972) reported competent urban youth to be friendly, well-liked, socially responsive, interpersonally sensitive, less sullen and restless.

Werner and Smith (1982) observed that competent, resilient youth had significantly more sources of social support than serious-coping problem youth. Competent youth more frequently had close relationships with parents, teachers, ministers, friends of parents, and peers. Social competence reflects an ability to confide in others and to model oneself after competent adults.

Feldman, Stiffman, and Jung (1987) stated that the ability to communicate one's needs to others and to utilize their friendship, advice, and resources are important aspects of social competence and are integral coping skills for children and adults. In their research with 300 children of mentally ill parents, these researchers used the Social Competence Scale of the Achenbach Child Behavior Checklist (CBCL) to measure social competence. Parent ratings of items on this subscale yielded subscores of student involvement and attainment in the areas of social-interpersonal relationships, activities, and school performance. These areas were labeled as interpersonal competence, activity competence, and school competence and together they denoted 'social competence,'

Garmezy (1973, 1981) and Garmezy, Masten, and Tellegen (1984) have conducted Project Competence during the past ten years to examine competence and incompetence in children at risk for psychopathology.
Competence in adolescence included such dimensions as environmental adaptiveness, social responsiveness and sensitivity, self-control, good academic skills and emotional stability (Garmezy, 1981). Deficiencies in social competencies and in attentional functioning were found to be twin factors suggestive of potential risk for later maladaptation. A study conducted by Hurt (1988) provided specific documentation that attentional deficiencies differentiate normal and delinquent adolescents. Hurt found that male, adolescent delinquents were significantly poorer in their use of selective attention compared to an equivalent group of normal, male adolescents.

**Competence versus psychopathology.** Achenbach and Edelbrock (1978) completed an empirical review of clinical studies of children and youth and observed some interesting relationships among psychopathology, the coping styles, and the competence of these children. Through second order analysis, these researchers arrived at four broadband syndromes: 'overcontrolled,' 'undercontrolled,' 'pathological detachment,' and 'learning problems.' Children classified as undercontrolled have been categorized as externalizers and overcontrolled children have been labeled as internalizers. The undercontrolled children have been classified by hyperactive, distractible, undomesticated, and socialized delinquent syndromes; and the overcontrolled children have been classified by the shy-reclusive and over-anxious-neurotic syndromes. Achenbach and Edelbrock concluded that the undercontrolled and overcontrolled children are very different types of children who come from very different families. They state:

Undercontrolled children and their families are in open conflict with other people, are less socially competent, and are less appropriate candidates for traditional mental health services (pp. 1293-94).
The relationship between student personality characteristics and school adjustment and achievement have been investigated since the 1960's. An intensive, psycho-dynamic study of Chicago dropouts was conducted to determine the role of neurosis and character disturbance in the behavior of these youth. Lichter et al. (1963) found that the majority of these youth were suffering from budding character disorders. The majority of the students in their study were described as either oral, passive-dependent or as oral-aggressive. Using the 16 Personality Factor Inventory, Cattell and Butcher (1968) and Dielman and Barton (1983) found that conscientiousness and self-sufficiency were important personality traits in encouraging achievement in sixth and seventh graders.

Recent studies are linking particular coping styles to competence in the school setting. Werner and Smith (1982) observed resilient kids to be more independent, active, and aggressive and serious-coping problem kids to be more withdrawn and more ambivalent than their peers. Fahs (1987) found a strong, negative relationship between peer assessment of disruptiveness and final grades in the eighth grade for both boys and girls. Grannis, Fahs, and Bathea (1989) observed competent youth in the urban middle school to be more sensitive and to have greater internal locus of control than their peers.

Predictors of School-based Competence

Age, sex, family socio-economic level (FSEL:SES), family conflict, parental mental illness, child temperament and individual coping are all factors which affect a youth's competence in the middle school setting and elsewhere.
The dropout literature has already made clear how being overage for one's grade is a detrimental factor for both coping in school and completing school (Cervantes, 1966; Zeller, 1966; Poulos, 1986; Ekstrom et al., 1986). Average youth experience additional stress from family and peer judgments that they are not achieving as they should. In addition, overage youth who are not strongly supported in continuing their schooling and who see themselves as 'failing' in the school setting may feel compelled to prove themselves worthy elsewhere, particularly in the workplace. This factor probably accounts for many youth citing 'getting a job' as the reason for dropping out.

Urban female adolescents have been observed to obtain better grades than males (Grannis, Fahs, & Bathea, 1989). In a study of economically distressed Hawaiian families, girls were found to cope better in school and other settings at early ages than boys. By their teenage years, both boys and girls had equivalent rates of serious coping problems.

Boys were found to be more vulnerable than girls to father absence and family conflict and therefore had more coping and behavior problems (Werner & Smith, 1982). Rutter and Quinton (1984) observed that parental marital discord and father's personality disorder were strong predictors of conduct disorders in boys. They concluded that the hostility experienced in the family life and the social impairment modeled by fathers were extremely detrimental factors for the social competence of male youth.

Children of female schizophrenics were found to have more serious behavior problems than children of male schizophrenics or other mentally ill parents. However, when fathers were supportive or sympathetic to these children, they were able to find ways of coping (Clausen & Huffine, 1979).
Clausen and Huffine concluded that the wives of male patients were better able to socialize competence in their children than husbands of female patients because they were more competent in parental regulation and in showing warm acceptance of the child. The combination of family SES and female schizophrenia was a particularly strong indicator for not finishing school. Youth from broken, working class families with a female schizophrenic parent were least likely to complete high school.

Family SES has been linked to educational attainment and occupational success (Bachman, O'Malley, & Johnston, 1978; Jencks et al., 1979). In a study of young black children in Atlanta, only the family SES variable was found to be a significant predictor of total competence as measured by the Behavior Checklist (CBCL) (Spencer et al., 1988). In comparing children of mentally ill mothers and normal mothers, Sameroff and Seifer (1981) observed a powerful linear effect between family SES and competence in children. Children of lower-class mothers scored significantly less competent than children from higher SES groups.

Family discord and family climate affect the coping and competence of youth. Mother-child discord has been shown to be a strong predictor of serious coping/behavior problems in youth (Feldman et al., 1987). Families showing discord and hostility have a tendency to produce children with mental and behavior problems (Rutter, 1971; Werner & Smith, 1982; Rutter & Quinton, 1984). Four out of five dropouts do not feel they are accepted as a total person while four of five graduates do (Cervantes, 1966). Children of temperamental risk were much more likely to show emotional and behavioral disturbance than children without those characteristics (of negative mood; irregular sleeping, eating and bowel habits; lack of malleability and
fastidiousness) (Rutter and Quinton, 1984). Rutter and Quinton concluded, however, that parental mental illness and child temperament were secondary factors to the psychosocial disturbance in the family in predicting psychiatric risk in children. The child's experience of parental hostility, irritability, aggression, and violence were more important factors than affective symptoms or psychotic manifestations.

Measuring Social Competence

The relationship of social cognition, humor, and IQ to social competence of urban seventh graders was investigated in a study by Pelligreni, Masten, Garmezy and Ferraraese (1987). Measures of social reasoning (interpersonal understanding, and means-end problem-solving) and humor loaded substantially on the factor of social comprehension. Using hierarchical analysis to multiple regression, these researchers found that only IQ (42%) and social comprehension (13%) contributed significantly to the engaged-disengaged dimension of social competence.

Meisel (1989) urged caution in the use of interpersonal problem-solving measures for differentiating competent and incompetent children. He believes extreme differences in language achievement may bias these measures in their assessment and scoring of problem-solving. Meisel found that achievement and SES predicted peer and teacher ratings of social competence. He observed a strong relationship between academic achievement and the measures of social competence and believed that the role played by school achievement in children's social competence has been underestimated.

The Self-Perception Profile for Adolescents (What I Am Like inventory) and the Self-Perception Profile for Children were developed to
allow adolescents and children to make judgments of competence across separate domains. Harter (1982, 1985, 1986, 1989) has found that children can clearly discriminate among domains of competence and report different levels of adequacy according to the specific domain. Silon and Harter (1982) found that educably mentally retarded (EMR) students were not able to make such discriminate judgments, however. Harter and colleagues conducted a factorial validity study with the Self-Perception Profile for Children with several groups of children in several states and found that the instrument had a stable factor structure (Harter, 1982). Marsh and Gouvert (1987) found that this same instrument demonstrated convergent and discriminant validity.

The Self-Perception Profile for Adolescents assesses perceived competence in eight domains using a ‘structured alternative format’ to discourage socially desirable responses. For this study, scores from two of the domains, Social Acceptance and Close Friendship, were combined and averaged to arrive at a social competence score.

Summary and Conclusion

Family discord has been shown in the literature as a family variable important to coping in youth and relevant to their social competence. Therefore, family discord is incorporated into the regression models for the first two hypotheses to test its contribution to school-based competence.

The literature has shown that coping is related to both person and family variables. Sex, family discord, broken households, and family SEL affect youth, their coping patterns and problems. In addition, coping skills and patterns have been connected with school competence and mental
health. For these reasons, it is important to examine how the sets of person, family, and coping pattern variables are related to each other and to school-based competence. Therefore, the last three hypotheses test out regression models with these sets of variables.
CHAPTER III
RESEARCH DESIGN

This chapter presents the methods used to conduct this correlational-predictive study. The chapter includes five sections: (1) selection of subjects, (2) instruments, (3) procedures used to conduct the study, (4) data analysis, and (5) a summary.

Selection of Subjects

The subjects for this study were eighth grade students attending three middle schools in the Columbus Public Schools. The superintendents and directors of middle school guidance services were informed of the nature and intent of the study. The researcher was referred to school principals and guidance counselors to implement the selection of subjects. Educably mentally retarded (EMR) and learning disabled students were excluded from the study due to their limited reading ability at the recommendation of guidance personnel. A purposive sampling procedure was used to obtain students from all racial groups across all socioeconomic levels.

Presentations were made to eighth grade English classes and students were informed that participation was voluntary and required parental permission. A sample of 132 students was obtained after making presentations at three urban middle schools. Eighty-six girls and forty-six boys participated in the study. Of these students, seventy-one girls and thirty-six boys provided complete and valid data. Descriptive data for these students by school are shown in Table 1. The first school provided a good distribution of students by race and sex. The second school had seven Asian
Table 1
Descriptive Data on Urban Eighth Graders at Three Middle Schools

<table>
<thead>
<tr>
<th>School</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Male (n=36)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Afro-American</td>
<td>12</td>
<td>6</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>White</td>
<td>9</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Asian</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>Other</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>Female (n=71)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Afro-American</td>
<td>20</td>
<td>3</td>
<td>16</td>
</tr>
<tr>
<td></td>
<td>White</td>
<td>11</td>
<td>5</td>
<td>14</td>
</tr>
<tr>
<td></td>
<td>Asian</td>
<td>1</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>Other</td>
<td>0</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>55</td>
<td>17</td>
<td>35</td>
</tr>
</tbody>
</table>
eighth graders, but none chose to participate. The third middle school was not contacted until May, 1990 and had predominantly female students participating.

A purposeful attempt was made to include a large percentage of minority youth in this sample. Race has been shown to be an important factor in dropout rate and it was deemed important to be able to compare racial groups in terms of urban school competence. Mr. Frank Habeker, statistician for the Columbus Public Schools, was contacted for demographic data on eighth graders district wide. Table 2 shows how representative the study sample is compared to regular student and total eighth grade student (including special areas) attendance.

Power analysis is recommended to determine adequate sample size for correlational-predictive studies (Cohen & Cohen, 1983). By setting effect size, power level, and alpha level, sample size can be determined. Cohen and Cohen state: "The conventional medium effect size is a population $r$ of .30" (p. 60). When a power of .80 is desired to detect a population $r$ of .30 at an alpha ($\alpha$) = .05, an $n = 84$ is the needed sample size (Table G.2, Cohen and Cohen, 1983). The study sample of 107 students was deemed adequate for multiple regression analysis.

Instruments

The Millon Adolescent Personality Inventory (MAPI), and the Adolescent Survey, and the Comprehensive Tests of Basic Skills were used to assess the predictor variables of school-based competence. The Self-Perception Profile for Adolescents provided one of the criteria of competence. **MAPI**

The Millon Adolescent Personality Inventory was specifically designed for use by school counselors and mental health professionals in
Table 2

Distribution of Eighth Grade Students by Sex, Age, Race, and Family Structure

<table>
<thead>
<tr>
<th></th>
<th>Sample Frequency</th>
<th>Sample Percent</th>
<th>Regular Students</th>
<th>Total Students</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female</td>
<td>71</td>
<td>66.4</td>
<td>51.6</td>
<td>50.0</td>
</tr>
<tr>
<td>Male</td>
<td>36</td>
<td>33.6</td>
<td>48.4</td>
<td>50.0</td>
</tr>
<tr>
<td>13</td>
<td>21</td>
<td>19.6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>71</td>
<td>66.4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>14</td>
<td>13.1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>1</td>
<td>.9</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Afro-American</td>
<td>57</td>
<td>53.2</td>
<td>47.7</td>
<td>47.3</td>
</tr>
<tr>
<td>White</td>
<td>45</td>
<td>42.1</td>
<td>49.6</td>
<td>50.2</td>
</tr>
<tr>
<td>Asian</td>
<td>1</td>
<td>.9</td>
<td>2.1</td>
<td>1.8</td>
</tr>
<tr>
<td>Other</td>
<td>4</td>
<td>3.7</td>
<td>.6</td>
<td>.6</td>
</tr>
<tr>
<td>Both Parent Household</td>
<td>37</td>
<td>34.6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mother and Step-father</td>
<td>19</td>
<td>17.8</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mother-only Household</td>
<td>40</td>
<td>37.4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Father-only Household</td>
<td>8</td>
<td>7.5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Living with Others</td>
<td>3</td>
<td>2.8</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note. Household data are for sample only.
working with adolescents in school and clinical settings. Millon, Green, and Meagher (1982) state that this instrument should help clinicians in predicting which students are likely to act-out, underachieve, or to attend school irregularly. These factors are obviously related to school competence and risk of dropping out. The first eight scales of the instrument assess the eight coping/personality patterns. The second eight scales assess expressed concerns in terms of self, family and school life. The final four scales are behavioral correlates which indicate the degree of adjustment of the youth to the school setting.

The MAPI has been standardized on a combined clinical and non-clinical sample of 2,157 adolescent subjects including 1,071 males and 1,086 females. Racial composition of the sample includes 84% white American youth and 16% minority American students. The MAPI has been shown to be a stable instrument when it was administered at five month and one year intervals with clinical groups of adolescents. Reliability coefficients for the 5 month group averaged .74 and for the one-year retest group, .65. Internal consistency of the MAPI scales was found to be satisfactory with a Kuder-Richardson-20 (KR$_{20}$) of .74 for all clinical scales (Millon, Green & Meagher, 1982). The coping pattern scales were found to have convergent validity with the subscales of the 16 PF and the CPI with correlations ranging from .70 to -.7 (Millon, et al., 1982).

**Adolescent Survey**

This instrument was constructed by the doctoral student to collect demographic data on the subjects. Instrument design and item content were determined by following guidelines offered by Bachman (1970), Borg and Gall (1971) and Bachman, O'Malley and Johnston (1978). Students were asked to circle the number of the correct response to identify their age, sex, race, and family structure and size.
The final ten questions of the Adolescent Survey comprise the Family Socioeconomic Level (family SEL) scale. Patterned after the family SEL scale developed by Bachman (1970), this scale includes the following six, equally-weighted ingredients: possessions in the home, number of books in the home, number of rooms per person in the home, father's education, mother's education, and parent's/main wage earner's occupation. For occupational status, responses were coded according to the National Opinion Research Center's (NORC) index of occupational status (Reiss, 1961).

Comprehensive Tests of Basic Skills (CTBS, forms U and V)

The Comprehensive Tests of Basic Skills (CTBS) were used in this study to provide reading and math achievement scores for eighth graders. Content validity of the CTBS (forms U and V) was established by test and re-test data showing substantially greater percentages of students mastering academic skills in the Spring than Fall testing (CTBS Forms U and V Technical Report, 1982). Authors of the CTBS conducted bias analysis of test items and both separate and combined ethnic samples were used in conducting item analysis. A national standardized sample of 153,446 students from public, Catholic, and private schools participated in the norming of this instrument. The average percentage of black public students participating in the normative sample was 14 percent and approximately 25 percent of the public school students came from one-parent families.

Cross-validations were run between scores of the CTB/McGraw-Hill PRI Reading Systems and the CTBS/U and the Diagnostic Mathematics Inventory and the CTBS/U with resultant r of .79 for reading comprehension and r of .78 for math concepts for eight graders. The CTBS/U was found to be a stable and consistent measure with a KR20 of .93 for reading.

The Self-Perception Profile for Adolescents

This self-report instrument allows adolescents to make judgments of their competence across eight specific domains. Validation studies found that adolescents can clearly discriminate among domains and report different levels of adequacy according to the domain (Harter, 1982; 1986). The Social Acceptance scale and the Close Friendship scale scores were combined and averaged to provide a score of Social Competence for this study.

Other Criteria of Competence

In addition to the social competence scores derived from the two scales of the Self-Perception Profile for Adolescents, final grades and end-of-the-year attendance data was obtained from student records. Average grades were calculated by averaging the final grades for English, Math, Science, and Social Studies. Total days attended during the school year was used as the attendance measure.

Study Procedures

Procedures for this study included review of study purpose, research design and instruments by a review committee of the Columbus Public Schools; coordination of study presentations, parent contacts, and test administration with school principals, counselors and teachers; presentation of the study' securing parental permission; and administration of the instruments.

Review Committee

Dr. Timothy Ilg, Assistant Superintendent of Teaching and Learning assigned a committee of the middle school guidance director, the director of psychological services, and the director of testing to evaluate this study, its
design, and its instruments. Their assistance helped focus this study. It was recommended that the Adolescent Survey be shortened to exclude items on substance abuse and delinquent and unruly behavior in the school setting. These items were removed from this questionnaire because they were not central to the purpose of the study. It was also suggested to take additional time to instruct students in completing the Self-Perception Profile for Adolescents because its response format was somewhat complicated. In addition, it was requested that three items pertaining to sex behavior be deleted from the MAPI. A principal objected to these items because it was anticipated that conservative, religious parents would disapprove of their children being asked these questions.

Coordination with Individual School Staff

Each principal was shown the study design, instruments, a typed presentation of recruitment of eighth graders, the student assent form, and the parent permission form. The researcher worked with the principal, school counselor, and English teachers to set up convenient times for presentation of the study to English classes. English teachers witnessed the presentations, signed, and dated the presentation form at the time of the presentation. It was explained to students that participation was voluntary, all instruments would be coded confidentially by number, and in order to participate they would have to sign the student assent form and return a signed parent permission form. Parental permission forms could be mailed or returned to the English teacher or school counselor.

Presentation of the Study

The purpose of the study was explained to students—that this was a study to determine how eighth graders cope with the pressures and demands
of middle school. Students were asked to volunteer eighty minutes (two class periods) of their time to complete three instruments: the MAPI, the Adolescent Survey, and the Self-Perception Profile for Adolescents ('What I Am Like' inventory). It was explained that these instruments were easy to read. Questions were answered in regard to inventory content and general examples were given (not specific to the instruments).

**Parental Permission Forms**

Parental permission forms with return envelopes were mailed to parents. When it became obvious to school counselors and the researcher that very few permission forms were forthcoming, it was decided to make follow-up phone calls to parents. It became obvious to the researcher that many parents had questions about the study and the instruments. A number of parents expressed a defensive or protective attitude towards their family and their child's participation. Some parents requested examples of the questions to be asked their child. When parents were persuaded to the benefit of the study and that no harm would be forthcoming to their child, they sometimes sent in permission forms. Two hundred and ninety-six students signed the student assent form, however only 132 parental permission forms were returned to the three middle schools.

**Administration of Instruments**

Setting and size of subject group varied by school. In the first school inventory-administration occurred in the library with groups of 23 and 40 students, respectively. The second middle school made its cafeteria available for a group administration to 24 students. The last middle school provided the auditorium for a group administration to 36 students. Only the second middle school provided a staff member to help monitor the administration of the instruments.
The Adolescent Survey was administered by orally going through the first page of questions together to ensure that all students understood how to complete the instrument. The MAPI was administered secondly, and instructions were given to complete the cover page and the inventory. Finally, a few minutes was taken to provide two (chalkboard) examples for the Self-Perception Profile for Adolescents. Students were encouraged to raise their hands if they didn't understand an item. Most students completed all three inventories in 70 to 80 minutes. A few students required extra time to complete an instrument. Students were instructed not to write their names on the instruments. Coded instruments were handed to each student at the beginning of each administration as the student identified herself or himself to the researcher.

Research Design and Data Analysis

A multi-variate, explanatory model of school-based competence was described in the introductory chapter. This multi-variate research design was suggested by the studies of drop-outs by Bachman, Kahn, Mednick, Davidson, and Johnston (1967), Bahhman (1970), and Bachman, O'Malley and Johnston, (1978). They observed that the interrelationships among family background factors were quite complex and that multivariate techniques were needed in predicting criteria from these family background characteristics.

Tuckman (1972) pointed out the importance of accounting for moderator variables in research design. In regards to sex, he suggested that grade point average and intelligence may be more highly correlated for boys than for girls. He also suggested that the researcher should account for the moderator of race and it would be wise to have a hypotheses for this variable,
such as: 'grade point average and intelligence are more highly correlated for white Americans than black Americans.' Following Tuckman's lead, it was decided to include sex, age, race, math and reading achievement person variables in the predictive model (Figure 1). These variables can serve as important control variables in the multiple regression models to be tested.

Secondly, the predictive model of competence places predictor variables into sets because of their content and the role they play in the logic of this research. Sex and age serve as a functional set in this study. These variables are deemed antecedent logically for the purpose of partialling out of the total variance the portion of variance due to these conditions (Cohen and Cohen, 1982). Similarly, family factors and coping patterns are treated as functional sets to determine the contribution of these sets of variables to the total variance of school-based competence. In studying children's competence, Feldman et al., (1987) observed: that few studies investigate the amounts of "variance in children's behavior problems explained by given sets of predictors" (p. 120). This study purposely uses sets of variables in MR/C to examine how they explain the variance in school-based competence in urban youth.

Choice of Analytic Strategies

Multiple regression/correlation analysis offers the choice of stepwise regression and hierarchical analysis. With stepwise regression, all variables of interest are entered simultaneously and are regressed on Y. At each stage of computation, the one variable which makes the largest contribution to $R^2$ or has the greatest semi-partial correlation ($sr^2$) is selected out. Hierarchical analysis works conversely. Independent variables are entered cumulatively in a prespecified sequence. Total variance and incremental variance are determined as each variable joins others already in the model.
Caution is urged in the use of stepwise regression. Thompson (1989) stated that there are several pitfalls with this method which can lead to serious misinterpretation of results. For novice researchers, it is easy to underestimate the degrees of freedom, conduct a F test and find it significant. By relying on canned programs using stepwise regression, the novice researcher can easily be led toward type I errors and conclude that results are significant when in fact they are not. The conditionality of variables and sampling error can also distort stepwise results. Kerlinger (1986) argued that the research problem and its theory should determine the order of entry of variables and not stepwise methods.

Cohen and Cohen (1982) view with skepticism the routine use of stepwise methods in explanatory research. They state that the simultaneous significance testing of a large number of variables simultaneously can lead to a serious capitalization of chance (relationships/correlations), and therefore significance tests at each step are not valid. They suggest the use of stepwise only under the following conditions: 1) that the research goal is primarily predictive and technological, 2) that the n is very large (k/n ratio of 1 to 40), 3) that stepwise be used with groups of variables which are put in an a priori hierarchy, 4) that a cross-validation study be done with a new sample.

Hierarchical analysis

Recent multivariate studies on the competence of urban youth have found hierarchical analysis to MRC to be a powerful and precise tool for data analysis (Feldman et al., 1987; Garmezy, Masten, & Tellegen, 1984). Garmezy et al. recommended entering the orgasnimic variables of sex and age first in regression models to control for their effects on the criteria of competence. The same approach has been adopted in this study.
Cohen and Cohen (1982) stated that hierarchical analysis fits well with the scientific method because this approach tests out a priori hunches. They endorse this analytic strategy because the hierarchical method leads to an ordering of independent variables in the regression model that reflect their causal priority. Secondly, this method encourages the removal of confounding variables by entering them early in the sequence. Finally, the hierarchical approach encourages the setting of a limit on the number of variables in a regression model. Such a limit is important as Cohen and Cohen state:

In each MRC, the greater the number of IV's (=k), the lower the power of the test on each IV (or set of IV's). (p. 170).

Hierarchical analysis permits a logical ordering of independent variables and thereby greater power is reserved for the F test of sets of IV's of higher priority. As variables or sets of variables are added to the model, the error term for the F and t tests increases; thereby resulting in a more conservative significance test and less likelihood of Model I error.

Cohen and Cohen recommend the use of Fisher's Protected t-test with sets of variables and hierarchical analysis to reduce experimentwise error rates. When the incremental F test is conducted on a set of variables and found not to be significant, there is no need to conduct t tests on individual variables.

**Incremental F test**

Throughout this study, the incremental F test is used to test the significance of a variable or set of variables as it is entered into the regression model. This F tests the null hypotheses that in the population there is no increment in Y variance accounted for when B is added to A. In other words:
The formula for 'A General F Test for an Increment (Model I Error)' from section 4.4.1 of Cohen and Cohen is as follows:

\[
F = \frac{(R^2_{Y,AB} - R^2_{Y,A})/kB}{(1-R^2_{Y,AB})/(n-k_A-k_B-1)}
\]

The numerator is the normalized mean square for the unique B variance (proportion of Y variance) and the denominator is the Model I error term. In other words, the numerator is the incremental variance produced by adding the variable (or set) to the model divided by degrees of freedom (df). The denominator is the normalized error variance.

Hypothesis 3 can serve as an illustration for this statistical approach. First the functional set of sex and age (A) is entered into the model with a resultant \( R^2_{Y,A} = \text{Cum } R^2 = .1746 \). Secondly, the set of family variables is entered into the regression model with a resultant \( R^2_{Y,AB} = .2759 \). The difference, or incremental variance (sR^2_{AB}) is equal to .1013 which is divided by 7 (kB). For the denominator or error term we subtract .2759 from 1 and divide this value by its degrees of freedom value of \( 107-2-7-1 = 97 \). The resultant value for this general F test for an increment is \( F = 1.94, (df=7,97) \).

Since this incremental F test was not significant, no t tests were conducted on any of the individual, quantitative variables in the model.

Summary

Hierarchical analysis to multiple regression/correlation analysis (MR/C) was used in this study for an a priori, causal ordering of independent
variables into the regression model as suggested by theory. Sex, age, family socioeconomic level, and family rapport/conflict were deemed variables of greatest relevance and import to urban youth competence. Therefore, these four variables were given precedence in any regression models where they were used.

The General F test for an Increment (Model I Error), a conservative significance test was the primary statistical tool used throughout this study. T tests would only be conducted when this F test was significant and appropriate quantitative variables are present in the set.
CHAPTER IV
RESULTS

This chapter is divided into the following sections: (1) a presentation of correlations between sets of predictor variables, (2) a presentation of correlations between predictor variables deemed significant in this study and the criteria of school-based competence, (3) results for the five hypotheses tested, (4) additional results of interest, (5) a presentation of the differences and similarities between students in the study sample and the twenty-five students excluded from the study, and (6) a summary.

Correlations Between Predictor Variables

The correlations between person and family variables, person variables and individual coping pattern variables, and family variables and coping pattern variables were examined.

In the case of person and family variables, the significant finding is the strong positive relationship between reading achievement ($r = .32$), math achievement ($r = .30$) and family socioeconomic level (family SEL), and the negative relationship between reading achievement and living in a mother-only household ($r = -.21$). Table 3 shows these results. Family discord/rapport (FAMR) had encouragingly low correlations with all person variables and that suggests that this variable may be a good selection as a predictor.

Several significant correlations were found between person variables and individual coping pattern variables (see Table 4). Interestingly, these significant correlations were primarily between race and the coping variables. Afro-American eighth graders tended not to be active-detached or avoidant in their coping, but they did have a tendency toward being
Table 3
Correlations Between Person Variables and Family Variables

<table>
<thead>
<tr>
<th>Family Variables</th>
<th>Person Variables</th>
<th>Afro-American</th>
<th>White</th>
<th>Asian&lt;sup&gt;a&lt;/sup&gt;</th>
<th>Math Ach.</th>
<th>Read. Ach.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Sex</td>
<td>Age</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Family Discord</td>
<td>.13</td>
<td>.03</td>
<td>-.02</td>
<td>-.06</td>
<td>.15&lt;sup&gt;a&lt;/sup&gt;</td>
<td>.06</td>
</tr>
<tr>
<td>Family SEL</td>
<td>.17</td>
<td>-.23&lt;sup&gt;*&lt;/sup&gt;</td>
<td>-.14</td>
<td>.15</td>
<td>.07</td>
<td>.30&lt;sup&gt;**&lt;/sup&gt;</td>
</tr>
<tr>
<td>Both Parents</td>
<td>.02</td>
<td>-.04</td>
<td>-.07</td>
<td>.06</td>
<td>.13</td>
<td>-.08</td>
</tr>
<tr>
<td>Mother &amp; Step Dad</td>
<td>.12</td>
<td>-.01</td>
<td>.14</td>
<td>-.10</td>
<td>-.05</td>
<td>.13</td>
</tr>
<tr>
<td>Mother Only</td>
<td>-.02</td>
<td>-.04</td>
<td>.03</td>
<td>.01</td>
<td>-.08</td>
<td>-.08</td>
</tr>
<tr>
<td>Father &amp; Step Mother</td>
<td>-.17</td>
<td>.14</td>
<td>-.23&lt;sup&gt;*&lt;/sup&gt;</td>
<td>.12</td>
<td>-.03</td>
<td>.12</td>
</tr>
<tr>
<td>Family Size</td>
<td>-.01</td>
<td>-.01</td>
<td>.16</td>
<td>-.16</td>
<td>.01</td>
<td>-.08</td>
</tr>
</tbody>
</table>

Note. Only one Asian student participated in this study.

<sup>*</sup><sub>p < .05</sub>
<sup>**</sup><sub>p < .01</sub>
<sup>***</sup><sub>p < .0001</sub>
Table 4

Correlations Between Person Variables and Coping Patterns

<table>
<thead>
<tr>
<th>Coping Patterns</th>
<th>Person Variables</th>
<th>Afro-American</th>
<th>White</th>
<th>Asian</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sex Age</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Passive Detached</td>
<td>-.11</td>
<td>.02</td>
<td>-.12</td>
<td>-.13</td>
</tr>
<tr>
<td>Active Detached</td>
<td>.09</td>
<td>.04</td>
<td>-.22*</td>
<td>.13</td>
</tr>
<tr>
<td>Passive Dependent</td>
<td>.03</td>
<td>-.14</td>
<td>-.17</td>
<td>.20*</td>
</tr>
<tr>
<td>Active Dependent</td>
<td>-.03</td>
<td>-.05</td>
<td>.03</td>
<td>.01</td>
</tr>
<tr>
<td>Passive Independent</td>
<td>-.11</td>
<td>-.05</td>
<td>.21*</td>
<td>-.15</td>
</tr>
<tr>
<td>Active Independent</td>
<td>-.08</td>
<td>.11</td>
<td>.10</td>
<td>-.14</td>
</tr>
<tr>
<td>Passive Ambivalent</td>
<td>.07</td>
<td>-.11</td>
<td>.13</td>
<td>-.05</td>
</tr>
<tr>
<td>Active Ambivalent</td>
<td>.07</td>
<td>.12</td>
<td>-.07</td>
<td>-.01</td>
</tr>
</tbody>
</table>

Note. There is only one Asian student in this sample.

*p < .05
passive-independent or narcissistic and confident in their coping pattern. White eighth grade students in this sample had a tendency toward passive-dependent or submissive and cooperative coping in the middle school setting. The other result worth noting is the significant, positive relationship between math achievement and active-dependent or sociable coping/personality style ($r = .20$).

Knowing that the family milieu has a strong influence on youth coping style (Millon, 1981), it was not surprising to find a large number of significant relationships between family discord (FAMR) and the individual coping patterns. (see Table 5). The passive-coping youngster tends not to report family discord, while the active-coping student does report family discord. The passive-detached asocial and introversive coping pattern ($r = -.44$) and the passive-ambivalent (conforming and respectful) coping pattern ($r = -.70$) showed the greatest negative association with family discord. Active-detached (avoidant) ($r = .33$), active-independent (forceful) ($r = .45$), and active-ambivalent (negativistic) ($r = .69$) coping patterns had strong, positive associations with family discord. The active-coping youngster is striving for autonomy from his family and in some families this effort encourages greater discord.

The Relationship Between Predictor Variables and the Criteria of School-based Competence

Before presenting the results of the tested hypotheses, it is helpful to present the correlations between selected predictor variables and the criteria of school-based competence. These correlations make the results of hierarchical analysis more comprehensible. Table 6 shows the relationship between these predictor variables and the criteria of eighth grade student competence.
Table 5

Correlations Between Family Variables and Coping Patterns

<table>
<thead>
<tr>
<th>Coping Patterns</th>
<th>Family Variables</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Family Discord</td>
</tr>
<tr>
<td>Passive Detached</td>
<td>-.44***** .07</td>
</tr>
<tr>
<td>Active Detached</td>
<td>.33**** .02</td>
</tr>
<tr>
<td>Passive Dependent</td>
<td>-.29*** .18*</td>
</tr>
<tr>
<td>Active Dependent</td>
<td>.07</td>
</tr>
<tr>
<td>Passive Independent</td>
<td>-.21**</td>
</tr>
<tr>
<td>Active Independent</td>
<td>.45*****-.16</td>
</tr>
<tr>
<td>Passive Ambivalent</td>
<td>-.70*****.04</td>
</tr>
<tr>
<td>Active Ambivalent</td>
<td>.69*****-.09</td>
</tr>
</tbody>
</table>

Note. There is only one Asian student in this sample.

*p < .10
**p < .05
***p < .01
****p < .001
*****p < .0001
Table 6

Selected Predictor Variables Related to Criteria of Competence

<table>
<thead>
<tr>
<th>Predictor Variables</th>
<th>Average Grades</th>
<th>Math Grades</th>
<th>Attendance</th>
<th>Social Competence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sex</td>
<td>.31****</td>
<td>.22**</td>
<td>-.16*</td>
<td>.13</td>
</tr>
<tr>
<td>Age</td>
<td>-.32****</td>
<td>-.21**</td>
<td>-.04</td>
<td>-.09</td>
</tr>
<tr>
<td>Afro-American</td>
<td>-.09</td>
<td>-.05</td>
<td>.23**</td>
<td>-.06</td>
</tr>
<tr>
<td>White Race</td>
<td>.10</td>
<td>.06</td>
<td>-.26***</td>
<td>.07</td>
</tr>
<tr>
<td>Math Achievement</td>
<td>.56*****</td>
<td>.46*****</td>
<td>.11</td>
<td>.26***</td>
</tr>
<tr>
<td>Reading Achievement</td>
<td>.57*****</td>
<td>.41*****</td>
<td>.06</td>
<td>.25**</td>
</tr>
<tr>
<td>Family Discord</td>
<td>-.08</td>
<td>-.04</td>
<td>-.07</td>
<td>-.08</td>
</tr>
<tr>
<td>Family SEL</td>
<td>.31***</td>
<td>.26***</td>
<td>-.07</td>
<td>.03</td>
</tr>
<tr>
<td>Mother-only Household</td>
<td>-.16*</td>
<td>-.14</td>
<td>-.07</td>
<td>.02</td>
</tr>
<tr>
<td>Active-Detached Coping</td>
<td>-.05</td>
<td>-.07</td>
<td>-.14</td>
<td>-.45*****</td>
</tr>
<tr>
<td>Active-Dependent</td>
<td>.04</td>
<td>.05</td>
<td>.09</td>
<td>.48*****</td>
</tr>
<tr>
<td>Passive-Independent</td>
<td>-.04</td>
<td>-.01</td>
<td>.12</td>
<td>.29***</td>
</tr>
<tr>
<td>Active-Ambivalent</td>
<td>-.12</td>
<td>-.09</td>
<td>-.01</td>
<td>-.22**</td>
</tr>
</tbody>
</table>

*p < .10  
**p < .05  
***p < .01  
****p < .001  
*****p < .0001
As predicted by literature review, math achievement has a strong, positive relationship with average grades ($r=.56$) and math grades ($r=.46$), but it has a weaker, yet significantly positive relationship with social competence ($r=.26$). Not surprisingly, reading achievement shows similar positive relationships with average grades ($r=.57$), math grades ($r=.41$), and social competence ($r=.25$). Mathematics ability is considered a component of verbal intelligence (Kaufman, 1979) and therefore it is understandable that these two predictor variables have parallel relationships with average grades and math grades.

Sex and age show the predicted relationship with grades. The literature indicated that female students tend to earn better grades in school and table 6 shows a strong, positive relationship between (female) sex and average grades ($r=.31$). Age, as expected, shows a significantly negative association with average grades ($r=-.32$).

Two family variables are good predictors of grades. Family socioeconomic level (SEL) had a significant, positive relationship to average grades ($r=.31$) and math grades ($r=.26$). Conversely, mother-only household is negatively associated with average grades ($r=-.16$). Family discord has a current, negative relationship to all the criteria of school-based competence.

Table 6 makes it obvious that attendance differs from the other criteria of competence in its relationship to predictor variables. Race is the best predictor of attendance at these three Columbus middle schools.

Finally, the coping pattern variables are the best predictors of social competence, followed by math and reading achievement.

**Summary**

In examining the relationship of person variables to family variables, family SEL has a rather strong, positive relationship to math and reading
achievement. It is likely that these three variables will share in the variance of the criteria. The coping pattern variables show very strong associations with family discord and that relationship suggest that family discord may have an indirect relationship to the criteria of school-based competence. Finally, sex, age, math achievement, reading achievement, and family SEL are good predictors of grades, while the coping pattern variables are good predictors of social competence.

Results for the Five Hypotheses

Results for hypothesis 1

In Chapters 1 and 2 it was presumed that sex and age would make significant contributions to the variance of grades, attendance, and social competence. Therefore, these two variables were purposely entered first into the regression models to partial out their effects on the dependent variables. After having added sex and age into the model, family discord/family rapport was entered into the regression model. Table 7 shows the results for the hierarchical analysis to multiple regression/correlation analysis MRC of family discord and average grades.

The results show that sex and age do make a significant contribution to the variance of average grades, F(1,105) = 11.41, p <.01; and F(1,104)=9.69, p <.01, respectively. It was found that family discord did not contribute significantly to the variance of average grades, F(1,103) = 1.38.

The regression equation in Table 7 summarizes the strength and direction of the relationship between the three independent variables and average grades. It can be seen that family discord has a weak, negative relationship to average grades. In this regression model, sex has a strong
Table 7

Hierarchical Analysis of Family Discord and Average Grades

<table>
<thead>
<tr>
<th></th>
<th>Average Grades</th>
<th>Sex</th>
<th>Age</th>
<th>Family Discord</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Mean</strong></td>
<td>2.50</td>
<td>.66</td>
<td>13.95</td>
<td>67.09</td>
</tr>
<tr>
<td><strong>Standard Deviation</strong></td>
<td>.90</td>
<td>.47</td>
<td>.60</td>
<td>26.27</td>
</tr>
</tbody>
</table>

Hierarchical MRC

<table>
<thead>
<tr>
<th>IVs added</th>
<th>Incremental Variance</th>
<th>F</th>
<th>df</th>
<th>Cum R^2</th>
<th>F</th>
<th>df</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sex</td>
<td>.10</td>
<td>.10</td>
<td>11.41**</td>
<td>1,105</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>.08</td>
<td>9.69**</td>
<td>1,104</td>
<td>.18</td>
<td>11.00**</td>
<td>2,104</td>
</tr>
<tr>
<td>Family Discord</td>
<td>.01</td>
<td>1.38</td>
<td>1,103</td>
<td>.19</td>
<td>7.82**</td>
<td>3,103</td>
</tr>
</tbody>
</table>

Regression equation

\[ \hat{Y} = .55 \text{ Sex} - .42 \text{ Age} - .004 \text{ Family Discord} + 8.25. \]

*p < .01
positive relationship to average grades while age has a strong negative relationship to this criteria.

Table 8 shows the results of hierarchical analysis of this model (age, sex, and family discord) with all the criteria of school-based competence. Again sex and age explain the bulk of the variance of the criteria for this model, particularly for grades earned. Family discord consistently explains a small percentage (1 percent or less) of the total variance. The overall F test for the model shows that the regression model of sex, age, and family discord does not help explain the variance of attendance and social competence.

Results for Hypothesis 2

For hypothesis 2, sex and family discord scores are first entered into the model, and the interaction variable: sex X family discord is the third and last variable entered into the regression model. Table 9 shows the results of hierarchical analysis using this model with the criteria of school-based competence. The incremental F test shows that this interaction variable does not make a significant contribution to the variance of any of the criteria.

While the incremental F test rejects the null hypothesis, the overall F test for this model was significant for average grades, F(3,103) = 4.58, p < .01. Apparently sex and family discord explained sufficient variance of average grades to make this a significant regression model for that criterium. In addition, Table 9 shows a regression equation for this model and math grades. This equation makes apparent that the variable of sex is the major contributor in this regression model.

Summary

The hierarchical analyses for hypotheses 1 and 2 show that family discord and the interaction variable of sex and family discord are not significant predictors of school-based competence in this sample.
Table 8
Hierarchical Analysis of Family Discord and the Criteria of School-based Competence

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Variance Incremental due to Sex &amp; Age</th>
<th>Variance of Family Discord</th>
<th>F</th>
<th>df</th>
<th>Cum $R^2$</th>
<th>F</th>
<th>df</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average Grades</td>
<td>.18</td>
<td>.01</td>
<td>1.38</td>
<td>1,103</td>
<td>.19</td>
<td>7.82**</td>
<td>3,103</td>
</tr>
<tr>
<td>English Grades</td>
<td>.09</td>
<td>.01</td>
<td>1.03</td>
<td>1,103</td>
<td>.10</td>
<td>3.98**</td>
<td>3,103</td>
</tr>
<tr>
<td>Math Grades</td>
<td>.07</td>
<td>.01</td>
<td>.31</td>
<td>1,103</td>
<td>.08</td>
<td>3.1281</td>
<td>3,103</td>
</tr>
<tr>
<td>Attendance</td>
<td>.03</td>
<td>.002</td>
<td>.21</td>
<td>1,103</td>
<td>.03</td>
<td>1.18</td>
<td>3,103</td>
</tr>
<tr>
<td>Social Competence</td>
<td>.02</td>
<td>.01</td>
<td>.96</td>
<td>1,103</td>
<td>.03</td>
<td>1.09</td>
<td>3,103</td>
</tr>
</tbody>
</table>

*$p < .05$

**$p < .01$
Table 9

Hierarchical Analysis of Sex X Family Discord and the Five Criteria of School-based Competence

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Incremental Variance of Sex X Family Discord</th>
<th>F</th>
<th>df</th>
<th>Cum R²</th>
<th>F</th>
<th>df</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average Grades</td>
<td>.006</td>
<td>.70</td>
<td>1,103</td>
<td>.12</td>
<td>4.58**</td>
<td>3,103</td>
</tr>
<tr>
<td>English Grades</td>
<td>.001</td>
<td>.11</td>
<td>1,103</td>
<td>.06</td>
<td>2.00</td>
<td>3,103</td>
</tr>
<tr>
<td>Math Grades</td>
<td>.014</td>
<td>1.55</td>
<td>1,103</td>
<td>.07</td>
<td>2.48</td>
<td>3,103</td>
</tr>
<tr>
<td>Attendance</td>
<td>.004</td>
<td>.43</td>
<td>1,103</td>
<td>.03</td>
<td>1.16</td>
<td>3,103</td>
</tr>
<tr>
<td>Social Competence</td>
<td>.001</td>
<td>.11</td>
<td>1,103</td>
<td>.03</td>
<td>.95</td>
<td>3,103</td>
</tr>
</tbody>
</table>

Regression Question

Math grades: \( \hat{Y} = 1.25 \text{ Sex} + .004 \text{ Family Discord} - .01 \text{ Sex X Family Discord} + 1.57 \)

\(*p < .01\)
The remaining three hypotheses involve the conducting of incremental F tests with sets of predictor variables to determine whether or not a set makes a significant contribution to the variance of grades, attendance or social competence.

Results for Hypothesis 3

The third hypothesis tests the model of sex, age, and the set of seven family variables as to its contribution to the variance of school-based competence. Sex and age are entered first into the regression model to partial out their effects on the dependent variable. The family variables are then entered in order of priority: family discord, family socioeconomic level, both parents-in-the-household, mother and step-father household, mother-only household, father-other household, and family size.

Hierarchical Analysis shows that the set of family variables did not make a significant contribution to that variance of average grades; although it approached significance, $F(7,97) = 1.94$. Table 10 shows the results of the hierarchical analysis of this model regressed on average grades.

Although the incremental F-test for the set of family variables was not significant and no t-tests need to be conducted on the family variables under Fisher's Protected t test rule, it is worth noting that three variables in this model made significant contributions to the variance of average grades, and a fourth variable approached significance. Sex related positively to average grades, $F(1,105) = 13.12$, $p < .001$; age makes negative contribution, $F(2,104) = 10.27$, $p < .01$; and family socioeconomic level makes positive contribution, $F(4,102) = 4.90$, $p < .05$. The mother-only household predictor has a negative association with average grades and approaches significance, $F(7,99) = 2.84$, $p < .10$. These results correspond to the incremental variance contributed by
Table 10
Hierarchical Analysis of the Set of Family Variables and Average Grades

<table>
<thead>
<tr>
<th>Incremental Variance</th>
<th>F</th>
<th>df</th>
<th>Cum R²</th>
<th>F</th>
<th>df</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sex</td>
<td>.10</td>
<td></td>
<td>.10</td>
<td>13.12**</td>
<td>1,105</td>
</tr>
<tr>
<td>Age</td>
<td>.08</td>
<td>10.27**</td>
<td>1,104</td>
<td>.17</td>
<td>11.00**</td>
</tr>
<tr>
<td>Seven Family Variables</td>
<td>.10</td>
<td>1.94</td>
<td>7.97</td>
<td>.28</td>
<td>4.11**</td>
</tr>
</tbody>
</table>

Regression Question

\[
\hat{Y} = .49 \text{Sex} - .39 \text{Age} - .002 \text{Family discord} + .02 \text{Family SEL} - .27 \text{Both parent-household} - .04 \text{Mother & Step-dad household} - .47 \text{Mother-only household} + .06 \text{Father-other household} - .08 \text{Family size} + 7.12.
\]

**p < .01
these variables. Sex contributes 10 percent to the variance of average grades; age contributes 8 percent; family socioeconomic level contributes nearly 4 percent; and mother-only household adds 2 percent to this variance.

The same regression model of sex, age, and the set of family variables accounted for considerably less variance of English grades, math grades, attendance, and social competence than for average grades. Table 11 shows the decreasing variances (Cum R2) accounted for by this predictive model. The incremental variance contributed by the set of family variables for each criteria and the corresponding significance (F) tests are also shown.

By subtracting the incremental variance from the Cum R², one obtains the contribution of sex and age to the variance of the dependent variable. It is interesting to observe that sex and age explain 18 percent of the variance of average grades, and 9 percent of the variance of English grades, but these two predictors explain considerably less than 10 percent of the variance of math grades, attendance, and social competence. At the same time, family factors as a set do not explain a significant proportion of the variance of the dependent variables. It can be asserted, however, that this regression model does have a linear relationship with average grades, F(9,97) = 4.11, p < .01.

Results for Hypothesis 4

A hierarchical regression model was constructed by first entering sex and age; and finally the set of eight coping patterns was entered to determine the unique contribution of this set of coping patterns on the variance of the five criteria of school-based competence. Table 12 shows the results of the hierarchical MRC analysis for each of the five dependent variables.
Table 11

Hierarchical MRC Analysis for the Set of Family Variables and the Criteria of School-based Competence

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Incremental Variance of the set of Family Variables</th>
<th>F</th>
<th>df</th>
<th>Cum R²</th>
<th>F</th>
<th>df</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average Grades</td>
<td>.10</td>
<td>1.94</td>
<td>7,97</td>
<td>.28</td>
<td>4.11**</td>
<td>9,97</td>
</tr>
<tr>
<td>English Grades</td>
<td>.08</td>
<td>1.33</td>
<td>7,97</td>
<td>.17</td>
<td>2.26</td>
<td>9,97</td>
</tr>
<tr>
<td>Math Grades</td>
<td>.07</td>
<td>1.16</td>
<td>7,97</td>
<td>.15</td>
<td>1.92</td>
<td>9,97</td>
</tr>
<tr>
<td>Attendance</td>
<td>.08</td>
<td>1.25</td>
<td>7,97</td>
<td>.11</td>
<td>1.33</td>
<td>9,97</td>
</tr>
<tr>
<td>Social Competence</td>
<td>.04</td>
<td>.55</td>
<td>7,97</td>
<td>.06</td>
<td>.68</td>
<td>9,97</td>
</tr>
</tbody>
</table>

**p < .01
Table 12
Hierarchical MRC Analysis for the Set of Coping Patterns and the Criteria of School-based Competence

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Incremental Variance of the set of Coping Patterns</th>
<th>F</th>
<th>df</th>
<th>Cum R^2</th>
<th>F</th>
<th>df</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average Grades</td>
<td>.10</td>
<td>1.63</td>
<td>8,96</td>
<td>.27</td>
<td>3.63*</td>
<td>10,96</td>
</tr>
<tr>
<td>English Grades</td>
<td>.07</td>
<td>.99</td>
<td>8,97</td>
<td>.16</td>
<td>1.89</td>
<td>10,96</td>
</tr>
<tr>
<td>Math Grades</td>
<td>.05</td>
<td>.73</td>
<td>8,96</td>
<td>.13</td>
<td>1.47</td>
<td>10,96</td>
</tr>
<tr>
<td>Attendance</td>
<td>.11</td>
<td>1.54</td>
<td>8,96</td>
<td>.14</td>
<td>1.57</td>
<td>10,96</td>
</tr>
<tr>
<td>Social Competence</td>
<td>.33</td>
<td>6.06**</td>
<td>8,96</td>
<td>.35</td>
<td>5.17**</td>
<td>10,96</td>
</tr>
</tbody>
</table>

Regression equation for social competence

\[ Y = .144 \text{Sex} - .048 \text{Age} - .001 \text{passive-detached coping} - .01 \text{active-detached} - .002 \text{passive-dependent} + .01 \text{active-dependent} - .01 \text{passive-independent} - .001 \text{active-independent} - .001 \text{passive-ambivalent} - .002 \text{active-ambivalent coping} + 4.86. \]

*p < .05

**p < .01
While sex and age and coping patterns account for 27 percent of the variance of average grades, the set of coping patterns contributes 10 percent of this variance. The General F test for the incremental variance contributed by the set of coping patterns to average grades is not significant.

Although the set of coping patterns did not make a significant contribution to average grades, four individual predictors did have a significant relationship to average grades. Sex had a strong, positive relationship, $F(1,105) = 12.96, p < .001$; age had a strong, negative relationship, $F(2,104) = 10.14, p < .01$; passive-independent coping had a significant, negative association with average grades, $F(7,99) = 4.24, p < .05$; and active-ambivalent coping also had a negative relationship to average grades, $F(10,96) = 6.66, p < .05$.

It is not surprising that the set of coping styles has a significant relationship with the criterion of social competence, $F(8,96) = 6.06, p < .01$. Coping and social competence have been viewed in the literature as overlapping concepts. When a student is coping well in the middle school, she will show social competence. The results of hierarchical MRC analysis show that coping styles account for nearly 33 percent of the variance in social competence scores, while sex and age account for little more than 2 percent of this variance. A reverse relationship holds true for the other dependent variables where sex and age account for the bulk of the variance.

When considered individually and independently, the active-detached, avoidant coping style had a significant negative relationship to social competence, $F(1,96) = 6.59, p < .01$; and the active-dependent, gregarious coping style had positive relationship to social competence, $F(1,96) = 7.21, p < .01$; as did the passive-independent, narcissistic coping style, $F(1,96)$
$= 8.13, p < .01$. These three variables make the greatest contribution to the variance of social competence in the urban middle school. With the high multicolinearity among the coping style variables, these results need to be interpreted cautiously.

In regard to school attendance, the passive-dependent, submissive coping style has a significant negative relationship, $F(1,96) = 5.32, p < .05$; as does the active-ambivalent, negativistic coping pattern, $F(1,96) = 5.68, p < .05$. The passive-ambivalent, conforming coping pattern has a positive relationship to attendance, $F(1,96) = 5.89, p < .05$.

Results for Hypothesis 5

It has been assumed in this study that person variables (e.g., sex, age, math achievement) will make a significant contribution to the variance of the dependent variables of school-based competence. This final hypothesis tests this assumption by first entering the set of person variables into the regression model, and secondly adding the set of family variables into the model. The hierarchical analysis for this hypothesis is shown in Table 13. In this hierarchical model the person variables entered in order are: sex, age, Afro-American race, white race, Asian race, math achievement, and reading achievement. Secondly, the family variables entered in order of priority are: family discord, family socioeconomic level, both parent household, mother and step-dad household, mother-only household, father-other household, and family size.

Nearly 50 percent of the variance (Cum $R^2$) of average grades is explained by this two-set regression model. The percentage of variance explained by this model for the remaining dependent variables is considerably less than 40 percent. In this regression model the set of family
Table 13

Hierarchical Analysis of the Set of Family Variables and the Criteria of Competence While Controlling for the Set of Person Variables

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Variance due to the set of Person Variables</th>
<th>Incremental Variance of the Set of Family Variables</th>
<th>F</th>
<th>df</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average Grades</td>
<td>.44</td>
<td>.03</td>
<td>.80</td>
<td>7,92</td>
</tr>
<tr>
<td>English Grades</td>
<td>.31</td>
<td>.04</td>
<td>.88</td>
<td>7,92</td>
</tr>
<tr>
<td>Math Grades</td>
<td>.28</td>
<td>.03</td>
<td>.51</td>
<td>7,92</td>
</tr>
<tr>
<td>Attendance</td>
<td>.13</td>
<td>.11</td>
<td>1.95</td>
<td>7,92</td>
</tr>
<tr>
<td>Social Competence</td>
<td>.10</td>
<td>.05</td>
<td>.77</td>
<td>7,92</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Cum $R^2$</th>
<th>F</th>
<th>df</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average Grades</td>
<td>.47</td>
<td>5.94**</td>
<td>14,92</td>
</tr>
<tr>
<td>English Grades</td>
<td>.35</td>
<td>3.54**</td>
<td>14,92</td>
</tr>
<tr>
<td>Math Grades</td>
<td>.31</td>
<td>2.93**</td>
<td>14,92</td>
</tr>
<tr>
<td>Attendance</td>
<td>.24</td>
<td>2.05*</td>
<td>14,92</td>
</tr>
<tr>
<td>Social Competence</td>
<td>.15</td>
<td>1.13</td>
<td>14,92</td>
</tr>
</tbody>
</table>

*p < .05
**p < .01
variables does not make a significant contribution to the variance of the dependent variable. The set of family variables does come close to making a significant contribution to the variance of attendance, however. It is likely, with the large number of variables in this model, that the power of the (F) test was greatly diminished for the set of family variables with the set of person variables having already stolen much of the variance of these criteria.

Examining the Contribution of Individual Predictors. Of the person variables, black race shows a significant positive relationship to attendance, \( F(3,92) = 6.87, p < .05 \). Among the family variables, mother-only household shows a negative relationship to attendance, \( F(12,92) = 5.89, p < .05 \); and father-other household shows a positive relationship to attendance, \( F(13,92) = 4.42, p < .05 \). These results seem to suggest that family structure plays a role in school attendance as Galloway (1983) has already stated.

In the hierarchical regression model of person and family variables regressed on average grades, only person variables make significant contributions to the variance of average grades. Sex has a strong positive relationship, \( F(1,92) = 17.16, p < .0001 \) to average grades; as does math achievement, \( F(6,92) = 38.17, p < .0001 \); and reading achievement, \( F(7,92) = 4.65, p < .05 \). Age has a significant negative relationship to average grades, \( F(2,92) = 13.43, p < .001 \). In this two set regression model, family discord finished a surprising fifth place in predicting average grades, \( F(8,92) = 2.85, p < .10 \).

Summary. In this two set hierarchical regression model, person variables explained the bulk of the variance in eighth grade student earned grades. Person and family variables shared almost equally in explaining the variance of attendance. These two sets of variables explain very little of the variance of social competence.
This hierarchical model of person and family variables includes 14 predictors. With an ideal ratio of 10 subjects per variable for hierarchical analysis, 140 subjects would be needed for a confident interpretation of the results for this model. Therefore, caution is urged in the interpretation of the results for this hypothesis.

Additional Results of Interest

The hierarchical model of the set of person variables and the set of coping patterns was regressed on average grades. Person and coping variables explain 52 percent of the variance of average grades, exceeding the 47 percent of this variance explained by the sets of person and family variables.

The reverse relationship is true for attendance. The sets of person and coping variables explain 20 percent of the variance of attendance, while the sets of person and family variables explain 23 percent of this variance.

Comparison of Excluded Students to Students in the Study Sample

Twenty-five urban eighth grade students were excluded from the regression analysis due to incomplete data. Table 14 shows a comparison of means between this group of youngsters and the 107 students who provided complete data. It can be seen that these youngsters are very close in age and in social competence scores.

T tests were conducted to determine whether or not there were significant differences between the excluded youth and the students in the study sample in terms of average grades, math achievement, reading achievement, and passive-dependent coping. No significant differences were found between these means.
Table 14

Means for Study Sample Students and for Excluded Students

<table>
<thead>
<tr>
<th>Variable</th>
<th>Sample Students (n = 107)</th>
<th>Excluded Students</th>
<th>n</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average Grades</td>
<td>2.50</td>
<td>2.27</td>
<td>15</td>
</tr>
<tr>
<td>Social Competence</td>
<td>3.20</td>
<td>3.26</td>
<td>25</td>
</tr>
<tr>
<td>Age</td>
<td>13.95</td>
<td>13.92</td>
<td>25</td>
</tr>
<tr>
<td>Math Achievement</td>
<td>53.54</td>
<td>50.92</td>
<td>13</td>
</tr>
<tr>
<td>Reading Achievement</td>
<td>54.88</td>
<td>51.85</td>
<td>13</td>
</tr>
<tr>
<td>Family SEL</td>
<td>70.24</td>
<td>68.56</td>
<td>25</td>
</tr>
<tr>
<td>Passive-detached Coping</td>
<td>39.62</td>
<td>39.77</td>
<td>9</td>
</tr>
<tr>
<td>Active-detached</td>
<td>37.93</td>
<td>40.11</td>
<td>9</td>
</tr>
<tr>
<td>Passive-dependent</td>
<td>31.08</td>
<td>39.33</td>
<td>9</td>
</tr>
<tr>
<td>Active-dependent</td>
<td>65.44</td>
<td>67.66</td>
<td>9</td>
</tr>
<tr>
<td>Passive-independent</td>
<td>67.26</td>
<td>69.66</td>
<td>9</td>
</tr>
<tr>
<td>Active-independent</td>
<td>70.72</td>
<td>67.55</td>
<td>9</td>
</tr>
<tr>
<td>Passive-ambivalent</td>
<td>51.50</td>
<td>54.44</td>
<td>9</td>
</tr>
<tr>
<td>Active-ambivalent</td>
<td>54.70</td>
<td>54.77</td>
<td>9</td>
</tr>
</tbody>
</table>
Summary

Family discord and the interaction variable (of sex x family discord) do not make significant contributions to the variance of grades, attendance, and social competence. The set of family variables approached significance in its contribution to the variance of average grades, but this set of variables does not make a significant contribution to any other criteria.

The set of coping pattern variables are the surprise of this study by making a significant contribution to the variance of social competence.

As is to be expected, when the number of variables are increased in the models, greater amounts of variance are explained in the criteria. However, this fact should not detract from the substantial amounts of variance explained by both the sets of persona and family variables and the sets of person and coping pattern variables when regressed on average grades.
CHAPTER V
CONCLUSIONS AND IMPLICATIONS

This chapter has five parts: (1) an introduction, (2) conclusions regarding the five hypotheses tested, (3) conclusions on matters not originally planned as part of the study, (4) discussion of the conclusions, and a (5) summary.

Introduction

This study investigated predictors of school-based competence with a sample of eighth grade students from three Columbus middle schools. Hierarchical regression models were constructed to order predictor variables in the model by theoretical priority. Five hypotheses were tested to determine the effect of predictor variables on grades, attendance, and social competence.

One hundred and seven eighth graders participated in this study. This judgement sample of subjects proved to be representative of district-wide eighth graders in terms of race. Male eighth graders were under-represented in this sample, however. The majority of participants came from both-parent or mother-only households.

Key findings in this study of the competence of urban eighth graders replicates the results of national studies of high school youth (Bachman, O'Malley, and Johnston, 1978; Jencks et al., 1979), of studies of urban middle schoolers (Grannis, Fahs, and Bathea, 1989; Fahs, 1987), and of many of the dropout studies which were reviewed. As youngsters become teenagers, sex and age differences become more pronounced in the school setting. Sex, age,
and math achievement are strong predictors for average grades, and math and English grades in this study.

Research is also bringing to the foreground that the urban school setting is a radically different milieu than the suburban school. The Afro-American student appears to be more comfortable in this milieu. This study found that Afro-American race was the best predictor of attendance in the urban middle school.

Family variables and the set of Millon's coping patterns are of particular interest in this study. How do family differences influence the competence of youth in the urban middle school? Do different coping patterns influence grades, attendance, and social competence? It was found that these sets of variables do contribute to the differences in measures of school-based competence. The most striking finding is the strong relationship between the set of coping patterns and social competence. One can conclude that Millon's moderately pathological coping patterns are relevant to social competence in these three urban middle schools.

Conclusions About the Hypotheses

The first two hypotheses investigate the contribution of family discord and sex x family discord to school competence of urban youth. The last three hypotheses investigate the contribution of sets of variables to school competence. In this study the sets of (person, family, and coping patterns) variables have considerably more explanatory power.

Interpretation of Hypothesis 1: Family Discord as Predictor

Family discord is a surprisingly weak predictor of school-based competence, and school grades in particular. It is important to remember that the higher the family rapport/discord score, the greater the discomfort
and family conflict perceived by the adolescent. Weak negative relationship was found between family discord and all the dependent variables. It can be concluded that family discord doesn’t help the urban eighth grader in school, but the urban youth can use personal characteristics and coping skills to compensate for this factor.

In regard to average grades, the regression model of sex, age, and family discord did have a significant linear relationship. This result indicates that family discord by itself is not a significant predictor of grades, but it may play a supportive, indirect role in combination with other variables.

It is important to note that family discord has a negative relationship to reading achievement ($r = -.01$). This result somewhat replicates the findings of Norman-Jackson (1982) in her study of low income black children and primary grade reading achievement. She states that family climate, particularly parent-child interactions have a significant bearing on reading achievement by the second grade. Families which are encouraging of child activity and parent-child interactions have significantly better readers. Conversely, families of unsuccessful readers had considerably less parental encouragement and more discouragement of child activity including hitting, ignoring, and verbal responses such as “go away” or “shut up.” One can likewise see youth in discordant families shrink away from parental contact. Discomfort in parent-child relations certainly would not seem conducive to demonstrating and encouraging reading skills.

In contrast to average grades, the model of sex, age, and family discord is a weak predictor of attendance and social competence. Galloway (1983) and researchers of youth substance abuse (Menshch and Kandel, 1988; Beschner and Friedman, 1979) have already pointed out that family SEL,
peer relationships, and drug use are significant predictors of school attendance. In their longitudinal study of urban youth with mentally-ill parents, Feldman et al., (1987) observed that family discord is not a significant predictor of academic and social competence. Obviously, a host of multiple factors contribute to the school attendance and social competence of urban youth. Family discord, sex, and age are rather minor contributors to these two variables of school-based competence.

*Family discord and coping patterns.* The significant finding in regard to family discord is its strong relationship with coping patterns. Like Rutter (1970, 1974), this study found a link between family discord and personality. Rutter (1970) found that family discord predicts conduct disorder in boys. This study finds significant, positive associations between family discord and the active-ambivalent, negativistic coping pattern, \( r = .69 \), \( p < .0001 \); the active-independent, aggressive coping pattern \( r = .45 \), \( p < .0001 \); and the active-detached, avoidant coping pattern, \( r = .33 \) , \( p < .001 \). These correlations tend to support the construct and theoretical validity of the family rapport/discord \( (G) \) scale of the Millon Adolescent Personality Inventory (MAPI). Chronic family discord may likely encourage these coping patterns in youth and conversely, such moody, negativistic, aggressive, and avoidant adolescents may encourage further family discord.

**Interpretation of Hypothesis 2: Sex x Family Discord as Predictor**

Literature review has indicated a relationship between marital conflict, mother-child conflict and behavior problems in children; and this relationship is mediated by the sex of the child (Emery, 1982; Burman, John, & Margolin, 1987). Feldman et al., (1987 ) found that mother-child conflict was an important predictor of both school and activity competence.
Sexual differences in dropping out have been noted with male teenagers dropping out in higher percentages. It has also been observed that female students tend to earn higher grades (Poole & Lowe, 1987; Grannis et al., 1989). Steinberg and Elman (1986) found that parental permissiveness has a significantly more deleterious effect on the grades and attendance of boys than of girls. In this study sexual differences are apparent with average grades. The mean average grade for girls is 2.71 and for boys it is 2.10. Sex is certainly an important control variable in this study.

The regression model for this hypothesis is as follows: after controlling for sex and family discord, the interaction variable, sex x family discord is entered into the model. Sex x family discord contributes very little to the variance of grades, attendance, and social competence. Sex or sexual differences had already taken most of the variance in this particular model.

It is of interest to note that this interaction variable does make a negative contribution to the regression model for average grades, English grades, math grades, and attendance. Female subjects earn higher grades and have a greater range of grades earned. It is possible that this group of females students may have been more vulnerable in their school achievement to family discord and to rejecting and psychologically-controlling parents than the male subjects who have a more restricted range of earned grades. Werner and Smith (1982) observed such a vulnerability in female adolescents. As girls grew into adolescence they experienced more dependence on their families and more stress than boys; while boys experienced less stress and improved coping as they progressed through their teenage years.
The most notable contribution of sex x family discord occurs in the regression model with math grades. This predictor contributes in excess of one percent of the variance in math grades. In addition, sex x family discord has a negative relationship with average grades, English grades and attendance. It can be concluded that the combination of family discord and female sex distracts from school achievement for girls.

**Interpretation of Hypothesis 3: Family Factors as Predictor**

Although the set of family variables is not a significant predictor of school-based competence, this set of variables does approach significance with average grades. Two family variables deserve credit for this near significance. Family socioeconomic level (SEL) is a significant predictor of average grades, $F(4,97) = 4.90, p < .05$. Mother-only household is negatively related to average grades, $F(7,97) = 2.84, p < .10$.

In the literature review family SEL has been repeatedly cited as a good predictor of school achievement and dropping out of school. In this study family SEL was a significant predictor of average grades and math grades, but not of English grades. This difference can best be explained by the leniency of grading for English classes. Youth in this study have an average English grade of 2.8 and an average math grade of 2.2. English grades tend to cluster between 2.00 and 4.00, while math grades ranged from 0.00 to 4.00. This greater heterogeneity of math grades permits family SEL to explain more of its variance.

**Family structure.** Another variable of particular interest is family structure and its influence on school competence. The mother-only household approaches significance as a predictor of average grades (as noted above). This finding agrees with other research (Bachman et al., 1974;
Werner and Smith, 1982) which shows that youth from broken homes and father-absent homes lag behind in school achievement and attendance, and that male youth from such homes have more coping problems.

In this regression model of sex, age, and the set of family variables, the mother-only household was the only family factor significantly related to attendance, $F(9,97) = 5.68, p < .05$. This finding matches those of Galloway (1983) and suggests that the mother-only household places different demands on the adolescent than the other family types. A mother home alone may exert pressure on her youngster to stay home when she's sad or ill. When a single mother works she may have difficulty monitoring her child's attendance and certain youth take advantage of this situation.

**Family size.** In this study family size is negatively associated with English grades and the only variable approaching significance, $F(9,97) = 3.34, p < .10$. In addition family size came near to significance as a predictor of average grades, $F(9,97) = 2.47, p < .15$. This finding concurs with the literature which notes that language development may be hampered in large families due to limitations on parent-child interactions. Parents in such families have to contend with the demands and needs of several children and the increased need to bring in extra income to support them. One to one contact often falls by the wayside (Norman-Jackson, 1982; Jencks, et al., 1979; Bachman et al., 1978).

**Summary.** Family SEL, mother-only household, and family size are the family factors which contribute the most to academic achievement and attendance of these urban eighth graders.

**Interpretation of Hypothesis 4: Coping Patterns as Predictor**

Hypothesis 4 examined to what extent the regression model of sex, age, and coping patterns explain the variance of grades, attendance, and
social competence. While coping patterns as a set does not explain a significant increment of the variance of grades, this set of variables does explain 10 percent of the variance of average grades, a respectable proportion. In addition, the set of coping patterns explains 11 percent of the variance of attendance in this model; substantially more than sex and age.

**Social competence.** A major finding of this study is that the set of coping patterns is a significant predictor of social competence, F(8,96) = 6.06, p < .01. Social competence, measured by two scales of the Self-perception Profile for Adolescents, is an indicator of social acceptance and friendship-making ability of these urban eighth graders. Millon's eight coping patterns are mildly pathological coping patterns which are associated with youth who are fairly well compensated in their ego-defenses.

The results show that the passive-independent, confident coping (r = .29), p < .01 and the active-dependent, sociable coping pattern (r = .48) p < .0001, have a significant, positive relationship to social competence.

In contrast, the active-detached coping pattern (r = .45), p < .0001; and the active-ambivalent, negativistic coping pattern r = -.22), p. < .01, are negatively related to social competence.

These findings lend credence both to the construct validity of the Millon coping patterns and the two scales of the Self-Perception Profile for Adolescents. We would expect confident and sociable youth to be more popular and likable to their peers. Conversely, we expect the avoidant, moody, and negativistic teenagers to be less popular and to have fewer friends.

**Coping patterns and grades.** Two coping patterns are consistently and negatively related to grades. The active-ambivalent, negativistic coping
pattern was negatively related to math grades, and has a significant negative contribution to the variance of English grades, $F(10,96) = 4.03, p < .05$, and to average grades, $F(10,96) = 6.66, p < .05$. The passive-independent, confident and narcissistic coping pattern has a significant negative relationship to average grades, $F(7,99) = 4.24, p < .05$; and approaches such significance with math grades.

These findings somewhat replicate the work of Fahs (1987) with urban New York middle school students. Fahs found a negative association between the projection/blaming coping style and average grades for boys and between denial and final grades for girls. These coping styles can be considered roughly equivalent to the negativistic and the narcissistic coping patterns of the MAPI. What Millon (1981) states about the negativistic, passive-regressive coping patterns illuminates why this coping pattern is detrimental to achievement in the urban middle school. Millon states that this personality resists demands for adequate performance in both occupational and social settings. This youngster uses much energy in coping with restlessness, irritability, and low frustration tolerance, and therefore he or she has difficulty following long term goals, including the earning of good school grades.

The narcissistic, passive-independent coping youth is hindered in the school setting by her inflated self-worth and an indifference to shared responsibilities. These youth can justify achievement deficits through arrogance, expansive fantasies, and rationalization. Middle school youth with this coping pattern can insulate themselves from the demands, expectations, and values of parents and teachers when it comes to achievement.
**Coping Patterns and attendance.** Although the set of coping patterns does not make a significant contribution to the variance of attendance, three coping patterns have a significant relationship to attendance. The active-ambivalent, negativistic coping pattern, $F(10.96) = 5.68, p < .05$, and the passive-detached, submissive coping pattern $F(5, 101) = 5.32, p < .05$, have significant negative relationships with attendance. The passive-ambivalent, conforming coping pattern, $F(10, 96) = 5.89, p < .05$, has a positive relationship to attendance.

These results make sense. The negativistic, oppositional personality will challenge authority, including the need to attend school. This personality may drift toward peers who also flaunt conventional rules, including regular school attendance. The passive-detached, submissive youngster may have an enmeshed relationship with a parent and such relationship often encourage absenteeism, particularly when the youth is 'needed' at home. We expect the conforming personality to heed school rules and attend regularly.

**Interpretation of Hypothesis 5: The Set of Family Variables as Predictors After Controlling for Person Variables**

That person variables, both organismic and ability variables, are powerful predictors of school-based competence is apparent in this study. All five person variables played an important role in this study. Sex and math achievement are the best predictors of average grades and math grades when both person and the set of family variables are regressed on this criteria. Reading achievement, sex, and math achievement, in this order, are the best predictors of English grades using this same regression model. The only family variable to approach significance in this two set regression model is family discord, $F(8, 92) = 2.85, p \leq .10$ when regressed on average grades.
In this two set hierarchical model, math achievement is the strongest predictor of average grades and math grades. Literature review has already indicated that math achievement and reasoning ability are among the strongest predictors of academic achievement, educational attainment, and dropping out (Bachman et al., 1978; Jencks et al., 1979). Math problem-solving is an important component of verbal intelligence (Kaufman, 1979). For these reasons it is not surprising that this variable explains a lion's share of the variance of math and average grades.

While it is not surprising to find that math and reading achievement are good predictors of earned grades, it was surprising to find that math achievement is a good predictor of attendance and social competence as well. Of 14 variables regressed on attendance, math achievement took fifth place, approaching a significant relationship, $F(6, 100) = 6.70$, $p < .10$. In the hierarchical analysis of person and family variables regressed on social competence, math achievement took first place as predictor, $F(6, 100) = 6.70$, $p < .05$. Apparently, this math reasoning/competence factor has a strong relationship to social skills and the decision to attend school regularly. Jencks et al., (1979) pointed out that the adolescents with greater ability get more education because they are treated differently in the school setting, they talk more to teachers, and they have more ambitious friends. Math achievement may be a good reflection of a positive interaction between the adolescent and school.

This study purposely chose the urban Columbus school system to ensure a sizable proportion of minority youth in this sample. This study has 53 percent Afro-American youth participating compared to a district-wide percentage of 48 percent black youth. While the Columbus schools have 50
percent white students attending the eighth grade, only 42 percent chose to participate in this study. A parallel relationship exists with attendance, Afro-American race has a significant, positive relationship with attendance, \( F(4,92) = 6.87, p < .05 \); while white race is negatively correlated with this criteria, \( r = -.23, p' < .01 \).

These results suggest that Afro-American students are more motivated to attend the Columbus schools; feel more comfortable and accepted by the system; and appear to be more engaged in the system. The strong participation of Afro-American youth in this study is an indicator of this positive engagement. White youth and their families appear not to accept the trend in the Columbus Public Schools the past decade of busing and school integration. It may be that white youth and their families have more difficulty coping with middle school youth attending schools which are out of their neighborhoods and their cultural milieu.

Family variables make their strongest showing with attendance. After Afro-American race, mother-only household and father-other household are the best predictors in this hierarchical model. Mother-only household has a negative relationship to attendance, \( F(12,92) = 5.89, p < .05 \); and father-other household has a positive relationship, \( F(13,92) = 4.42, p < .05 \). It has already been stated that mother-only households encourage dependency and responsibility at home. Father households appear to be stricter in regards to attendance and self-discipline, and in encouraging educational attainment.

Summary. In the two set regression model of person and family variables, sex, math achievement, and reading achievement are the significant variables in predicting grades. Afro-American race, mother-only household and father-other household are the best predictors of attendance
using this model. Math achievement is the only significant predictor of social competence in this two set regression model.

Conclusions on Unplanned Matters in This Study

The big surprise in this study is the disparity in participants by sex. Male students were hesitant to take part in this study. There are several possible explanations.

One explanation is that urban female eighth graders are more competent than their male peers. The sexes do differ on academic competence as a significant difference occurs in average grades, $F(1,99) = 17.40, p < .0001$. However, when sex is regressed on social competence no significant value is obtained. Sex does have a positive correlation with social competence in this study, $(r = .13), p < .20$, but this relationship is weak.

It may be that female students are more mature in terms of social skills and self-discipline. The mature, responsible, self-adjusted, and less-peer-oriented students do better in school. Steinberg and Elmen (1986) found this to be the case in their study of 120 families with teenagers. They found that adolescents' grades are related to level of responsibility the youth assumes. This responsibility is measured in terms of orientation toward work and capacity to resist peer pressure. Steinberg & Elmen state that youth whose parents are less permissive, more accepting, and less psychologically controlling do better in school than their peers.

Parents may placate their male children more than their female children. As males grow older, they may kick up a fuss about going to school and some parents may think 'boys will be boys' and permit them more leeway in regard to absences and poor grades. Some researchers have noted these differing expectations for the sexes (Poole and Lowe, 1982; Kunjufu, 1990) by parents and teachers.
A more powerful explanation is the conflict between male sex and the school environment. Many male adolescents, particularly male youth from minority and bilingual cultures and youth from low SES families may find the school environment conflicts with their values, interests, and motivations. In addition, as Grannis et al. (1989) have documented, male adolescents have more difficulty coping with the stresses, disruptions, and physical confrontations which occur in the urban middle school setting.

Kunjufu (1990) states that schools currently are designed to discourage and destroy black males. Schools do not allow for sexual differences in maturation of verbal skills, including reading skills. Boys develop reading skills more slowly (in urban cities) than girls and Kunjufu states schools need to accommodate for these differences and teach accordingly. Kunjufu also sees schools encouraging female students by inadvertently attending more to them and giving them more clues, more feedback, and more time to answer questions than male students are given. When male students are given equal nurturance, attention, and prodding in the classroom, they will perform equally well. Kunjufu maintains that parents and teachers are not encouraging or expecting enough responsibility of black boys.

This study suggests that not enough responsibility is expected of all male adolescents in the urban middle school and in his community.

Discussion

As youngsters strive toward greater autonomy and increased peer orientation, family influence wanes and personal characteristics and individual coping patterns play a larger role in their lives. This is the major conclusion of this study. Werner and Smith (1982) observed this phenomena
in their longitudinal study of multi-cultural youth and their families. The results of this study with urban eighth graders sees a diminishing influence of family as youth grows through her teens. In this study, family environment, particularly family discord, has little direct influence on school behavior.

I believe this study verifies the theory and concepts espoused by Millon (1969, 1981). In particular, the relationship between family discord and coping patterns replicates much of what Millon states about the formation of coping patterns in youth. Youth internalize coping patterns modeled and encouraged by interactions with parents and siblings. The youth in this study show coping patterns which are highly correlated with reported family discord, including the ambivalent coping patterns, the detached coping patterns, and the active-independent coping pattern (see Table 5).

The internalization of coping patterns is reflected in a global sense by the response of youth and their families to this study. During the presentations of the study and after it had been explained that all inventories are coded confidentially by number, several students raised questions about the content of the personality/coping inventory (MAPI). 'Would personal questions be asked about their families and whether or not their parents got along?' These youth were wary and defensive about any invasion into the privacy of their family life.

A group of white students at one middle school sat huddled together and adamantly refused to participate in this study. 'No way are we going to participate in this study and in something this school endorses' – seemed to be their attitude. These eighth graders can be seen to be using a dependent and avoidant style of coping and using the group as a defense against any
outside threat. During testing, a handful of students at each school were seen consulting with their neighbors on answers. They were told that their own answers are important and to work on their own. After a few minutes these youngsters were again consulting their neighbors. It appears that this small group of youngsters couldn't read independently and they were particularly other-dependent in their coping.

The families of these eighth graders had difficulty coping with this study as well. The majority of eighth grade youth and their families shied away from this study—even after receiving additional information. The researcher observed a lack of communication between parents and their youth. A large percentage of parents had not talked to their teenagers about this study. Many students did not bother to inform their parents about the study or show them the extra permission form sent home with them. A number of parents wanted to know what kind of questions would be asked their youngsters. Only after much phone contact and encouragement, did appreciable numbers of permission forms come in to the schools. However, only twenty-five percent of the eighth graders in the three schools participated in the study.

The coping and defending of youth and their families in response to this study was explained to some extent by one school counselor's statements. The counselor stated that the school customarily receives only 30 to 40 percent response rate to any questionnaire mailed out. The counselor stated that it would be optimistic to receive much more than 30 or 40 permission forms back. The counselor commented: (in paraphrase) 'Many parents are skeptical and mistrusting of questionnaires and even more so when these surveyed involve Ohio State personnel.'
The school which provided the lowest number of subjects exemplifies another aspect of the avoidance of participation in this study. The students at this school are described as coming from the poorest families (lowest in family SEL). Staff morale at this school was observed to be considerably lower than the other two middle schools. At this school there appears to be an interaction of low family SEL, school climate (low staff morale and low student motivation), and parental mistrust of outsiders which affected the participation level of students in this study. The general attitude of many parents seems to be 'why are you dipping into our business?' and 'what damn business is it of yours whether or not my youngster is coping at school or at home?'

Recruiting of subjects in May of the school year may have had an attenuation effect on who was included in the study, particularly in the case of boys. A couple of parents stated that their sons could not participate due to poor grades and falling behind school work at this point in the school year. It was also observed that some behavior problems boys failed to bring in parental permission forms. It may very well be that boys with poor attendance, poor grades, and behavior problems were excluded from the study. In that sense, this study sample lost some explanatory power in predicting school-based competence.

Many of these same factors explain the low participation of male students in this study and the low academic achievement of urban male adolescents. We can construct a profile of the low achieving adolescent who is at risk of dropping out from the data and observations of this study. A typical Columbus dropout can be a white male from a low SEL family who earns low math and reading achievement scores and who is active-detached-avoidant, and active-ambivalent-negativistic in his coping patterns.
In sum, observations of students and contacts with parents suggest that a large percentage of urban youth have avoidant, mistrustful, and negativistic coping patterns which are modeled after family members. Such coping patterns have implications for the school competence of these youth and for eventual dropping out.

Future studies need to include conjoint personality testing of parents and youth to more clearly delineate the transfer of coping patterns from parent to child. One possible research question to be examined by such studies can be: 'Is the fact that many teenage mothers are raising urban male youngsters related to their immature coping patterns?' It may be that urban male youth have immature coping patterns which are not sophisticated enough to cope with urban idle school environments. These issues need to be empirically verified. In addition, longitudinal studies using family factors and coping patterns as predictors would further illuminate the long term relationship between family discord and coping. We could then get closer to answering the question: 'What is the relationship between chronic family discord and coping patterns in youth, their academic achievement, and eventual dropping out?'

Urban middle school teachers suggested the need for another study. During the implementation of the study, several teachers commented: 'You should be doing a study of middle school teachers coping with stress.' A fascinating and revealing study would examine all three perspectives: urban teacher, parent, and youth stress and coping. Personality/coping measures and stress inventories would be administered to all three groups. Stress inventories would include types of stressor, and ratings of chronicity and intensity of stressors. An important research question would be: 'Does
modeling and proximate contact with adults or peer contact have the greater influence on shaping coping patterns?" A longitudinal study with these three groups of subjects will provide empirical verification of how modeling and chronicity of stressors shape coping patterns in youth.

Summary

This study reflects the trend in urban youth to become more independent of family environment and become more dependent on their personal characteristics, abilities and coping patterns. As young people grow older their families have less influence on their school behavior. In this study, the set of family factors only approached significance with average grades. Individual coping patterns, however, play an increasingly important role as a youngster matures. The set of coping patterns is a significant predictor of social competence in this study.

This study is cross-sectional in nature and attempts to only explain current phenomena in the urban middle schools. There is a need to investigate the long term effects of individual coping patterns and family discord on urban middle school competence. Future studies with larger samples of students from grades 6 through 12 need to be conducted. These studies would include reports from parents and teachers on the coping and competence of these youngsters. By beginning at earlier ages, researchers can better observe the phenomena of family influence on coping patterns, the lessening of family influence on school behavior, and the increasing crystalization of these coping patterns in youth.
APPENDIX A
SAMPLE INVENTORIES
April 30, 1991

Mr. John Paulus
4119 Beauty Rose Avenue
Westerville, OH 43081

Dear Mr. Paulus:

In follow-up to our telephone conversation, you are hereby granted permission to reproduce the Millon Adolescent Personality Inventory in the appendix of your dissertation.

This grant of permission is subject to the following conditions:

1. A proper copyright notice in the name of Dr. Theodore Millon, followed by the words, "Reproduced by Permission," shall be included in the copy made. This notice should be placed on the first page of the appendix. In this case, the proper copyright notice is the one found on the MAPI Answer Sheet copyrighted by Dr. Millon and published by National Computer Systems, Inc.

2. This grant of permission is non-exclusive and is not to be construed as granting you any rights other than the permission described above.

We appreciate your attention to copyright issues and wish you the very best in your dissertation.

Sincerely,

Mary F. Spilles
Contracts Specialist

cc: Theodore Millon, Ph.D.
Dave Roble
PLEASE NOTE

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Appendix A, Million Adolescent Personality Inventory, 110-113
Appendix A, What I Am Like, 114-116

University Microfilms International
ADOLESCENT SURVEY

Your code number: 

This questionnaire is part of a middle school study of eighth graders in the Columbus Public Schools.

All your answers in this survey will be kept strictly confidential. No one will ever see them except the research staff at the Ohio State University.

It is very important that you answer the questions as best as you can. The success of the study depends on your effort.

INSTRUCTIONS

1. Please answer all questions in order.

2. For most questions you need only to circle a number by the best answer.

3. This is not a test, but you should work as quickly as you can.

4. Most students will find this survey interesting and enjoyable to fill out; we hope you will too. Thank you for being an important part of this research project.

Department of Educational Services & Research

THE OHIO STATE UNIVERSITY
Q-1 My age is .......
(Circle Number of Your Answer)
1 13
2 14
3 15
4 16
5 17 OR OLDER

Q-2 My mother's age is .........
(Circle Number)
1 BETWEEN 28-AND 32
2 33 TO 36
3 37 TO 40
4 41 TO 44
5 45 OR OLDER

Q-3 My father's age is .........
1 BETWEEN 28 AND 32
2 33 TO 36
3 37 TO 40
4 41 TO 44
5 45 OR OLDER

Q-4 My sex is .........
(Circle Number)
1 MALE
2 FEMALE

Q-5 Which of the following best describes your racial or ethnic identification? (Circle Number of Your Answer).
1 AFRO-AMERICAN
2 ASIAN-AMERICAN
3 CAUCASIAN-AMERICAN (WHITE)
4 NATIVE AMERICAN (AMERICAN INDIAN)
5 SPANISH-AMERICAN (HISPANIC)

Q-6 I live with .........
(Circle Number of Your Answer)
1 MY MOTHER
2 MY MOTHER AND FATHER
3 MY GRANDMOTHER OR AUNT
4 MY MOTHER AND STEP-FATHER/BOYFRIEND
5 MY FOSTER MOTHER

(If none of these answers are true, go to Q-7).
Q-7 I live with ......
(Circle Number)
1 MY FATHER
2 MY GRANDFATHER OR UNCLE
3 MY FOSTER PARENTS
4 MY FATHER AND STEP-MOTHER/GIRLFRIEND
5 OTHER:__________________________

Q-8 What is your position in your family and household?
1 OLDEST CHILD OR STEP-CHILD
2 SECOND CHILD/STEP-CHILD
3 THIRD CHILD/STEP-CHILD
4 FOURTH CHILD/STEP-CHILD
5 FIFTH OR LATER CHILD/STEP-CHILD

Q-9 How many adults (parents, grandparents, aunts, friends, etc.) live with you? (Circle Number of Answer)
1 ONE
2 TWO
3 THREE
4 FOUR
5 FIVE OR MORE

Q-10 How many brothers, sisters, half-brothers and sisters, and step-sisters and brothers live with you?
1 ONE
2 TWO
3 THREE
4 FOUR
5 FIVE OR MORE

Q-11 There is a stereo in our home.
1 NO
2 YES

Q-12 We have a dictionary at home.
1 NO
2 YES
Q-13 We get a daily newspaper at our house.
1 NO  
2 YES

Q-14 There is a map or globe at home.
1 NO  
2 YES

Q-15 We have 50 or more books at home.
1 NO  
2 YES

Q-16 We have a typewriter at our house.
1 NO  
2 YES

Q-17 How many rooms are there in your home?
1 FOUR OR LESS  
2 FIVE TO SIX  
3 SEVEN TO NINE  
4 TEN OR MORE

Q-18 What is the highest level of education which your father has completed? (Circle Number of Your Answer).
1 GRADE SCHOOL  
2 SOME HIGH SCHOOL  
3 COMPLETED HIGH SCHOOL  
4 SOME COLLEGE/TECHNICAL SCHOOL  
5 COMPLETED COLLEGE

Q-19 What is the highest level of education which your mother has completed? (Circle Number).
1 GRADE SCHOOL  
2 SOME HIGH SCHOOL  
3 COMPLETED HIGH SCHOOL  
4 SOME COLLEGE/TECHNICAL SCHOOL  
5 COMPLETED COLLEGE

Q-20 Describe the usual occupation (job, work) of the main wage earner in your household. (Write answer on line).

THANK YOU FOR YOUR EFFORT TO COMPLETE THIS SURVEY.
APPENDIX B

FORMS AND LETTERS USED IN THE STUDY
November 29, 1989

Dr. John Paulus
4119 Beauty Rose Ave.
Westerville, OH 43081

Dear John:

At Tim Ilg’s request, I convened a group within the district to review your present proposal. Rather than trying to paraphrase their comments, I am attaching them verbatim for your review.

You will remember that Dr. Claytor is the director of counselors and Dr. Matthews supervises school psychologists. Bert Wiser is a recent addition to our staff as Director of Assessment and Testing.

Feel free to call any of these folks to get more information and clarification. We all want the study to be a positive contribution.

Sincerely,

Howard Merriman, Ph.D.
Assistant Superintendent

HM/ar
Enclosure

c: Dr. Mary Claytor
Dr. Ed Matthews
Mr. Bert Wiser

P.S. I am sorry to hear about your daughter’s health problem. My best wishes for her improvement.
May 14, 1990

Dear Parent or Guardian,

Today we are seeing our youngsters facing many pressures both in and out of school. Middle school youngsters face a particular challenge in taking the step from elementary school to middle school and then on to high school.

We are interested in doing a study to see how eighth graders cope with the pressures and demands of middle school. We believe this research study will help us understand eighth graders better and will give us clues as to what is needed to prepare youngsters for high school.

By giving your eighth grader permission to participate in this study, you will allow your youngster to donate two class periods (of about 30 minutes) to complete three inventories. The three inventories include a personality inventory, a 'What I am like' inventory, and an Adolescent Survey - a short survey of family background.

This study has been approved by administrative staff for Guidance Services of the Columbus Public Schools. Your child's name will not appear on these inventories because they will be coded by number, thereby keeping each student's answers confidential. A complete study of 'coping in the eighth grade' will require some information from student records, specifically, grades, attendance, and city-wide achievement test scores. Again, any information from these records would be anonymously coded by number and used for research purposes only at The Ohio State University.

To receive a copy of the results of this study, you can call (in September) 292-6936.

By signing the attached permission form, you give your teenager permission to participate in this study; and you give us permission to access and confidentially copy information from your student's record. Please mail the permission form in the self-addressed envelope. Thank you.

Sincerely,

Donald J. Tosi
Principal Investigator

John Paulus
Doctoral Student
THE OHIO STATE UNIVERSITY

Parent/ Guardian Permission Form

CONSENT FOR PARTICIPATION IN
SOCIAL AND BEHAVIORAL RESEARCH

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

A Middle School Assessment Program to Determine How Eighth Graders Cope in School

Dr. Donald J. Tosi ___________________________ or his/her authorized representative has
(Principal Investigator)
explained the purpose of the study, the procedures to be followed, and the expected duration of my (my child's) participation. Possible benefits of the study have been described as have alternative procedures, if such procedures are applicable and available.

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

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

Date: ___________________ Signed: X X X X X X X __________ (Participant)

Signed: ___________________ Signed: ___________________
(Principal Investigator or his/her Authorized Representative) (Person Authorized to Consent for Participant - If Required)

Witness: ___________________

HS-027 (Rev. 3/87) —(To be used only in connection with social and behavioral research.)
PRESENTATION FOR RECRUITMENT OF EIGHTH GRADERS

Hi. I am John Paulus, a doctoral student in Counseling Education at the Ohio State University. My professors at Ohio State and I are interested in doing a study with eighth graders in your middle school.

We have become aware that teenagers today face many pressures. You have to contend with pressures in school, at home, and in your neighborhoods. We are particularly interested in how eighth graders cope with the pressures and demands of middle school.

We are asking you to volunteer for this study. That means you will be donating 2 class periods (about 80 minutes) of your time to complete 3 paper & pencil inventories. You will have the opportunity to complete a personality inventory, a 'What I Am Like' inventory, and an Adolescent Survey. The last-mentioned survey is a very short inventory which asks for family background information - such as: 'How many brothers and sisters live with you?'.

Only this researcher will see your answers. Your inventories will be coded by number so that only the researcher will know your answers and they will be used for research purposes only. If for some reason you are upset by participating in this study, you will be referred to your school counselor or other helping professional.

To participate in this study, you need to do two things: first, take two minutes to put your name on the sign-up sheet and the Student Assent Form. Secondly, ask your parents to sign the parent-permission form which I have mailed to them and have them mail this form back to me.

The address will be on the return envelope.

For those of you who would like to participate in this study... On the first sheet, I need you to print your name, your parent/guardian names, and a home phone number. The next form is the Student Assent Form. By signing this form, you state that you agree to take part in this study. Even when you sign this form, you can, at anytime, decide not to participate in the study.

Thank you for your time and interest. I'll be glad to answer any questions now. We hope to begin working with you in early May.

Researcher John Paulus

Witness
STUDENT ASSENT FORM

Dear Eighth Grade Student,

The Ohio State University’s Department of Educational Services & Research is interested in doing a study with Columbus eighth graders. This study involves giving eighth graders in your middle school three inventories to complete. The three inventories are: a personality inventory, a ‘What I Am Like’ inventory, and an Adolescent Survey which asks a few questions on family background.

Your participation is important in helping us understand eighth grade students and how they cope in middle school. What is learned from this study will help O.S.U. educational researchers and school counselors design new counseling programs and services.

By signing this form you agree to participate in this study and you agree to volunteer two school periods (about 80 minutes) of your time. You may decide at anytime not to take part in this study, even though you have signed this form. If for some reason you are upset by participating in this study, you will be referred to your school counselor, or other helping professional.

Sincerely,

Donald Tosi
Principal Investigator

John Paulus
Doctoral Student

Please note: Only the researcher will see your answers and the results of these inventories will only be used at the Ohio State University.

Student Signature

Date


Hammack, F. M. (1986). Large school systems' dropout reports: An analysis of definitions, procedures, and findings. Teachers College Record, 87(3), 324-341.


