



Development of a prediction model for identifying potential juvenile delinquents in the primary grades  
by Theresa Cassidy Pavlonnis

A thesis submitted in partial fulfillment of the requirements for the degree of Doctor of Education  
Montana State University

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Abstract:

The problem of this study was twofold. First it was to determine if a group of adjudicated youth between the ages of thirteen and eighteen years old and a matched sample of nonadjudicated youth differed on seven selected characteristics that existed in their early school years. Second it was to determine if selected characteristics occurring during those school years could predict a potential juvenile delinquent to school officials.

The problem was investigated by: a.) a review of the literature related to juvenile delinquency; b.) an investigation of court and school records; c.) a matching of juvenile and nonjuvenile delinquent youth by intelligence and achievement scores; and d.) the tabulation, analysis, and comparison of the data collected.

The hypotheses tested in this study were concerned with the relationship among juvenile delinquents and the characteristics of sex, race, socioeconomic status, history of family crime, marital status of parents, academic achievement in kindergarten through grades four, and special services received in the primary years. The hypotheses were tested with a two-way analysis of variance, a chi-square test of independence, and a multiple regression analysis at the .10 level of significance.

The major findings of the study were: a.) race, socioeconomic status, academic achievement, and special services provided in the primary years were significant for the means of intelligence when juvenile delinquents were compared to nonjuvenile delinquents; b.) delinquency status was dependent either on race, socioeconomic status, history of family crime, marital status of parents, or academic achievement; and c.) when all seven characteristics were taken as a whole there was a significant relationship found in the characteristics of sex, race, marital status of parents, history of family crime, and academic achievement.

The major recommendations of the study were: a.) to replicate in a rural area; b.) to conduct the study utilizing different variables; c.) to evaluate teacher predictions of early school characteristics that lead to delinquency; d.) to train personnel in juvenile delinquency; e.) to investigate the impact of broken homes in today's society and f.) to research students with similar profiles who received counseling in the early school years and study results.

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by

Theresa Cassidy Pavlonnis

A thesis submitted in partial fulfillment  
of the requirements for the degree

of

Doctor of Education

MONTANA STATE UNIVERSITY  
Bozeman, Montana

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APPROVAL

of a thesis submitted by

Theresa Cassidy Pavlonnis

This thesis has been read by each member of the thesis committee and has been found to be satisfactory regarding content, English usage, format, citations, bibliographic style, and consistency, and is ready for submission to the College of Graduate Studies.

5-13-85

Date

Robert J. Thibault

Chairperson, Graduate Committee

Approved for the Major Department

5-13-85

Date

Donald L. Robson

Head, Major Department

Approved for the College of Graduate Studies

5-20-85

Date

W. B. Malone

Graduate Dean

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## ABSTRACT

The problem of this study was twofold. First it was to determine if a group of adjudicated youth between the ages of thirteen and eighteen years old and a matched sample of nonadjudicated youth differed on seven selected characteristics that existed in their early school years. Second it was to determine if selected characteristics occurring during those school years could predict a potential juvenile delinquent to school officials.

The problem was investigated by: a.) a review of the literature related to juvenile delinquency; b.) an investigation of court and school records; c.) a matching of juvenile and nonjuvenile delinquent youth by intelligence and achievement scores; and d.) the tabulation, analysis, and comparison of the data collected.

The hypotheses tested in this study were concerned with the relationship among juvenile delinquents and the characteristics of sex, race, socioeconomic status, history of family crime, marital status of parents, academic achievement in kindergarten through grades four, and special services received in the primary years. The hypotheses were tested with a two-way analysis of variance, a chi-square test of independence, and a multiple regression analysis at the .10 level of significance.

The major findings of the study were: a.) race, socioeconomic status, academic achievement, and special services provided in the primary years were significant for the means of intelligence when juvenile delinquents were compared to nonjuvenile delinquents; b.) delinquency status was dependent either on race, socioeconomic status, history of family crime, marital status of parents, or academic achievement; and c.) when all seven characteristics were taken as a whole there was a significant relationship found in the characteristics of sex, race, marital status of parents, history of family crime, and academic achievement.

The major recommendations of the study were: a.) to replicate in a rural area; b.) to conduct the study utilizing different variables; c.) to evaluate teacher predictions of early school characteristics that lead to delinquency; d.) to train personnel in juvenile delinquency; e.) to investigate the impact of broken homes in today's society and f.) to research students with similar profiles who received counseling in the early school years and study results.

## CHAPTER I

## INTRODUCTION

Delinquency is a dynamic and complex social problem. It has no single cause or simple cure. Each case is a unique experience. . . . Delinquency evolves as a result of specific life experiences. It also devolves because of past, present, or ongoing experiences that somehow affect a socially approved change of behavior (Brown, 1981:436).

This dynamic and complex social problem of delinquency has become a major concern of the schools over the past twenty years. School officials are no longer able to ignore the problem of juvenile delinquency by expelling and suspending unruly students. Administrators are being sought out by law enforcement agencies, the court system and the public to help alleviate the increasing numbers of juvenile delinquents (Scott, 1982).

The President's Commission on Law Enforcement has found that approximately ninety percent of all juveniles commit at least one act for which they could be arrested and arraigned before the courts (Nigem, LaGrange, and King, 1981). If this is accurate, a major portion of a school's population could become involved with the law before graduation. Recently, the judicial system and probation agencies have begun to refer these troubled youth back to the local school districts (Montana, 1983b). This creates a

different set of problems for the administrator in today's schools.

The advent of the Education of the Handicapped Children's Act; PL 94:142 caused the sudden shift from the courts being responsible for the incorrigible youth to the schools (Post, 1981). Signed in 1975 by President Gerald R. Ford, to have been implemented by September, 1978, this piece of legislation guaranteed all handicapped children the right to a free and appropriate public education. Under the protection of this law came not only the physically handicapped and mentally retarded but the learning disabled and behaviorally maladjusted as well. It was with this piece of legislation that strict guidelines were placed on public schools, legislating their responsibility in educating all handicapped youth. The law also implied that any student being considered for expulsion or suspension should be considered a special learning problem; the rationale being that the school was not supplying an appropriate education if the student could not succeed in the system and might well have an emotional/learning problem (Montana, 1983b).

Implementing the idea that schools should provide specialized education for all handicapped youth, the courts began sending juvenile delinquents back to school rather than to jail (Montana, 1983). Many juvenile delinquents coming before the courts were found to be learning disabled or emotionally disturbed in the judicial system's

psychological assessment battery. These youth were then referred back to the local school district to be placed in special education programs. Section 5.1 of the Special Education Reference Manual, Montana Laws and Rules (1983b) states that:

1. All handicapped children in Montana are entitled to a free appropriate public education provided in the least restrictive alternative setting. To the maximum extent appropriate, handicapped children, including children in public or private institutions or other care facilities, shall be educated with children who are not handicapped. Separate schooling or other removal of handicapped children from the regular educational environment may occur only when the nature or severity of the handicap is such that education in regular classes with the use of supplementary aids and services cannot be achieved satisfactorily.

2. After September 1, 1977, the board of trustees in every school district must provide or establish and maintain a special education program for every handicapped person between the ages of six and eighteen, inclusive.

This requirement produced numerous problems for school administrators that continue today. The school administrator responsible for controlling and disciplining within the schools became responsible for controlling and/or correcting additional delinquent behavior by adjudicated youth, that is, one who has appeared before the courts. This occurred while the public pointed to the lack of discipline as the number one problem in America's schools (Elam, 1983). McDermott (1980) felt that the placement of these youth back into the local school program usually led to more occurrences of violence in school and greater dangers to the other staff and students. McDermott continued

to say that the school administrator had a responsibility to reduce fear elements and feelings of anxiety and apprehension among students and faculty. Additionally, she claimed that the apprehension of fear was a detriment to the learning climate of an entire building and caused decline of morale, poor standards and ineffective learning.

This responsibility for supplying an appropriate education for all labelled youth meant that a complete psychological and educational assessment of the youth for placement in a special education class had to be conducted involving a number of agencies, meetings, and documentation (Montana, 1983b). The agencies and persons which had to spend their time and efforts in such a process included, at the minimum, probation officers, social rehabilitative service workers, special education personnel, school officials, and parents. The inordinate amount of time necessary to initiate the placement was necessary according to Feldhusen (1978). He felt that if the youth was placed back into the school setting without appropriate support services, it was questionable that the youth would succeed or that the school administrator would be able to control the subsequent problems that arose from the situation.

Finally, the failure of the student in the special class placement in the local school program placed greater financial stress on the school district to provide an appropriate placement outside the district. The Education of

the Handicapped Children's Act was quite explicit in defining the school's responsibility for providing an education that was appropriate and equal for the handicapped student (Montana, 1983b). The students referred by the courts who were labelled learning disabled or behaviorally maladjusted were afforded all rights of the legislation because of their handicapping condition (Montana, 1983b).

In many cases it was too late for the schools to try to correct or modify the behavior when special programming was attempted for the first time at ages fifteen or sixteen (Miller, 1971 and Mulligan, 1969). At times the program failed, the school failed and the student failed, yet the student was now protected because he had been labelled handicapped. The law provided that the school district must provide an appropriate education. If it could not it must find a program somewhere that could educate the student and pay the full expense of that program (Montana, 1983b). The school district was now caught in a real paradox. While it could not refuse to accept the court order once the student had been labelled handicapped, it could not abdicate its responsibility even if it did not have sufficient programming. This has resulted in school districts having to spend an average cost of thirty thousand dollars per student each year in residential treatment centers for maladjusted problem youth (Great Falls Special Education Department, 1984).

Cellini, (1982); Margolin and others, (1955); Podby and Mallory, (1978); Swanstrom and others, (1981); and Zimmerman, (1981) have conducted extensive research attributing juvenile delinquency to learning disabilities. Balow, (1961) Bell, (1975); Ducey, (1980); Feldhusen, (1978); Lunden, (1964); Robinson, (1960); and Wertlieb, (1982) attempted to associate public schools and the roles they assumed with juvenile delinquency. But most research that was done concentrated on the problems that existed at the time the youth became involved in juvenile delinquency, such as sociological status, learning problems or familial related factors.

Little has been done to ascertain if school officials can attempt to prevent the delinquency from occurring at an early school age through an understanding of the primary school year characteristics. If there is a means of preventing youth from gravitating towards crime and if there is a means of predicting behavior in the early school years then it is an obligation of each school official to find that link and direct students into meaningful, productive lives.

#### Statement of the Problem

The concept of a free and equal education for all has created schools which have become the place where youth congregate and spend the major portion of their time.



Schooling for all has turned juvenile delinquency into a school problem as well as a societal problem (Doyle, 1978). The results of education for all youth have not matched the results anticipated by our democratic society. Gallup Polls (Gallup, 1977; Elam, 1982, Gallup, 1984), school officials, legislators, and even the President of the United States (U.S. President, Reagan, Ronald) have expressed that criminal activity and discipline problems in the schools are of major consideration.

Because juvenile delinquents' behavior in the schools and on the streets is a major societal concern, a need existed to determine if there was a means of predicting the potential for juvenile delinquent behavior during the child's early school years in order to prevent the youth from entering into a delinquent adolescence. Therefore, the problem of this study was twofold. First, it was to determine if a group of adjudicated youth between the ages of thirteen and eighteen years committing juvenile delinquent acts between June, 1982 and December, 1983 and a matched sample of nonadjudicated youth currently enrolled in the Great Falls Public Schools differed on seven selected characteristics that existed in their early school years of kindergarten through grade four. Second, it was to determine if selected characteristics occurring during those early school years could discriminate between a potential juvenile delinquent and a nonjuvenile delinquent. ✓

### Need for the Study

School administrators are responsible for administering schools that produce productive, civic minded citizens who will contribute to society in a positive way (Feldhusen, 1978). If school administrators could begin to understand some of the factors that discriminate between non-juvenile delinquent youth and juvenile delinquent youth, Feldhusen believed that perhaps they could begin to address the school factors that would direct the child into more productive channels of maturation and citizenship. With the concern of the public's attitude towards discipline

the challenge for concerned parents and professionals alike is to establish a concerted program of education, bringing together the resources of numerous disciplines, motivating research, sponsoring appropriate legislation, pooling existing knowledge, and building upward... (Keldgord, 1969:99)

to enhance not only the juvenile delinquent's chances but to better the community as well.

Justification for this researcher's study focused on a number of reasons. First, the study provided a rationale and justification for funding special programs that were assigned students predicted to be potential juvenile delinquents (Mayer and Butterworth, 1981; Post, 1981; and Zoet, 1978). These special programs could include counseling, values clarification, psychological intervention, family therapy, individual remediation, and/or special class placement. All of these programs are expensive because of

the low staff/student ratio and the amount of time needed for each case. Without reliable data to support such programs, school districts would find it more and more difficult to secure funding.

Second, this study could create a better coordination of services between school and community agencies to apply preventative measures rather than crisis intervention techniques (Bell, 1975; Cellini and Snowman, 1982; and Scott, 1982). One of the widely voiced concerns among professionals is that the many agencies do not work together (Keldgord, 1969) and that too often students are involved in mental health counseling or in trouble with the law or under a protective agency and the school officials are completely unaware of it. Our system could work more efficiently if the agencies involved with the student worked together as a team striving to help the total individual rather than working with him in separate pieces (Jacobsen, 1974).

Third, this investigation developed a rationale for producing independent, civic minded citizens rather than juveniles that become tax burdens to the state in the form of criminals and welfare recipients. Perhaps if money were allocated to special programs during the primary school years, the cost effectiveness would be readily apparent when compared to the residential treatment costs now being spent on these youth (Ball, Parker and Saunders, 1983). A cost in excess of thirty thousand dollars per year for residential

treatment centers within the state of Montana is playing havoc with school district budgets and is on the rise each year (Cellini and Snowman, 1982; Great Falls Special Education Department, 1984). Such large expenditures of money on so few could more efficiently be used if treatment took place before the youth found himself in trouble with the courts and the schools (Miller, 1971).

Finally, this study could assist school administrators in better evaluating each child's individual needs and in attempting to meet each child's needs in his individual environment. By nurturing staff attitudes that would enhance each child's development in the primary years, school administrators could be assisting in helping these children to lead productive lives.

#### General Questions to be Answered

The following questions were investigated and answered in this study.

1. Are there a common set of characteristics that emerge in the early school years of kindergarten through grades four that can alert school officials to a potential pattern of juvenile delinquency ?
2. Does the level of intelligence of an individual predispose that youth to an adolescent life of delinquency ?
3. Are there any special services provided in the primary school years that might prevent a potential juvenile

delinquent from becoming involved in delinquency in his adolescent years?

4. Are there certain sociological or academic factors that have a greater influence on the development of a juvenile delinquent youth?

5. Are there any differences in intelligence levels of delinquent youth with regards to specific characteristics existing in the early school years?

#### General Procedures

This study began with an extensive review of the literature related to juvenile delinquency dating back to 1940. The topics reviewed in the literature included current attitudes toward juvenile delinquency, sociological and familial related causes, school related factors, labelling theory and self-esteem, and causation and predictive models. The authorities reviewed had not been able to define any definitive research on the causation of delinquency but many found substantial links between certain characteristics and juvenile delinquency.

The study investigated a group of thirteen to eighteen year old youth arraigned for juvenile delinquent acts before the Cascade County Court System from June, 1982 to December, 1983 and a group of 13 to 18 year old youth that had no previous involvement with the Court System and were currently enrolled in the Great Falls Public School

System. The two groups of youth were compared on sex, race, history of family crime, socioeconomic status, marital status of parents, academic achievement in kindergarten through grade four and placement in special services provided by the school district in kindergarten through grade four.

For the purpose of this study the juvenile delinquent group was matched to the nonjuvenile delinquents by achievement test scores on the Cognitive Abilities Test (Thorndike and others, 1968) and the Iowa Test of Basic Skills (Hieronymus and others, 1979) in grades two and four, respectively. The groups were divided into below average, low average, average, high average and superior intelligence scores. The statistical procedures of two-way analysis of variance, chi-square test of independence, and multiple regression analysis were applied to the hypotheses to determine if there was any predictive behavior for the juvenile delinquents as opposed to the nonjuvenile delinquents and if the early school years could discriminate between an individual predisposed to juvenile delinquency and one not so predisposed.

#### Limitations

Only juvenile delinquents that attended the Great Falls Public Schools in kindergarten through grades four were included in the study. This was intended to eliminate

introducing another variable of changing residence during the primary school years.

#### Delimitations

1. The study was conducted on Cascade County Youth attending Great Falls Public Schools.

2. The study covered the period of June, 1982 through December, 1983.

3. The Cognitive Abilities Test (Thorndike and others, 1968) and the Iowa Test of Basic Skills (Hieronymus and others, 1979) were used.

4. The study was limited to using data of students in kindergarten through grade four. Since the study was intended to be predictive utilizing higher grade levels would have no bearing on the predictor variables (Loeber, and Dishion, 1983).

#### Definition of Terms

Academic achievement - measurement of the basic skill areas achieved by an individual in a school setting (Buros, 1978).

Achievement test - (ITBS) a test designed to measure the pupil's development in the basic skill areas of reading, spelling, and math and to determine the developmental level of each pupil for instructional purposes (Hieronymus, 1979).

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Adjudicated - appearance before the courts for a judicial decision (Montana, 1983).

Appropriate public education - provision of regular or special education and related aids and services that are designed to meet individual needs of handicapped persons as adequately as the needs of nonhandicapped are met; 20-1-4016 (PL 94:142, 1975).

Behaviorally maladjusted/emotionally disturbed - one who demonstrates an observable, generalized behavioral pattern which markedly interferes with the normal educational processes to such a degree that standard alternatives in the regular program have shown to be ineffective (Great Falls, 1981).

Handicapped - a child evaluated as being mentally retarded, hard of hearing, deaf, speech impaired, visually impaired, emotionally disturbed, orthopedically handicapped, other health impaired, or as having a specific learning disability, who, because of those impairments, needs special education and related services (Montana, 1983b).

Intelligence - mental ability or capacity to learn often interpreted as an intelligence quotient (I.Q.). IQ scores grouped into below average, average, and above average from the Cognitive Abilities Test were utilized to match students in the sample.(Buros, 1978).

Intelligence Test - (CAT) a test designed to assess the development of cognitive abilities from kindergarten

through the first year of college (Thorndike, 1968).

Juvenile Delinquent - a youth who has committed an offense, which if committed by an adult, would constitute a criminal offense (Montana, 1983).

Learning Disability - a disorder in one or more of the basic psychological processes which produces a severe discrepancy between achievement and ability; 20-7-401 (PL 94: 142, 1975).

PL 94: 142 - Public Law signed into effect in 1975 by President Gerald R. Ford. This law known as the Education of the Handicapped Children's Act provided for a free and appropriate education for all the handicapped, ages six to eighteen (PL 94:142, 1975).

Socioeconomic Status - relating to the social and economic factors of a person's lifestyle including the educational status, income level, and occupation of the parents and their family (Reiss, 1961).

Special Education - specially designed instruction, given at no cost to the parents or guardians, to meet the unique needs of a handicapped child, including but not limited to, classroom instruction, instruction in physical education, home instruction, and instruction in hospitals and institutions; 20-7-401 (PL 94: 142, 1975).

Vandalism - willful or malicious defacement or destruction of private or public property (Steen, 1966).

Violence - physical injury or abuse (Steen, 1966).

## Summary

The problem of juvenile delinquency and adolescent crime has moved from the streets to the school halls because of the "education for all children" concept. School officials are faced daily with the problem of meeting the demands of school discipline and maintaining an environment conducive to learning.

This study looked at the problem of juvenile delinquency and the relationship, if any, that the early school years of kindergarten through grade four had on predisposing a youngster to adolescent crime. The study hypothesized that a prediction model could be drawn by studying a set of variables between juvenile delinquent youth and nonjuvenile delinquent youth. This prediction model was to have the potential of helping school administrators prevent delinquency by working more intensely with the individual and attempting to change some of the characteristics that might lead to criminal behavior.

## CHAPTER II

## REVIEW OF RELATED LITERATURE

This chapter contains a review of the literature on juvenile delinquency. The method of organization is as follows:

1. General Findings and Current Attitudes Toward Juvenile Delinquency
2. Sociological and Familial Related Causes
3. School Related Factors
4. Labelling Theory and Self-esteem
5. Causation and Predictive Models

The first topic serves to introduce current themes that are apparent in the field of juvenile delinquency today. The topic of sociological and familial related causes includes literature on the socioeconomic status of juvenile offenders as well as family crime, parental value systems and child rearing practices. Levels of learning disabilities, intelligence, and reading abilities are reviewed in the school related literature. The latter two topics are developed by reviewing studies that have researched probable causes for juveniles becoming involved in delinquency and the predictive abilities of teachers.

In reviewing the literature this researcher found that the noted authorities agreed that:

Delinquency is not a unitary phenomenon. It takes many forms and arises out of varied causes. No one emphasis or theory can provide adequate explanations and programs. It may have its roots in psychopathology, neighborhood mores, youth behavioral styles, blocked economic opportunities and the like. ... Some manage to 'make it', to get on the educational and economic escalators, and to join the community; many do not (Bernstein, 1969:3).

#### General Findings and Current Attitudes Toward Juvenile Delinquency

While juvenile delinquency is a problem that has been with American society since the inception of our country (Newman, 1980), the agedness of the problem does not make it any the less important or less devastating to society. Duke (1980:24) has stated that:

historically, the standard societal response to increases in problematic behavior has been to increase the number of [administrative] roles circumscribing conduct or to make the punishment for misconduct more severe. Evidence exists that these options are still preferred by many educators.

Evidence also exists that this is not the most desirable recourse to solving the problem (Burgan and Rubel, 1980). Looking historically at the problem, LeJins (1961) explained how juvenile delinquency began to take a different course at the turn of the century. It was at this time that society began to look at juveniles differently from adults in the criminal acts they had committed. The court system became primarily concerned with the welfare of the

child rather than his punishment. LeJins further stated that the courts felt the emphasis of responsibility could not fairly be placed on the child because there were too many overwhelming possibilities that may have caused the misbehavior, including his parents and the community.

Halatyn (1980), though, has been extremely critical of this political process that established new ideas and legislation by listening to those involved in the court systems without any consultation of researchers in the area. He found that as a result, very few problem solving processes had ever been legislated for issues such as juvenile delinquency and he issued the challenge to researchers to lobby for effective legislation in the areas of social programming.

Martin Gold (1975) found that the frequency and seriousness of delinquent behavior among boys thirteen to sixteen years old in 1972 was lower than the delinquent behavior of a similar group in 1967. Surprisingly, he found the delinquent behavior of girls was more frequent in 1972. He attributed this delinquency increase in girls to the more casual use of marijuana and alcohol. If the use of drugs and alcohol were eliminated from the results of the study, the girls' delinquent behavior had actually not increased and the boys' delinquent behavior had in fact declined. Gold concluded that it was not surprising to find a greater increase in drug and alcohol usage among the teens in 1972

compared to 1967 but what was surprising was to find that the overall rate of delinquency had not increased.

Gold attributed the differences in his findings from those reported in the current journals to different sources of data used by himself and the researchers. These investigators received their information from FBI records and local metropolitan police records while Gold's source of data was the self-report method by juvenile delinquents. Gold believed that changes in record keeping procedures, definitions and/or policies relating to juvenile offenders may have contributed to a distorted system of record keeping indicating an increase in juvenile crime. While he admitted the self-report method was not perfect, he kept the samples and measuring procedures nearly identical to keep all of the sources of error constant.

Walter Doyle (1978) concurred with Gold's findings that the behavior of youth was no worse than it ever was but his conclusions were different from Gold's. Doyle proposed that as society had placed legislation on youth for mandatory school attendance, the shift of crime had changed its focus from the streets to the school corridors. Doyle concluded that the schools were enrolling more students for a longer period of time than ever before and continued to work with the incorrigible students that formerly had been dismissed from school for such behaviors. He further emphasized his conclusions by stating that as the school had

become the place where youth congregated, the juvenile misbehaviors had become a "school reality rather than a social reality" (Doyle, 1978:8).

#### Sociological and Familial Related Causes

The idea of social class being a determining factor in a juvenile's behavior has been extensively researched.

Marvin D. Krohn and others (1980:303) stated:

From the earliest days of sociological interest in delinquency in this country social class has occupied a central position of attention both as an indication of whose children would be 'saved' by the juvenile court and other reformist movements and as an explanation of why some of the theoretical debate and empirical research on the etiology of delinquency has continued to center on the direction and magnitude of the relationship of delinquency to social class.

Numerous studies have been conducted trying to prove or disprove the theory that socioeconomic status causes delinquency or at the very least, predisposes a youngster of low socioeconomic status to more delinquent behavior (Cohen, 1955; Harry, 1974; Krohn and others, 1980; and Reiss and Rhodes, 1963).

Albert Cohen (1955), one of the most widely recognized authorities in the field of juvenile delinquency, hypothesized that lower socioeconomic class boys would be more prone to delinquent behavior because they became more and more frustrated when they tried to achieve middle class status. This frustration, he said, would then be channeled into delinquent acts and gang behavior.



Reiss and Rhodes (1963) tried to further support this theory by conducting a study with lower socioeconomic class juveniles in a community of socially heterogeneous youth; that is, youth that did not belong to the same socioeconomic class but lived in the same community. Their hypothesis was that the frustration of being unable to achieve social status would be greater in socioeconomic heterogeneous areas than socioeconomic homogeneous areas and would lead to greater incidences of juvenile delinquency.

Reiss and Rhodes found that they were not able to support Cohen's theory and they found no evidence to support the idea that lower class youth in a heterogeneous community committed more delinquent acts. Nor did they find any relationship between social status, status deprivation and delinquent behavior within the different status areas.

Harry (1974) began with the same premise of homogeneous/heterogeneous class values and tried to determine the extent of influence they had on juvenile delinquent behavior. But rather than taking the position that heterogeneous class structure would lead to delinquent misbehavior Harry argued that the homogeneous or similar status class structure would be more apt to produce the maladaptive behavior. Harry posited that while lower class schools would try to foster middle class values the student culture would not. His hypothesis was that there would be an inverse relationship between social class and crime. Harry

stopped there rather than empirically testing his hypothesis and sought to garner support for it by citing other studies that had found inverse relationships between social status and delinquency within large industrial areas and dismissed studies contradictory to his assumptions.

A study by Johnstone (1978), however, found results contrary to Harry's hypothesis. In low status areas, Johnstone found that delinquency rates were not apparent in low socioeconomic groups but rather higher delinquency occurred in middle or upper class communities by lower class youths living in those areas. This supported the idea of higher delinquency occurring in socially heterogeneous communities rather than homogeneous.

In a further attempt to determine if any relationship existed between the social status of the school and the social status of the individual with the rate of juvenile delinquency, Krohn and others (1980) conducted a study in two midwestern states. With a sample of 1,725 male and female adolescents in two Midwestern states, Krohn's data was collected on individual social status, aggregate school status and deviance. The results of this study provided little support for the theory that higher rates of delinquency occurred in schools with lower socioeconomic students while schools with higher social status youth had lower incidences of juvenile crime offenders. Krohn concluded that his findings were consistent with twenty years of research that

indicated delinquent behavior was not predictable by social status regardless of the predominant social class of the school.

In Delinquency and Opportunity , Cloward and Ohlin (1960) discussed the theory of deviant behavior among juveniles and the delinquent subculture among those juveniles. They argued that the juvenile delinquent's discontent over their limited access to better social status and their high accessibility to illegitimate actions provided the impetus for delinquent behavior. Their theory determined that not only must the frustration of being unable to attain middle class status be there for the juvenile delinquent but also the access to illegitimate paths.

Palmore and Hammond (1964) attempted to find out if Cloward and Ohlin's theory was sufficient to explain delinquent acts. In a longitudinal study of youth on the Aid to Dependent Children roles, Palmore and Hammond followed the children from their sixth to their nineteenth birthdays. They investigated the effects of two variables on delinquency: 1.) legitimate opportunity as indicated by race, sex, and school success and, 2.) illegitimate opportunity as indicated by family and neighborhood deviance. The researchers admitted that the data could not adequately confirm the theoretical implication regarding interaction effects. They found that the availability of illegitimate opportunities had greater impact on the deviance of those

with fewer legitimate opportunities. They did not say, though, that their data implied that the interaction effects of legitimate and illegitimate opportunity structures should not be looked for in future studies. These findings on opportunity and delinquency directed the review into more defined research of social class and its effect on juvenile behavior.

Gerald Pine (1965), conducted a study in which he attempted to find if there was a significant relationship among social class, social mobility and delinquent behavior. His contention was that delinquency statistics were heavily biased in the favor of upper and middle class youth. Pine found that this was true because their behavior was more likely to be handled outside of the legal institution because of the parent's influence, wealth and control. His sample consisted of upper middle, lower middle and lower class youths. Pine found that delinquent behavior was more a function of the class the youth aspired to or toward which he was moving than a function of the class the youth was presently in. His findings indicated that delinquent behavior was not unique to lower classes but rather how securely the youth was located in that class. Pine attributed value systems to part of the probability of delinquent actions. For example, a lower class youth with middle class values was less likely to commit delinquent acts than a youth regardless of his social class with lower class values.

In another sociological study, Pine (1966) contended that delinquency was not the exclusive property of lower class populations but in fact existed in all levels of society. He dealt with ten propositions supporting his contentions. His basic premise was that affluent children have been and are increasingly more involved in delinquent behavior but have had the sympathy of the police and the resources to cover their actions. This has brought forward the question of services available for the less fortunate and the reasons why lower social status groups are apt to be found delinquent before their more affluent counterparts.

Seymour Rubenfield (1967) was highly critical of not only the options of services that existed to deal with delinquency in lower class populations but, also, of the research done by Cloward and Ohlin (1960) and Cohen (1955). Rubenfield said that their perspectives did not take into account "other important characteristics of high delinquency rate groups besides poverty". He went on to say that:

What is needed is a policy approach which sees lower class delinquency as just one set of related social ills arising from a whole way of life that may be characteristic of some deprived subcultures (Rubenfield, 1967:33).

Rubenfield believed that there was a set of characteristics common to lower class delinquency which was part of the culture of poverty. He enumerated those characteristics as: 1.) possessing one of three types of anomie (i.e., normative standards of conduct which are weak or

lacking), 2.) sentiments which were antisocial and bred estrangement and antagonism and, 3.) a high risk of psychological damage among deprived groups. Rubenfield called for a community integration approach as an intervention strategy. In such a process social agencies and community people worked together to change sentiments and attitudes and better individuals in need of their help.

A study by the National Institute for Juvenile Justice and Delinquency Prevention (Scott, 1982) found that if a youngster's moral training had been interrupted by unloving or poorly trained parents, the child would more likely be influenced by similar youths who would provide rewards and support of the criminal world for him. In fact, the youth would learn to accept criminal behavior as normal in local communities where violent or criminal conduct is tolerated or even encouraged.

The authors suggested that the cultural transmission of criminal values by the community kept the delinquency rate high and preserved the cultural disorganization. This created a cycle of poor moral development leading to criminal reinforcement by delinquent youth encouraged by the cultural conflicts with law agencies by the community. This report emphasized that the family, the school, and the law must be improved and strengthened, as well as, cultural development theories, if juvenile delinquency is to be prevented. The authors concluded that without the cooperation

of all three agencies the emphasis would continue to be on treatment and punishment of juvenile delinquents rather than prevention.

George Dietz (1972) was anxious to find out if there were different value systems among the socioeconomic classes between juvenile delinquents and nonjuvenile delinquents. He conducted a study of 83 males and 125 females from a primarily white middle class school and a group of sixty-seven males and eighty-two females from a racially segregated upper/lower class school. His purpose was to survey the two groups on personal characteristics and assess if there were any similarities or differences between delinquent and non-delinquent social classes in value orientations. Surprisingly, there were very few characteristics not common to all groups but it was the degree of values that he found to be varied between the classes.

Dietz's data supported the conclusion that although there is a common nucleus of values in society, i.e., ambition, intelligence, trustworthiness, and honesty, the values vary in preference by minority and lower social class groups when compared to other groups. For example, the trait of honesty was the unanimous first choice of the nondelinquent group, but it was the sixth choice of the delinquent males and the third choice of the delinquent females. The delinquent male and females preferred attractiveness and good personality, respectively, as their first choices.

Proceeding to the familial related causes of juvenile delinquency, this researcher found a number of studies to investigate. The topic of the family's influence on the formation of juvenile delinquent youth had been researched by many with few finding any definitive results. Some of the more significant studies conducted will be reviewed beginning with R.G. Andry's (1960) study of male delinquent and nondelinquent subjects.

Andry's study examined the youth's perceptions of his parents and their adequacy in that role. He found that delinquent boys received less parental affection and open love than did their nondelinquent peers and he found the father's role to be less satisfactory than the mother's when compared to the nonjuvenile delinquents' satisfaction with both parents. Andry also found that there was less adequate communication between the youth and his parents and a more tense home atmosphere in the delinquents' families. The delinquent boys reported their fathers as not effective family leaders and experienced less adequate training in the forms of reinforcement and consequences than the youth not involved with the law. In his final conclusions, Andry determined that, because of this atmosphere, the delinquents had a higher aggressive reaction to stress and therefore had a greater propensity for delinquent acts.

Mary Riege (1972), interested in Andry's findings but curious how they would apply to females, responded by



conducting a replication study on females in Albuquerque, New Mexico. She found some similarities in her investigation, including the lack of equal love by both parents and the experiencing of less than positive conditions in regards to punishment and parental guidance. Riege also found that delinquent girls reported no more differences in environmental communication than the nondelinquent girls. They reported having a similar home atmosphere, as well. Both groups of girls were similar in that they saw the father as the authority figure in the family. This strongly opposed what Andry found with the delinquent boys perceptions of their fathers.

Konopka (1966), in a similar study to Riege's and Andry's, found a combination of loneliness and despair to be characteristic of adolescent delinquent girls. Riege's study lent empirical support to Konopka's findings that loneliness, low self-esteem, estrangement from adults, particularly the father, and shallow friendships often led to female delinquency.

In his work with the Massachusetts Division of Youth Services and over ten thousand delinquent children, Francis Kelly (1961) concluded that delinquent youth never had the parental love and affection necessary for normal development. As a result, these youth remained self-centered, pleasure-seeking, and resistant to authority because of the infant needs that were never met. Kelly blamed neither the parent

nor the child but rather called upon the legal, educational, and social personnel to work together to cure the problems of delinquency with the parent and the youth. Kelly suggested that:

We will only cure [delinquency] when we reach and treat successfully the causes of the problem family pathology and community apathy. We must reach the family and community in addition to the child, for we have since learned that we cannot treat the child alone. He does not exist in a vacuum but is strongly influenced, first, by his family, and later, by the community in which he resides (Kelly, 1969:29).

In trying to find support for Kelly's theory, Gove and Crutchfield (1982) found evidence on the importance of family love and interactions in the development of delinquency. While their study was based on parental perceptions rather than the juvenile delinquent's, they found that the way the parent experienced the child was the greatest predictor of delinquency and that parents who did not interact positively with their children had an effect on how the children behaved and whether they became delinquent. They further concluded that the family was the most "dynamic entity" but was extremely influenced by outside factors.

With the studies previously mentioned and those yet to be discussed there has been some contradiction on the role that the family actually plays in delinquency. Heatherington and others (1971), Megaree and Golden (1973), Spencer (1980), and Weller and Luchterhand (1983) conducted studies involving delinquents of three different categories. These three categories have been described as being the

unsocialized psychopath, the neurotic disturbed, and the socialized, subcultural delinquent.

The unsocialized psychopath is defined as being impulsive, amoral, guilt free, and having a defective conscience; i.e., a hard core criminal. Much of the blame for this defective personality has been placed on a failure in the child's identification with his parents. The neurotic disturbed is associated with social withdrawal, guilt, anxiety, and depression with overcontrol by his parents being a contributing factor. And lastly, the socialized, subcultural delinquent does not either act out personal conflicts or fail to socialize but rather internalizes a set of social values in conflict with middle class mores enforced by police and school officials.

Generally, none of these studies found any significant differences in the type of family interactions and parental attitudes between delinquent parents and nondelinquent parents. Megaree and Golden (1973) further postulated that delinquents should be studied as a heterogeneous group of people needing different treatment programs for different types of delinquents. They advocated that the theory of a single cause for delinquency be abandoned since delinquents were as different from each other as nondelinquents were.

A study by Gutierrez and Reich (1981) also found conflicting results on the influence of a family's behavior

and delinquency. They found that contrary to what might be expected, children who were abused were less likely to engage in aggressive crimes than their siblings or the control group. Rather, their delinquency consisted more of the "escape crimes", such as truancy and runaways. They concluded that this escape behavior was their way of coping rather than aggression.

Well-noted studies such as those by Glueck and Glueck (1950), Nye (1958), and McCord and McCord (1959) concluded that deviant children generally have deviant parents but the more recent studies have continued to contradict this theory. The idea that half the children, who came from homes with poor parental control and deviance, turned out to be delinquents leaves this researcher with the question, "Why did the other half turn out okay?"

A rather novel approach to this problem was conducted by Robins and Lewis (1966). They asked the question of how patterns in relatives outside the immediate family were predictive of delinquent behavior in youth. Robins and Lewis' study had quite interesting results. This study found that it was the existence of adult antisocial behavior in the child's constellation of relatives that showed a relationship to delinquency rather than the existence of such problems in the immediate parent. This study presented a new approach not looked at previously; that of the importance of the extended family in creating deviant patterns.

## School Related Factors

Truancy is the most common first involvement with delinquency according to Balow (1961). He attributed this delinquency to frustration in the schools because of middle class reading values and abstract concepts. Balow recommended performance training rather than verbal training, as well as a strong vocational program, in helping to deter juvenile delinquency. Balow found that:

Delinquency and schools come together in two opposing relationships. On the one hand, schools can contribute to delinquency as no other institution outside of the family. On the other hand, schools can be effective in the prevention and correction of delinquency (Balow, 1961:15).

While Balow was one of the first to blame the schools for causing delinquency, his was only one of the many theories relating school failure to delinquency. Other researchers who arrived at the same conclusions were Bell (1975), Ducey (1980), Feldhusen (1978), Lunden (1964), Robinson (1960), and Wertlieb (1982). Raymond Bell (1975) insisted that new teachers had to be trained in the areas of diagnostic and remedial teaching, crisis intervention skills and a knowledge of community and support agencies while Feldhusen (1978) advocated creating a positive school atmosphere that allowed all youth to succeed. Daniel Duke (1980) suggested that until schools were reorganized with revisions in the procedures by which teachers were recruited and rewarded and until class size in urban schools was reduced, we

would be dealing with illusions at best about educational programs and continued delinquency problems in the halls of our schools.

Robert Rubel (1977) presented the idea that the public had received a distorted picture of crime and delinquency related to schools because of poor record keeping before the 1960's. He further asserted that unless school officials involved students in the decision-making policies, solutions to the problem of delinquency in schools would not be found. Mayer and Butterworth (1981) found that positive reinforcement, appropriate reading materials, reduction of punishment training and behavior management procedures reduced delinquent acts within the Los Angeles Public Schools.

But not all research attributed the cause of delinquency to the school itself. Others have developed theories of the student's deficiencies and his inabilities to function in a school setting not necessarily casting the blame on the school (Bender, 1968; Berman and Siegal, 1976; Caplan and Powell, 1964; Geiger, 1961; Travis and Hindelang, 1977; Lefkowitz, 1968; Pontius, 1972; and Raygor, 1970).

Berman and Siegal (1976) conducted a study of forty-five adjudicated delinquent boys and an equal number of control subjects, both of whom were administered an IQ test and a neuropsychological battery. They found the delinquent group impoverished in adaptive abilities when compared to normal peers and concluded that delinquents needed to be

assessed for sensory motor and perceptual skills as well as verbal and performance concept formations if an understanding of delinquency and the neurological causes for such behavior was to be understood.

Bender (1968), Geiger (1961), and McKenzie (1979) found that children raised without love, nourishment, and/or affection and children who were abused or neglected developed deviations in personality development. These deprived children experienced frustration in school, school failure, and low self-esteem eventually turning to delinquency.

Additionally, Gerald Pine (1964), who had done a number of studies dealing with the causes of juvenile delinquency, found in a study on occupational and educational aspirations, that delinquent behavior was significantly related to educational aspirations but not to occupational aspirations. Adolescents that planned to enter college were the least involved in delinquent offenses while the most heavily involved were those without plans for further schooling. Pine concluded that the lack of agreement between educational aspirations and occupational aspirations might have been the tendency for youth to be more realistic about their educational plans than their future careers. He summarized his findings by indicating a link between educational aspirations and delinquency.

The relationship between intelligence and delinquency has been well documented in the literature for years.

In one of the earliest studies in this area, Glueck and Glueck (1940) found in a study of one thousand delinquent boys in Boston that 85 percent displayed some degree of retardation while 62 percent were two or more years behind expected grade placement. In a later study by the Gluecks (1950) of five hundred delinquent boys and five hundred non-delinquent boys matched on IQ, age, ethnic derivation and area of residence, they found that the delinquent boys had considerably lower school achievement, a higher antipathy for school, and a greater incidence of truancy than the nondelinquent boys.

Hirschi and Hildelang (1977) found that IQ was as much a correlate of delinquency as was social class or race. Yet studies done by Prentice and Kelly (1963), Lefkowitz (1968), and Blank (1958) found no relationship between IQ and delinquency though, quite often, the performance scores of delinquents were higher than their verbal scores.

Caplan and Powell's (1964) study of average and superior intelligence among delinquents found more important differences than IQ such as parent-child conflicts, school-related items, and family backgrounds. Edward Blackhurst (1968) concluded from his study of mentally retarded delinquents that they were no more of a threat to society than anyone else although their acts tended to be more impulsive and illogical. Further studies by Gath and Pidduck (1970) and Brooks (1967) did not find any connection between the



acts of delinquency and the gifted in their investigations either.

More recently, a study by Jerse and Fakoari (1978) compared the scores of matched groups of delinquent and non-delinquent children on the Iowa Test of Basic Skills. The delinquent group scored at an academically deficient level on this instrument while the nondelinquent group scored at grade level or better.

Other studies supported the idea that delinquency is somehow related to intellectual ability and achievement. Mauser (1974) found that a typical delinquent had average intelligence but displayed an academic discrepancy of two to five years below academic potential. This study lent credibility to a national survey conducted in juvenile correctional institutes by Morgan (1979) which found learning disabilities to be the third largest handicapping condition of juveniles that were incarcerated in correctional institutes.

It has been well established that there is a high correlation between learning disabilities and school failure and a high correlation between school failure and delinquency (Morgan, 1979; Podby and Mallory, 1978; and Swanstrom, 1981). What all these studies led to in the theory of juvenile delinquency is probably the most written, discussed and debated theory in the current field of juvenile delinquency; that being, the link between delinquency and the incidences of reading failure and learning disabilities.

Margolin and others (1955:34) found that:

Since we have pointed to the significance of the relationship between learning difficulties and delinquents, two aspects of the problem seem to require immediate attention. First, children with learning difficulties must be identified and aided long before their maladjustment in school results in a well established pattern of truancy and subsequent delinquency. Second, the schools must recognize that children from low socioeconomic environments are basically different from middle class children. This means that we cannot expect them to learn in the same manner as the middle class child nor with the same curriculum.

In a study conducted by Dorney in 1967 with adolescent delinquent boys, he evaluated the change of behavior and the boys' attitudes towards authority after receiving reading instruction for remediation. Dorney found the greatest amount of improvement in the group that received reading instruction when compared to groups that received either swimming instruction or received no instruction.

Ball, Parker, and Saunders (1983) found that special education interventions with incarcerated juveniles significantly increased the academic achievement rate of the youths. While the effects of treatment declined as tenure in the institution increased, it provided data to show that over a short period of time juvenile delinquents could be helped to achieve closer to their academic potential.

In a study by Miller and Windhauser (1971) common personality characteristics were investigated in disabled readers and delinquents. Their findings proved that disabled readers and delinquent youth "possessed many similar personality characteristics such as emotional maladjustment,

hostility, and suspicion. Also, both usually had a negative self-concept and a low tolerance to frustration" (Miller and Windhauser, 1971:186). The investigators stressed the point that the schools had the responsibility for preventing delinquent behavior by preventing reading failure in delinquent-prone students in the elementary schools. A good solid reading program in the elementary schools would be one means of helping students meet success in the elementary schools and reduce delinquency in the secondary schools.

Other researchers such as Epstein and Maragos (1983), Goltz (1966), Graham and Kamano (1958), Margolin and others (1955), Rice (1970), and Yule and Rutter (1968) found similar results as Dorney, Miller and Windhauser. Those results indicated that psychopathological and juvenile delinquent youth had severe reading problems associated with their deviance and sometimes their behavior improved if their reading improved.

In 1976, the American Institute of Research, for the Office of Juvenile Justice and Delinquency Prevention (Post, 1981), reported that there were two models most frequently cited for the support of the learning disability/juvenile delinquency relationship. The two models are known as the School-Failure Rationale and the Susceptibility Rationale. The former model focuses on a child who was learning disabled and continually failing in school. The failures were seen as prompting a labelling process by parents, teachers,

and peers which led to a negative self-image. The youth then dropped out of school and associated with delinquent-prone people which led him into delinquent acts.

The Susceptibility Rationale is based upon identified personality characteristics often associated with learning disabilities. These traits acted as liabilities in social situations and led to an increased probability of delinquent behavior (Cellini and Snowman, 1982).

The critical point is, that with all the studies done on juvenile delinquency and learning disabilities, no one has been able to prove a causal relationship. As reported by the American Institute of Research (Podby and Mallory, 1978b): "The existence of a causal relationship between learning disabilities and delinquency has not been established; the evidence for a causal link is feeble". The researchers agree that if there is not a causal link there is, at the least, some type of relationship between the two that justifies further investigation.

Some of the most current research has shown that there is definitely some type of connection between juvenile delinquency and learning disabilities as seen in the following examples. In a study by Podby and Mallory (1978b) 233 youths detained at a juvenile facility were tested. They found that 48.9 percent of the sample tested were learning disabled as defined by federal law. In another study the same investigators (Podby and Mallory, 1978) found

49 percent were learning disabled in a population of two hundred fifty. William Swanstrom and others (1981) found a juvenile delinquent population to have three and one-half times more learning disabled students than a peer group of regular seventh graders. Critchley (1968) found a higher level of dyslexia and reading retardation in a group of juvenile delinquents than in the control group while Cellini (1982), Post (1981), Wolff and Rowbotham (1972), and Zimmerman and others (1981), also, found higher incidences of learning disabled among the juvenile delinquents.

Keldgord ( 1969 ), Mulligan (1969), and Zoet (1978) expressed concerns over schools diagnosing learning disabilities early in order to develop preventative programs to keep youth from committing delinquent acts. Cellini and Snowman (1982), Clarke and Olson (1965), Glueck and Glueck (1950), Kelly (1971), Kvaraceus (1944), Pontius (1972), Raygor (1970), and Silberberg (1971) all found relationships between school failure and juvenile delinquency.

#### Labelling Theory and Self-Esteem

Wells and Rankin (1983) stated that sociologists and psychologists see the "self" as a key characteristic which conditions events that may lead the individual to some type of deviant action. Internalization of this self is a process the individual uses in which he internalizes his social controls which are then manifested in self-control.

It is this model of self-concept or self-esteem which has been researched by many investigators looking for a causal link with delinquency. Wells and Rankin further stated that it was a well known assumption that people needed to think positively of themselves and be motivated to act in ways that promote positive self-evaluation. In a study they conducted, though, they found that self-esteem as a cause of delinquency was at best tenuous. They indicated a major concern for the use of self-esteem enhancement programs, utilized as strategies for delinquency control and prevention, pointing out that while the argument of poor self-esteem causing delinquency was intuitively persuasive, empirical studies deny such a relationship. According to Wells and Rankin, programs in recreation, vocational training, and educational reform for juvenile delinquents that focused on improving self-esteem to reduce delinquent acts should be reconsidered.

In an earlier study by Scarpitti and others (1960), a follow-up investigation of white boys in a highly delinquent area was conducted. Their findings indicated that predictions of "good" boys by teachers, mothers, and the youths themselves were accurate. Only four boys of the original 103 respondents that had been labelled "good" had incurred any police contact in the four years following the initial survey. The authors concluded that once a youth was able to incorporate a positive self-image of himself as a

"good" boy he was able to remain free of contacts with police for delinquent acts regardless of his socioeconomic status or residence in a highly delinquent area. The authors attributed the success of the boys solely to the development and internalization of a positive self-concept. This study is in opposition to Wells and Rankin's findings but because it is more than twenty years old its, plausibility is questionable today.

Alienation and loneliness are often used synonymously with low self-esteem in the study of juvenile delinquency. While Martin Gold (1969) presented a strong argument that delinquent youth were not alienated but rather quite dependent on their peers' influence and support in their acts of delinquency, Bernstein (1969), Williams (1983), and Nigem and others (1981) found that alienation led to delinquency and that delinquents with high needs for control expressed higher levels of loneliness. Low self-esteem, loneliness, and alienation are all part of the process that leads to a youth's visualization of himself (as well as his peer's, parent's, and teacher's perception of him).

In the labelling hypothesis it is assumed that being publicly identified as deviant or "bad" produces a spoiled identity that would not have existed if not made public. The labelling theory further suggests that the label has the effect of reinforcing the deviance thus

entrenching the juvenile still deeper into deviant actions. While at first examination this theory would appear to be logical and have universal concurrence, there have been few studies to prove the theory reliable and many to show the shortcomings. In fact, a study conducted by Foster, Dinitz, and Reckless (1972) found that only a relatively small proportion of labelled youths perceived any significant change in interpersonal relationships with friends or family and only a relatively small proportion anticipated any difficulties in completing school and less than one-half saw the label as hampering their future efforts to gain employment.

Foster, Dinitz, and Reckless (1972) were further supported by Fisher (1972), Kelly (1977), Hepburn (1977), and Ball (1983). Each of these researchers found that the juvenile had already identified himself as a delinquent/deviant before the official arrest or label had taken place thereby showing that the label did not produce the deviant self-identity. The label exacerbated activities that were already taking place before the label was publicized and the label did not reinforce deviant behavior and differential treatment. Fisher (1972:83) emphasized the point by stating that:

current treatments of labelling theory are stimulating but unrefined; suggestive but imprecise; an overstatement of certain traditional insights on the deviant process, but hardly a significant theoretical advance.



### Causation and Predictive Models

Duke and Duke (1978) deliberated about the interest shown by educators in identifying youth in need of specialized, professional attention and traced the interest to the development of Alfred Binet's intelligence test. Aside from the interest in low intelligence youth, the Dukes alleged that another group which had received much attention was the juvenile delinquent. They proposed that social scientists had:

tried to isolate factors in the background of acknowledged delinquents that might provide clues concerning which children were more likely to encounter problems with legal authorities. Research had generally been of two kinds: 1.) studies in which the background characteristics were acknowledged to determine common elements and; 2.) studies in which randomly selected children were followed on a longitudinal basis through adolescence in order to see whether those who eventually got into trouble could be distinguished at an early age from those who did not (Duke and Duke, 1978:18).

Prediction models are not new and have been attributing factors such as socioeconomic status, race, school related factors, families, and many more to the cause of delinquency for years. Hirschi and Selvin (1966) suggested that the theory of causation to juvenile delinquency was ludicrous since nothing causes anything. These authors argued that most of the theories work because of other variables and because they ignored the other percentage of the population with the same factors that do not become juvenile delinquents. Miller (1976) proposed a theory of

theories to study delinquency. He said that no one theory is broad enough to cover all of the relevant variables (biological, social, and psychological) in the prediction of delinquency. Megaree and Golden (1973) proposed abandoning a single cause theory of delinquency, also.

In reviewing and attempting to replicate prediction studies, Schlesinger (1978), found that none of the predictor variables were substantiated. Conversely the self-report method, in which juvenile delinquent responses of their involvement in crime and delinquent behavior were relied on, was found to have a high degree of validity in the prediction of delinquency by Clark and Weninger (1962), Dentler and Monroe (1961), and Hardt and Hardt-Peterson (1977).

In conjunction with the self-report method, one of the most reliable predictors of juvenile delinquency has been teacher perceptions of students believed most likely to get involved with the law. Sabatino (1973) said that student misbehavior in schools was one of the most widely cited signs of delinquency. He claimed that teachers' ratings of student behavior in conjunction with their reading levels were the two best predictors of juvenile delinquency.

Conger (1973) provided support for this claim with data from a study he did in Colorado. Conger found that future delinquents were distinguishable from nondelinquents by the end of their third grade. The predicted delinquents were said to be easily distracted, frequently off-task and

susceptible to daydreaming. The girls, particularly, were less poised, less cheerful, and inclined to have problems relating to their peers and teachers.

Scarpitti and others (1969) conducted a follow-up study of white boys in a highly delinquent area and their findings indicated that predictions of what youth were good boys and would not be involved with the law by teachers were highly accurate. Gibson (1969) found in a study of 411 boys at primary schools that teachers' ratings of later convictions were highly predictive of delinquent behavior even more than the formalized predictive scales he had been using.

William Kvaraceus (1961), the developer of the Kvaraceus Delinquency-Prone Scale, even had to admit the behavior ratings of teachers showed more promise as a method for identifying future norm violators than any standardized predictor scale developed. There has been no predictor scale developed to this date that contradicts Kvaraceus' point (Cross and Kohl, 1978; Duke and Duke, 1978; Dunn, 1981; Loeber and Dishion, 1983; Sabatino, 1973; and Schlesinger, 1978).

A variety of other types of prediction studies have been conducted in the field of juvenile delinquency; for example, Figuiera-McDonough and Selo (1980) proposed a theory of prediction among females. The investigators declared that prediction of female delinquents would become

much easier now and more similar to male delinquency because of the equalization and liberation of women. They concluded that as females were given similar opportunities as men they would in turn have similar opportunities to behave both legally and illegally.

But Duke and Duke (1978) found in trying to predict delinquency in girls that no single instrument or source of predictive data was accurate in identifying all kinds of delinquents. They cautioned the researcher in using these prediction scales, especially those of teachers, because of the self-fulfilling prophecy.

Cross and Kohl (1978), Elliot (1967), and Reckless (1961) traced much of the history of predictive models including biological, sociological and psychogenic and found no model that accurately predicted delinquency. Brown (1981), Gable and Brown (1978), and Knight and West (1975) offered rationales for the juvenile that went right despite the predictor variables. Their theories involving the degeneracy of a delinquent tried to resolve why one segment of the population similar to those predicted to become delinquent could be deterred from the criminal paths. Their preference was to look at the positive characteristics rather than the negative predictor variables of the delinquents.

## Summary

The review of the literature on juvenile delinquency has found no evidence that there is any one variable or set of variables that can accurately predict juvenile delinquency. While there has been some research to suggest that there are strong relationships among juvenile delinquency and low income, learning disabilities, and poor self-esteem, the field is relatively wide open to advancements in the theory (Ball, 1983; Berman and Siegal, 1976; Brown, 1981; Hirschi and Hildegang, 1977; and Sherer, 1983).

The review of sociological and familial related causes to juvenile delinquency did not consistently support the idea that low socioeconomic status or parental attitudes and interactions had the capacity to predict delinquent behavior. The literature supported the idea that socioeconomic status may play a part in juvenile delinquency but certainly could not be singled out as the single causal factor of juvenile delinquency.

The American Institute of Research (Podby and Mallory, 1976) was not able to find a causal link between juvenile delinquency and learning disabilities but suggested a solid relationship between the two justifying further investigation. Other investigators (Bender, 1968; Epstein and Maragos, 1983; Hirschi and Hildegang, 1977; and Mayer and Butterworth, 1981) found contradictory results concerning

school achievement and intelligence and their effect on juvenile delinquency.

The labelling theory and self-esteem of juvenile delinquents appeared on the surface to be logical and have universal concurrence but as Fisher (1972:83) pointed out:

current treatments of labelling theory are stimulating but unrefined; suggestive but imprecise; an overstatement of certain traditional insights on the deviant process, but hardly a significant theoretical advance.

Of the predictive models reviewed none were found to be error-free nor valid enough to be used for assessing the futures of juveniles. Neither biological, psychological, or psychogenic predictive models provided support for the argument that juvenile delinquency could be accurately predicted.

In summary, the field of juvenile delinquency has been researched by scores of distinguished authorities. The theories advanced to this date have assisted in understanding the problem significantly better but the apparent factors for the juvenile delinquency of certain youth has not yet been discriminated from the law abiding existence of nonjuvenile delinquents.

## CHAPTER THREE

## PROCEDURES

This study investigated a group of juvenile delinquent youth and a group of nonjuvenile delinquent youth to determine the relationship among selected characteristics and the differences that existed on those characteristics. The investigation also determined if selected characteristics occurring during the early school years of kindergarten through grade four could predict potential juvenile delinquents in the early adolescent years.

The study was conducted in Cascade County, Montana with the cooperation of the Cascade County Court System and the Great Falls Public Schools System. Great Falls, located in Cascade County in northcentral Montana, and the state's second largest city, has a Standard Metropolitan Statistical Area population of 80,696 (Great Falls Area Chamber of Commerce, 1984). In the Inter-City Cost of Living Index compiled by the American Chamber of Commerce Association, Great Falls received indexes below the national average of one hundred in 1982 and 1983 (Great Falls Area Chamber of Commerce, 1984). The Great Falls Chamber of Commerce (1984) lists agriculture and livestock as the backbone of the economy in Great Falls and classifies the city as a regional

trade center supporting numerous retail and wholesale establishments. Malmstrom Air Force Base, located at the eastern edge of town, employs 4,750 people and significantly adds to the Great Falls economy. The Air Force Base provides a variety of cultures and talents to Great Falls which are not found in most Montana cities. Great Falls is known for its high educational standards and quality schools and has one of the highly recognized educational systems in the state (Great Falls Area Chamber of Commerce, 1984). In addition to the public and private schools, Great Falls also has a Vocational Technical School and a private four year college.

Permission was granted by the Youth Court Judge of Cascade County to study records of adjudicated juveniles committing delinquent acts during the period of June, 1982 to December, 1983 in Cascade County. The Assistant Superintendent for Secondary Education for the Great Falls Public Schools granted permission to study the school records of these youth and youth having no involvement with the law.

#### Population Description

Two groups were used in this study to investigate the characteristics of juvenile delinquents and the characteristics of nonjuvenile delinquents. All of the juvenile delinquents resided in Great Falls and therefore it was necessary to utilize only the Great Falls Public School System.



The nonjuvenile delinquent group was selected from the population of the Great Falls Public School students that were thirteen to eighteen years old and achieved similar achievement to the juvenile delinquent sample on the Cognitive Abilities Test (Thorndike and others, 1968) and the Iowa Test of Basic Skills (Hieronymus and others, 1979) in grades two and four and had no involvement with the law. They were matched, also, on their attendance in Great Falls Public Schools in grades kindergarten through grade four. In the juvenile delinquent group fifty-seven students were investigated and in the nonjuvenile delinquent group fifty-five students for a total of one hundred twelve subjects. This investigator was unable to find two additional subjects that could be matched on age, intelligence, and achievement scores and therefore had only fifty-five students for the one group.

Court records consisting of psychological reports and social histories were used to obtain pertinent information on the seven characteristics. Those characteristics were sex, race, socioeconomic status, history of family crime, marital status of parents, academic achievement in grades one through four, and special services provided in the primary grades. Permanent school records were utilized to obtain the remaining information. Information on the characteristics of the nonjuvenile delinquent population were obtained from school records.

The population of this study consisted of:

1.) a group of youth thirteen to eighteen years old who attended kindergarten through grade four in the Great Falls Public School System and committed juvenile delinquent acts during the period of June, 1982 to December, 1983 and were arraigned before the Cascade County Youth Court System and

2.) a group of youth thirteen to eighteen years old that attended kindergarten through grade four in the Great Falls Public School System that were currently enrolled in school and had no previous involvement with the Cascade County Youth Court System.

The first group of youth was matched to the second group on the basis of their age, intelligence, and achievement scores. The scores on the Cognitive Abilities Test (CAT) and the Iowa Test of Basic Skills (ITBS) in grades two and four respectively were utilized to match the juvenile delinquents to the nonjuvenile delinquent students according to the IQ ranges on the Cognitive Abilities Test and the achievement score grade equivalents on the Iowa Test of Basic Skills.

The groupings for intelligence were divided as follows: below average (79 and lower), low average (80-89), average (90-100), high average (101-110) and superior (111 and higher). The achievement scores on the ITBS were used to match the juvenile delinquent group to the nonjuvenile

delinquent group in the following manner: 4.0 - 4.10 was considered average; more than one year below grade level (3.9 and lower) was considered below average; and one or more years above grade level (5.0 and higher) was considered above average.

#### Description of Investigative Categories

The characteristics to be investigated for each group were:

1. sex (male, female)
2. race (Caucasian, Indian, Black, Other)
3. socioeconomic status (occupational prestige of parents' occupation as determined by the National Data Program for the Social Sciences: Code Book (Davis, 1975))
4. history of family crime (any criminal case coming before the Cascade County Court for a judicial decision for any immediate family member; mother, father, brother, sister)
5. marital status of parents (intact family with natural mother and father) during primary school years
6. academic achievement in kindergarten through grade four (average of grades in reading, writing, and math in grades one, two, three, and four)
7. special services provided by the school district in kindergarten through grade four including but not limited to Special Education, Title I, Reading Lab, Counseling, Speech Therapy, Follow-Through and Mental

Health (a minimum of one year service in any area to qualify as having services)

#### Method of Collecting Data

The two groups of youth used in this study were matched on intelligence and achievement scores on the Cognitive Abilities Test in Grade two and the Iowa Test of Basic Skills (ITBS) in Grade four. Buros' The Eighth Mental Measurements Yearbook (1978) has reviewed both of these test instruments for validity and reliability. He states that the Cognitive Abilities Test, while a revision and extension of the Lorge-Thorndike Test, has been concurrently normed with the Iowa Test of Basic Skills to obtain a common normed population. The reliability on the Cognitive Abilities Test for the verbal, quantitative and nonverbal raw scores are consistently high ranging from .91 to .96. The reliability of the IQ scores is high but not as high as the raw scores. The predictive validity coefficients range from .50 to .65. while the construct validity for the verbal subsection ranges from .70 to .80 and .80 to .85 for the nonverbal section. The quantitative section is not given at this grade level. Overall the reliability and the criterion related validity are very high for this instrument and quite acceptable as a means of measuring early intellectual potential (Buros, 1978).

Buros (1978), in the review of the ITBS, indicates that this testing instrument is used to provide information on the pupil's development in the basic skill areas. The split-half reliability coefficient is .97 to .98 and the predictive validity coefficient is rated as being moderately predictive. Overall, it is assessed as an "excellent measure of basic skills and one of the most carefully constructed achievement tests available" (Buros, 1978:58).

The data collected consisted of seven independent variables defined as follows. The first variable of sex was divided into male and female while the variable of race was divided into groups of Caucasian, Black, Indian, and other.

Most authors agree that the parents' occupation is a reliable indicator of socioeconomic status when used with other variables (Edwards, 1943; Kriesberg, 1979; Reiss and others, 1961; and Sewell and Hauser, 1975). Reiss and others (1961:115) argued that "the use of education and income to measure the 'socioeconomic' status of an occupation has both precedent and theoretical justification." Edwards (1943:80), one of the first to develop a system that classified occupations into socioeconomic categories, stated that: "Education is a very large factor in the social status of workers, and wage or salary income is a very large factor in their economic status". Reiss and others (1961) further supported Edwards by saying that income and occupation are functionally related:

a man qualifies himself for occupational life by obtaining an education; as a consequence of pursuing his occupation, he obtains income. Occupation, therefore, is the intervening activity linking income to education. If we characterize an occupation according to the prevailing levels of education and income of its incumbents, we are not only estimating its 'social status' and its 'economic status' we are also describing one of its major 'causes' and one of its major 'effects' (Reiss and others, 1961:116-117).

Therefore socioeconomic status in this study was determined by the educational and income levels of parents reflected in their engaged occupations outlined in the National Data Program for the Social Sciences: Code Book (Davis, 1975).

Parents with occupations that had a prestige score of twenty or lower were considered low socioeconomic families while parents with occupations that had a prestige score of 21-73 and 74-100 were considered middle and upper socioeconomic status respectively. These distributions were assigned on the basis of "excellent", "good", and "poor" ratings of occupations by the respondents and the corresponding number associated with the rating (Davis, 1975).

The history of family crime was determined by researching records of brothers, sisters, and parents for adjudicated court appearances for a punishable offense. This was limited to offenses in Cascade County only. A family was considered intact if the natural mother and father were in the home during the early school years of kindergarten through grade four.

The last two categories involving school situations looked at academic achievement and special services provided

in grades kindergarten through grade four. An average of grades in reading, writing, and math were computed for each student to determine achievement. Special services were considered provided if the student was enrolled in any of the districts special programs for at least one academic year in kindergarten through grades four.

#### Method of Organizing Data

A program was designed for use with the Statistical Package for the Social Sciences (1975). The subjects were assigned a number 001 through 112 for identification on the computer printout. The seven independent variables of sex, race, socioeconomic status, history of family crime, marital status of parents, academic achievement, and special services were entered into the computer for statistical analysis. The data collected are presented in the form of tables for the seven characteristics investigated. The tables are set up as follows:

1. two-way analysis of variance
2. chi-square test of independence
3. multiple regression analysis

#### Statistical Hypotheses

The null hypotheses were tested against nondirectional alternative hypotheses. All hypotheses were tested at the .10 level of significance (Ferguson, 1979 and Minium,

1970) to reduce the risk of retaining the null hypothesis when it was false (Type II error). This appeared reasonable since less harm would be done if a student who was predicted to be a potential juvenile delinquent was interceded upon and in fact was not (Type I error). In accepting a Type II error a student who was in fact a potential juvenile delinquent would not receive assistance in trying to avert his delinquent behavior which might prove more harmful.

Hypotheses one through fourteen were analyzed with a two-way analysis of variance. The dependent variable of intelligence was analyzed for interaction on each of the seven independent variables and delinquency status. The first null hypothesis is related to the significance of interaction between intelligence and the independent variable under consideration. The null hypothesis that follows is related to significant differences between the groups when separated by main effects. If no interaction was found the main effects were tested.

Hypotheses fifteen through twenty-one were analyzed with a Chi-Square Test of Independence and Hypothesis twenty-two was analyzed with a Multiple Regression Analysis. All hypotheses were tested at the .10 level of significance.

Hypothesis 1.  $H_0$ : The independent variables of sex and delinquency status do not interact on the dependent variable of intelligence.



Hypothesis 2. Ho: The mean IQ of males is equal to the mean IQ of females.

Hypothesis 3. Ho: The independent variables of race and delinquency status do not interact on the dependent variable of intelligence.

Hypothesis 4. Ho: There is no significant difference among the mean IQ of Caucasians, Indians, Blacks, and Others with regards to the dependent variable of intelligence.

Hypothesis 5. Ho: The independent variables of socioeconomic status and delinquency status do not interact on the dependent variable of intelligence.

Hypothesis 6. Ho: There is no significant difference among the mean IQ of youth from lower, middle, and upper classes with regards to the dependent variable of intelligence.

Hypothesis 7. Ho: The independent variables of history of family crime and delinquency status do not interact on the dependent variable of intelligence.

Hypothesis 8. Ho: There is no significant difference between the mean IQ of youth for history of family crime with regards to the dependent variable of intelligence.

Hypothesis 9. Ho: The independent variables of marital status and delinquency status do not interact on the dependent variable of intelligence.

Hypothesis 10. Ho: There is no significant difference between the mean IQ of youth for the marital status of parents with regards to the dependent variable of intelligence.

Hypothesis 11. Ho: The independent variables of academic achievement and delinquency status do not interact on the dependent variable of intelligence.

Hypothesis 12. Ho: There is no significant difference among the mean IQ of youth in academic achievement with regards to the dependent variable of intelligence.

Hypothesis 13. Ho: The independent variables of special services and delinquency status do not interact on the dependent variable of intelligence.

Hypothesis 14. Ho: There is no significant difference between the mean IQ of youth for special services with regards to the dependent variable of intelligence.

Hypothesis 15. Ho: Delinquency status is independent of the variable of sex.

Hypothesis 16. Ho: Delinquency status is independent of the variable of race.

Hypothesis 17. Ho: Delinquency status is independent of the variable of socioeconomic status.

Hypothesis 18. Ho: Delinquency status is independent of the variable of history of family crime.

Hypothesis 19. Ho: Delinquency status is independent of the variable of parent's marital status.

Hypothesis 20. Ho: Delinquency status is independent of the variable of academic achievement in grades K-4.

Hypothesis 21. Ho: Delinquency status is independent of the variable of special services provided by the school district.

Hypothesis 22. Ho: There is no significant relationship between the characteristics of sex, race, socioeconomic status, history of family crime, marital status of parents, academic achievement in kindergarten through grade four, and special services provided by the school district and the dependent variable of delinquency status.

#### Method of Analyzing the Data

The characteristics of sex, race, socioeconomic status, history of family crime, marital status of parents, academic achievement in kindergarten through grade four, and special services provided by the school district were treated with a two-way analysis of Variance (Glass and Stanley, 1970) to look for variance among the means and determine if there was any interaction between the variables. The dependent variable in this analysis was intelligence. Where significance was found on the two-way analysis of variance, a one-way analysis of variance was computed to find where the significance was actually occurring in the analysis. In these instances, the delinquency status was analyzed with the significant characteristic and the Sheffe'

Method applied to find where the significance was occurring. A chi-square statistic (Best, 1977) estimated if some factor other than sampling error could account for an apparent relationship between the two groups when such a relationship existed.

According to Ferguson (1976), regression predictions for individuals can be made based upon data revealed in previous studies of samples of similar individuals and that the "multiple correlation coefficient is a measure of the efficacy of prediction for a particular sample" (Ferguson, 1976: 465). He further stated that "a multiple regression analysis is a method of analyzing the contributions of two or more independent variables to one dependent variable". Therefore, a Multiple Regression Analysis (Ferguson, 1976 and Kerlinger, 1973) was used to test Hypothesis twenty-two and the second part of the problem. This segment of the problem statement dealt with seven characteristics occurring during the early school years of kindergarten through grade four that could predict to school officials a potential juvenile delinquent in the early adolescent years. It was determined if a significant relationship existed among the seven characteristics that would discriminate juvenile delinquent youth from nonjuvenile delinquent youth before the adolescent years. Seven predictor variables related to juvenile delinquency were used to increase the accuracy of prediction.

In the analysis of this study the dependent variable was juvenile delinquency and was assigned values of 1 and 2. These values, called dummy variables, are "vectors in which members of a given category are assigned an arbitrary number and subjects not belonging to the category are assigned another arbitrary number" (Kerlinger, 1973:105). These are useful when independent variables are categorical and the subjects differ in type or kind only. Since the measures used, according to the literature, seem to be related to juvenile delinquency and knowledge of the actual delinquency of the youth was known, the procedure of multiple regression analysis was used to predict the probable delinquency of other individuals (Kerlinger, 1973).

In addition to the  $R^2$  generated from the multiple regression analysis, an additional procedure was employed to judge the predictive efficiency of the prediction model. Since in actual practice an individual with a predicted criterion ( $Y'$ ) less than 1.5 would be identified as a juvenile delinquent and one with a  $Y'$  greater than or equal to 1.5 would be identified as a nonjuvenile delinquent, the measures on each independent model were used to generate a  $Y'$  for each student. The ( $Y'$ )'s were then compared to the actual  $Y$  to determine the percentage of correct identifications. Specifically, if a juvenile delinquent coded as 1 had a  $Y'$  less than 1.5 or a nonjuvenile delinquent coded as 2 had a  $Y'$  greater than or equal to 1.5 they were considered

to be correct identifications. The calculation for the procedure of multiple regression analysis was:

$$Y' = a + b_1 X_1 + b_2 X_2 + b_3 X_3 \dots b_{10} X_{10}$$

Where

$Y'$  utilizes dummy coding and

1 = juvenile delinquents and

2 = nonjuvenile delinquents and.

$X_1$  = sex 1 - male

2 - female

$X_2$  = Caucasian 1 - yes

2 - no

$X_3$  = Indian 1 - yes

2 - no

$X_4$  = Black 1 - yes

2 - no

$X_5$  = other

$X_6$  = socioeconomic status- weighted number ascribed to occupation

$X_7$  = history of family crime 1 - yes

2 - no

$X_8$  = marital status of parents- intact family

1 - yes

2 - no

$X_9$  = academic achievement in kindergarten through grade four- average of grades in reading, writing, and arithmetic in grades one, two,

three, and four.

x = special services provided in Kindergarten - grade four

1 - yes

2 - no

a = mathematical constant

$R^2$  y. was computed to determine the proportion of variance in the dependent variable accounted for by the categorical independent variable. The F ratio was used to test the statistical significance of R. This analysis allowed the researcher to determine if a significant relationship existed between the adjudicated youth and the combination of seven predictor characteristics.

#### Precautions Taken for Accuracy

Precautions taken for accuracy included the following:

a.) the data was entered into the Montana State University Computer System through a terminal, under the direction of Dr. Donald Robson, Department Head of Educational Services.

b.) the SPSS package was employed for the two-way analysis of variance, the chi-square test of independence, and the multiple regression analysis by Dr. Donald Robson at the Montana State University Computer Center.

c.) accuracy of the information entered was verified by another party.

d.) legal, valid records of juveniles were utilized.

e.) all subjects not meeting the criteria stated were eliminated from the study.

#### Summary

This study was conducted in Great Falls, Montana with thirteen to eighteen year old youth. A group of juvenile delinquents were matched to a group of nonjuvenile delinquents and compared on seven characteristics. A prediction model was developed to determine if potential juvenile delinquents could be found and helped in the early grades of school. Data was collected with the assistance of the courts and the schools.

To answer the problem of this study, a population of adjudicated and nonadjudicated youth was selected on the basis of IQ and academic achievement in kindergarten through grade four. A set of characteristics was applied to each youth to determine if there were predictor characteristics in the early school years that could alert school officials to potential juvenile delinquents.

Statistical hypotheses stated in the null form were tested at the .10 level of significance against nondirectional alternative hypotheses. The statistical procedures of two-way analysis of variance, chi-square test of independence, and multiple regression analysis were used. All data



were calculated on a CP-6 at the computer center at Montana State University and verified for accuracy.

## Chapter IV

## ANALYSIS OF DATA

The analysis of the data is presented in three sections. First, results of the data treated with the two-way analysis of variance are presented with a discussion of their relationship to Hypotheses one through fourteen. Second, the data treated with a chi-square test of independence is shown and hypotheses fifteen through twenty-one examined. Finally, the multiple regression analysis is given and the results pertaining to hypothesis twenty-two.

## Analysis of Variance

Hypotheses one through fourteen were tested with a two-way analysis of variance using the .10 level of significance. The intelligence of the youth was analyzed with a two-way analysis of variance to test for interaction on each of the seven independent variables. These variables were sex, race, socioeconomic status, history of family crime, marital status of parents, academic achievement in kindergarten through grade four, and enrollment in special service programs. The dependent variable of this analysis was intelligence. Each of the analyses provided a test of two null hypotheses. The first null hypothesis is related to

the significance of interaction between intelligence and the variable under consideration. The following null hypothesis is related to significant differences between the groups when separated according to the main effects being studied. If no interaction was found, the main effects were tested. An a-posteriori test for significance between any two mean values was applied to the data whenever a significant F was found.

Table 1

Analysis of Variance on Intelligence by Delinquency Status and Sex

Source of Variation	Sum of Squares	Degrees of Freedom	Mean Square	F Value
Main Effects				
Delinquency Status	3.052	1	3.05	0.02
Sex	36.237	1	36.24	0.22
Delinquency by Sex	3.380	1	3.38	0.02
Within	17345.66	104	166.79	
Total	17392.92	107		

Inspection of the data in Table 1 reveals that there was no significant interaction for the independent variable of delinquency status and sex with regard to the dependent measure of intelligence. Therefore the Null

Hypothesis 1 was retained: The independent variables of sex and delinquency status do not interact on the dependent variable of intelligence.

Table 2

## Means for Intelligence by Sex and Delinquency Status

	Juvenile Delinquent		Nondelinquent	
	N	MEAN	N	MEAN
Male	44	96.55	38	97.08
Female	9	98.44	17	98.12
Total	53	96.87	55	97.40

Inspection of the means in Table 2 indicates that the IQ of juvenile delinquent males is less than the IQ of nonjuvenile delinquent males and that juvenile delinquent females have higher IQ's than nonjuvenile delinquent females. The difference in means was not statistically significant and leads to the acceptance of Null Hypothesis 2: The mean IQ of males is equal to the mean IQ of females.

Table 3 data reveals that there was no significant interaction obtained for the independent variables of delinquency status and race with regards to the dependent measure of intelligence. Therefore Null Hypothesis 3 was retained: The independent variables of race and delinquency status do not interact on the dependent variable of intelligence.

Further inspection of Table 3 reveals that the main effect of race was significant ( $F=2.37$ ) at the .10 level. While significance was found for the main effects of race on the two-way analysis of variance, a one-way analysis of variance did not detect a difference between any pair when the Sheffe' method was applied to the data. This is most likely accounted for in the low n's in two of the four cells causing a high error term. Since the main test, a two-way analysis of variance, found significance on this variable Null Hypothesis 4 was rejected: There is no significant difference among the mean IQ of Caucasians, Indians, Black, and Others with regards to the dependent variable of intelligence.

Table 3

Analysis of Variance on Intelligence by Delinquency Status and Race

Source of Variation	Sum of Squares	Degrees of Freedom	Mean Square	F Value
Main Effects				
Delinquency Status	16.69	1	16.69	.11
Race	1102.70	3	367.57	2.37*
Delinquency by Race	764.19	3	254.73	1.64
Within	15518.38	100	155.18	
Total	17392.92	107		

\* = significant at the .10 level

Table 4

Means for Intelligence by Race and Delinquency Status

	Juvenile Delinquent		Nondelinquent	
	N	MEAN	N	MEAN
Caucasian	36	98.78	47	98.91
Indian	12	91.50	6	93.50
Black	1	100.00	1	77.00
Other	4	95.00	1	70.00
Total	53	96.87	55	97.40

Inspection of the means in Table 4 indicates no difference in the means of Caucasian and Indian juvenile delinquents when compared to Caucasian and Indian nonjuvenile delinquents. The juvenile delinquent group of Black/Other have much higher IQ levels than those in the nonjuvenile delinquent group. The small sample in this category makes it difficult to draw any valid conclusions about these IQ's.

The class levels for socioeconomic status were synthesized into two class groups (lower and middle) because there were no youth that fell into the category of upper class. This data is revealed in Table 5 and indicates no significant interaction for the independent variables of delinquency status and socioeconomic status with regards to the dependent measure of intelligence. Therefore Hypothesis 5: The independent variables of socioeconomic status and

delinquency status do not interact on the dependent variable of intelligence was retained. The main effects of socioeconomic status was significant ( $F = 5.44$ ) at the .10 level and thus leads to the rejection of Null Hypothesis 6: There is no significant difference among the mean IQ of youth from lower, middle, and upper classes with regards to the dependent variable of intelligence.

Table 5

Analysis of Variance on Intelligence by Delinquency Status and Socioeconomic Status

Source of Variation	Sum of Squares	Degrees of Freedom	Mean Square	F Value
Main Effects				
Delinquency Status	23.27	1	23.27	.15
Socioeconomic Status	871.36	1	871.36	5.44*
Delinquency Status by Socioeconomic	160.34	1	160.34	1.00
Within	16342.91	102	160.23	
Total	17383.40	105		

\* = significant at .10 level

Table 6

Means for Intelligence by Socioeconomic Status and Delinquency Status

Juvenile Delinquents			Nondelinquents	
	N	Mean	N	Mean
Low	19	91.16	8	94.88
Middle	32	100.19	47	97.83
Total	51	96.82	55	97.40

Inspection of the means in Table 6 indicates that the IQ's of juvenile delinquents from lower class homes were less than the IQ's of nonjuvenile delinquent from lower class homes while the reverse is true for youth from middle class families. The total IQ levels of the juvenile delinquents are less than the total IQ levels of the nonjuvenile delinquent youth in this analysis, as well.

Table 7 reveals that no significant interaction was found for the variable of delinquency status and history of family crime with regards to the dependent measure of intelligence nor for the main effects of family crime. Therefore this leads to the acceptance of the two Null Hypotheses; Ho 7: The independent variables of history of family crime and delinquency status do not interact on the dependent variable of intelligence and Ho 8: There is no significant difference between the mean IQ of youth for history of



family crime with regards to the the dependent variable of intelligence.

Inspection of the means in Table 8 indicates that there was no significant difference in the mean IQ's of youth who had families involved in crime.

Table 7

Analysis of Variance on Intelligence by Delinquency Status  
and History of Family Crime

Source of Variation	Sum of Squares	Degrees of Freedom	Mean Square	F Value
Main Effects				
Delinquency Status	.14	1	.14	.00
Family Crime	283.00	1	283.00	1.73
Delinquency by Family Crime	36.49	1	36.49	.22
Within	17065.78	104	164.09	
Total	17392.91	107		

Table 8

Means for Intelligence by History of Family Crime and  
Delinquency Status

	Juvenile Delinquent		Nondelinquent	
	N	MEAN	N	MEAN
Yes	9	91.56	3	95.33
No	44	97.95	52	97.52
Total	53	96.87	55	97.40

Table 9

Analysis of Variance on Intelligence by Delinquency Status  
and Marital Status of Parents

Source of Variation	Sum of Squares	Degrees of Freedom	Mean Square	F Value
Main Effects				
Delinquency Status	3.01	1	3.01	.02
Marital Status	120.09	1	120.09	.73
Delinquency by Marital	183.02	1	183.02	1.11
Within	17082.17	104	164.25	
Total	17392.92	107		

Table 9 reveals that there was no significant interaction for the independent variables of delinquency status and marital status of parents with regards to the dependent measure of intelligence. This led to the acceptance of Null Hypothesis 9: The independent variables of marital status and delinquency status do not interact on the dependent variable of intelligence. There was also no significant difference found in the main effects for marital status of parents. This led to the acceptance of Null Hypothesis 10: There is no significant difference between the mean IQ of youth and the marital status of parents with regards to the dependent variable of intelligence.

Table 10 indicates higher IQ means for juvenile delinquents that came from intact families while the reverse is true for the nonjuvenile delinquent group.

Table 10

Means for Intelligence by Marital Status and Delinquency Status

	Juvenile Delinquent		Nondelinquent	
	N	MEAN	N	MEAN
Intact	20	99.90	42	97.19
Not	33	95.03	13	98.08
Total	53	96.87	55	97.40

Certain cell frequencies for academic achievement did not equal or exceed one and therefore the cells were collapsed into categories of 1 (D,D-,D+), 2 (C,C-,C+), 3 (B,B-,B+), and 4 (A,A-,A+). Inspection of the data in Table 11 reveals that there was no significant interaction for the independent variable of delinquency status and academic achievement with regards to the dependent measure of intelligence. Therefore Null Hypothesis 11 was retained: The independent variable of academic achievement and delinquency status do not interact on the dependent variable of intelligence. There was, however, a significant difference ( $F=14.37$ ) found in the main effects for academic achievement at the .10 level. An a-posteriori test of contrast was employed to examine specific mean differences for the independent variable of academic achievement. This test found higher IQ means for each level of achievement. In other words, students with the lowest IQ means (90.92) achieved at level 1 and students with the highest IQ means (126.67) achieved at level 4. This analysis leads to the rejection of Null Hypothesis 12: There is no significant difference among the mean IQ in youth for academic achievement with regards to the dependent variable of intelligence.

Inspection of the means in Table 12 indicates that juvenile delinquents had higher IQ's for three of the four grading groups but achieved poorer academically than their nonjuvenile delinquent counterparts. In other words, the

nonjuvenile delinquent students had lower IQ's but achieved higher grade point averages than the juvenile delinquents did in three of the four categories.

Table 11

Analysis of Variance on Intelligence by Delinquency Status and Academic Achievement

Source of Variation	Sum of Squares	Degrees of Freedom	Mean Square	F Value
Main Effects				
Delinquency Status	159.17	1	159.17	1.32
Academic Achievement	5167.59	3	1722.53	14.37*
Delinquency by Achievement	233.40	3	77.80	.64
Within	11984.28	100	119.84	
Total	17392.92	107		

\* = significant at .10 level

Table 12

Means for Intelligence by Academic Achievement and  
Delinquency Status

Juvenile Delinquent			Nondelinquent	
	N	Mean	N	Mean
D	20	90.35	6	92.83
C	27	97.70	37	94.89
B	5	110.80	10	104.40
A	1	135.00	2	122.50
Total	53	96.87	55	97.40

Analysis of the data in Table 13 leads to the acceptance of Null Hypothesis 13: The independent variables of special services and delinquency status do not interact on the dependent variable of intelligence. There was no significant interaction for either of the independent variables on the dependent variable. There was, however, a significant difference ( $F=8.71$ ) found in the main effects for special services. This analysis leads to the rejection of Null Hypothesis 14: There is no significant difference between the mean IQ in youth for special services with regards to the dependent variable of intelligence.

Table 13

Analysis of Variance on Intelligence by Delinquency Status  
and Special Services

Source of Variation	Sum of Squares	Degrees of Freedom	Mean Square	F Value
Main Effects				
Delinquency Status	.02	1	.02	.00
Special Services	1343.19	1	1343.19	8.71*
Delinquency by Services	.00	1	.00	.00
Within	16042.08	104	154.25	
Total	17392.92	107		

\* = significant at the .10 level

Table 14

Means for Intelligence by Special Services and Delinquency Status

	Juvenile Delinquent		Nondelinquent	
	N	Mean	N	Mean
Yes	23	92.78	20	92.30
No	30	100.00	35	100.03
Total	53	96.87	55	97.40

Examination of the means in Table 14 reveals no significant difference in the mean IQ's of juvenile delinquent and nonjuvenile delinquent youth who received special services.



## Chi-Square Test of Independence

Hypotheses fifteen through twenty-one were analyzed with a chi-square statistic at the .10 level of significance. The percentage of the juvenile delinquents and the nonjuvenile delinquents on each of the seven variables listed previously are displayed in the tables. A critical chi-square value ( $X^2$ ), a calculated chi-square value and degrees of freedom (df) are reported for each set of data. Tables 15 through 21 display the Chi-Square Analysis for Delinquency Status and each individual variable.

Table 15

## Chi-Square Analysis for Delinquency Status and Sex

Juvenile Delinquent	Male	Female
Expected	(43.26)	(13.74)
Observed	47	10
Nonjuvenile Delinquent	Male	Female
Expected	(41.74)	(13.26)
Observed	38	17

df = 1            critical  $X^2 = 2.71$             calculated  $X^2 = 2.73^*$

\* = significant at .10 level

The data in Table 15 indicates at the .10 level of significance that the characteristic of sex was not independent of the delinquency status. Examination of this data

indicates that more male juvenile delinquents were actually observed than were expected. This leads to the rejection of Hypothesis 15: Delinquency status is independent of the variable of sex. There are more observed male juvenile delinquents than statistically would be expected.

Table 16

## Chi-Square Analysis for Delinquency Status and Race

Juvenile Delinquent	Caucasian	Indian	Black/Other
Expected	(43.77)	(9.67)	(3.56)
Observed	39	13	5
Nonjuvenile Delinquent	Caucasian	Indian	Black/Other
Expected	(42.23)	(9.33)	(3.44)
Observed	47	6	2

df = 2                      critical  $X^2 = 4.61$                       calculated  $X^2 = 4.57$

Data in Table 16 was collapsed into three cells. Small cell values in the classes of Black and Other made the analysis suspect and were collapsed into one cell. Inspection of the data in Table 16 indicates, that at the .10 level, the characteristic of race is independent of the variable of delinquency status. Closer examination of the data in Table 16 indicates that the categories of Indians and Black/Others had slightly higher frequencies of juvenile delinquents than would be expected but was not statistically significant. The Caucasian group when examined indicates a

larger frequency of Caucasian nonjuvenile delinquents and a smaller frequency of Caucasian juvenile delinquents than would be expected. This analysis leads to the acceptance of Null Hypothesis 16: Delinquency Status is independent of the variable of race.

Table 17

Chi-Square Analysis for for Delinquency Status and Socioeconomic Status

Juvenile Delinquent	Lower	Middle/Upper
Expected	(14.76)	(42.24)
Observed	21	36
Nonjuvenile Delinquent	Lower	Middle/Upper
Expected	(14.24)	(40.76)
Observed	8	47

df = 1                  critical  $X^2 = 2.71$                   calculated  $X^2 = 7.25^*$

\* = significant at the .10 level

The data for socioeconomic status was collapsed into two groups because of the low cell values for the upper class. This data, displayed in Table 17, indicates that there is a much greater frequency of lower class youth that are juvenile delinquents (21) than would be statistically expected (14.76). This leads to the rejection of Hypothesis 17: Delinquency status is independent of the variable of socioeconomic status.

Table 18

## Chi-Square Analysis for Delinquency Status and History of Family Crime

Juvenile Delinquent	Yes	No
Expected	(7.13)	(49.88)
Observed	11	46
Nonjuvenile Delinquent	Yes	No
Expected	(6.88)	(48.13)
Observed	3	52

df = 1                  critical  $X^2 = 2.71$                   calculated  $X^2 = 4.90^*$

\* = significant at the .10 level

The analysis presented in Table 18 leads to the rejection of Null Hypothesis 18: Delinquency Status is independent of the variable of history of family crime. Juvenile delinquent youngsters had a higher percentage of immediate family members involved in crimes for the total population than did nonjuvenile delinquent youngsters. Therefore the history of family crime is not independent of delinquency status.

Table 19

## Chi-Square Analysis for Delinquency Status and Marital Status of Parents

Juvenile Delinquent	Intact	Not Intact
Expected	(36.06)	(24.94)
Observed	21	36
Nonjuvenile Delinquent	Intact	Not Intact
Expected	(30.94)	(24.94)
Observed	42	13

df = 1            critical  $X^2 = 2.71$             calculated  $X^2 = 17.77^*$

\* = significant at the .10 level

Table 19 indicates that the marital status of parents is extremely significant at the .10 level for delinquency status and leads to the rejection of Null Hypothesis 19: Delinquency Status is independent of the variable of marital status of parents. These data indicate a far greater tendency for juvenile delinquents to come from a home that is not intact, i.e: natural mother and father, in the early school years of kindergarten through grade four, than the nonjuvenile delinquent population.

Table 20

## Chi-Square Analysis for Delinquency Status and Academic Achievement

Juvenile Delinquent	D	C	B	A
Expected	(14.25)	(33.59)	(7.63)	(1.53)
Observed	22	29	5	1
Nonjuvenile Delinquent	D	C	B	A
Expected	(13.75)	(32.41)	(7.37)	(1.47)
Observed	6	37	10	2

df = 3                      critical  $X^2 = 6.25$                       calculated  $X^2 = 12.08^*$

\* = significant at the .10 level

Inspection of the data in Table 20 indicates a higher observed frequency of poor academic achievement for juvenile delinquents and a lower observed frequency for successful academic achievement. The nonjuvenile delinquents had higher observed frequencies for successful academic achievement than expected as well as a lower observed frequency of poor academic achievement. Therefore, Table 20 leads to the rejection of Null Hypothesis 20: Delinquency Status is independent of the variable of academic achievement in grades K-four. There is a greater tendency for juvenile delinquents to have a lower academic achievement in the primary school years. While the majority of both juvenile delinquent and nonjuvenile delinquent students grades were clustered in the C range the extreme ranges at both

ends of the scale (A, D) suggest a much greater tendency for potential juvenile delinquents to achieve poorly in the early school years. Therefore academic achievement is not independent of delinquency status.

Table 21

Chi-Square Analysis for Delinquency Status and Special Services

Juvenile Delinquent	Yes	No
Expected	(23.41)	(33.59)
Observed	26	31
Nonjuvenile delinquent	Yes	No
Expected	(22.59)	(32.41)
Observed	20	35
df = 1	Critical $X^2 = 2.71$	Calculated $X^2 = .99$

Table 21 suggests that special services provided to students in the early school years of kindergarten through grades four does not have a significant role in whether students become juvenile delinquents. The expected and observed frequencies shown in Table 21 do not show a significant difference in the frequencies for either juvenile or nonjuvenile delinquents. Therefore Null Hypothesis 21 is accepted: Delinquency Status is independent of the variable of special services provided by the school.

## Multiple Regression Analysis

A Multiple Regression Analysis was used to test the final hypothesis. This analysis examined all seven variables at one time to determine if there was a relationship in characteristics in the juvenile delinquents that was not evident in the nonjuvenile delinquent group. It attempted to provide a prediction of juvenile delinquency by examining what unique contribution each of these variables had in relation to the others.

The data is displayed in Tables 22, 23, and 24. Table <sup>22</sup>23 displays the Analysis of Variance Regression Summary. Table 23 displays the Multiple Regression Analysis for Delinquency Status and the independent variables. Finally, Table 24 shows the summary table for the R Square of the Multiple Regression.

Table 22

## Analysis of Variance Regression Summary

R Square	DF	F
.235	111	4.12*

\* = significant at .10 level



Table 23

Multiple Regression Analysis for Delinquency Status by  
Independent Variables

Variable	B	Beta	F	p
Sex	.187	.164	3.181	.078*
Race	-.720	-.107	1.249	.267
Socioeconomic Status	-.146	-.040	.170	.681
Marital Status	-.361	-.356	14.873	.0002*
Family Crime	.277	.166	3.089	.082*
Academic Achievement	.591	.234	5.353	.023*
Special Services	-.106	-.103	1.021	.315

\* = significant at .10 level

Table 24

Summary Table for R Square

Variable	R Square	R Square Change
Sex	.023	.019
Race	.050	.028
Socioeconomic Status	.051	.000
Marital Status	.166	.115
Family Crime	.191	.025
Academic Achievement	.235	.044
Special Services	.004	.004

Inspection of the data in Tables 23 and 24 reveals significance at the .10 level for a relationship between the seven characteristics and delinquency status. The variables of sex, marital status of parents, history of family crime, and academic achievement in grades kindergarten through grade four are significant in regards to delinquency status. Students who become juvenile delinquents appear to be males that come from broken homes, have a history of family crime in their immediate family, and attained poor academic achievement in early school years. This leads to the rejection of Null Hypothesis 22: There is no significant relationship between the characteristics of sex, race, socioeconomic status, history of family crime, marital status of parents, academic achievement in kindergarten through grades four, and special services provided by the school district.

An additional procedure was employed to judge the predictive efficiency of the prediction model. This analysis found 72.6% of the sample was correctly identified.

#### Summary

The data was analyzed with a two-way analysis of variance, a chi-square test of independence, and a multiple regression analysis. Significance was found in the means of intelligence when tested with a two-way analysis of variance for socioeconomic status, academic achievement in grades

K-4, and special services provided in the primary years. As a result of the chi-square test of independence, five null hypotheses were rejected indicating that delinquency status was not independent of sex, socioeconomic status, history of family crime, the marital status of parents, and the academic achievement in kindergarten through grade four. The multiple regression analysis found a significant relationship in the characteristics of sex, marital status of parents, history of family crime, and the academic achievement in kindergarten through grades four for juvenile delinquents leading to the rejection of the final hypothesis. A predictive efficiency employed found 72.6% of the sample identified correctly.

The final chapter of this paper will present the summary, conclusions, and recommendations of this study. These will be enumerated with regards to the data presented in this chapter.

## CHAPTER V

## SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

## Summary

The problem of this study was twofold. First it was to determine if a group of adjudicated youth between the ages of thirteen and eighteen years old who committed juvenile delinquent acts between June, 1982 and December, 1983 and a matched sample of nonadjudicated youth that were currently enrolled in the Great Falls Public Schools differed on seven selected characteristics that existed in their early school years of kindergarten through grade four. Second, it was to determine if those selected characteristics observed in kindergarten through grade four could discriminate between a potential juvenile delinquent and a nonjuvenile delinquent.

The study began with an extensive review of the literature summarized in Chapter II under five main topics. Those topics were: a.) General Findings and Current Attitudes Toward Juvenile Delinquency; b.) Sociological and Familial Related Causes; c.) School Related Factors; d.) Labelling Theory and Self-Esteem; and e.) Causation and Predictive Models. The review found no evidence that there was any one variable or set of variables that could accurately

predict juvenile delinquency. Some researchers suggested strong relationships among juvenile delinquency and low income (Harry, 1974; Krohn, 1980; and Scott, 1982), juvenile delinquency and learning disabilities (Morgan, 1979; Podby and Mallory, 1978; and Swanstrom, 1981), and juvenile delinquency and poor self-esteem (Bernstein, 1969; Williams, 1983; and Nigem, 1981). Most authorities agreed that the field was relatively wide open to advancements in the theory (Ball, 1983; Berman and Siegal, 1976; Brown, 1981; and Sherer, 1983).

The review of the research found that the field of juvenile delinquency has been researched for many years by scores of authorities. While this research has assisted in advancing the understanding of the problem of juvenile delinquency the apparent factors of why some youth become delinquent in their behavior has not yet been determined.

Data for this study was gathered on a group of thirteen to eighteen year old youth arraigned for juvenile delinquent acts before the Cascade County Youth Court System from June, 1982 to December, 1983 and a group of 13 to 18 year old youth that had no previous involvement with the Court System and were currently enrolled in the Great Falls Public Schools. The two groups of youth were compared on sex, race, socioeconomic status, history of family crime, marital status of parents, academic achievement and special services provided by the school district in the primary

years. For the purpose of this study the juvenile delinquent group was matched to the nonjuvenile delinquent group by achievement test scores on the Cognitive Abilities Test and the Iowa Test of Basic Skills in grades two and four, respectively.

The statistical procedures of two-way analysis of variance, chi-square test of independence, and multiple regression analysis were applied to the hypotheses to determine if there was any predictive behaviors for the youth in the primary school years that could predict possible juvenile delinquency. The hypotheses were tested at the .10 level of significance to reduce the risk of a Type II error. Dr. Don Robson programmed and supervised the data analysis which was processed at the Montana State University Computer Center.

After analysis of the data, it was summarized and put into tabular form. As a result of the two-way analysis of variance, four null hypotheses were rejected and significance was found in the means of intelligence for socioeconomic status, race, academic achievement in kindergarten through grade four and special services provided in kindergarten through grade four. Five null hypotheses were also rejected as a result of the chi-square test of independence indicating that delinquency status was dependent on either sex, socioeconomic status, history of family crime, marital status of parents, and academic achievement in kindergarten

through grade four. The multiple regression analysis found a significant relationship in the unique contribution of the characteristics of sex, marital status of parents, history of family crime, and academic achievement in kindergarten through grade four for juvenile delinquency. This led to the rejection of the null hypothesis: There is no significant relationship between the characteristics of sex, race, socioeconomic status, history of family crime, marital status of parents, academic achievement in kindergarten through grades four, and special services provided by the school district and the dependent variable of delinquency status.

This analysis provided the data to the questions originally proposed in this study. The answers to those questions are:

Yes, there is a common set of characteristics that emerge in the early school years that can alert school officials to a potential juvenile delinquent. Those characteristics are sex, marital status of parents, history of family crime, and academic achievement in the first four years of school. In other words, students that are male, from broken homes, with an immediate family member involved in crime, and are achieving poorly in school work should be looked at for intervention strategies to prevent possible juvenile delinquency.

No, there was no evidence that the level of intelligence predisposes that youth to delinquent behavior.

No, there was no evidence that students who received special services in the primary years were able to keep themselves free from crime more so than those who did not receive services.

Yes, students from lower class homes with poor academic achievement seemed to gravitate more towards juvenile delinquency than those from middle class homes.

Yes, there were differences in intelligence levels when the characteristics were examined. Juvenile delinquents had higher mean IQ's when analyzing the characteristics of race, marital status of parents, and academic achievement.

### Conclusions

This researcher has reached the following conclusions based on analysis of the data and information collected in this study.

1. Male youngsters had a greater tendency towards juvenile delinquency when sex was looked at with regards to delinquency status.

2. There was no significant difference in the mean IQ of male juvenile delinquents when compared to the mean IQ of female juvenile delinquents.

3. There was a significant difference in the means of intelligence for the different categories of race.

4. The race category an individual belonged to was



independent of juvenile delinquency. In other words, while the observed frequency of Indians and Black/Others was higher than expected it was not statistically significant.

5. There was a significant difference in the means of intelligence for socioeconomic status as well as a dependence of juvenile delinquency on the socioeconomic status. It appears that lower class youth have a greater tendency to gravitate towards juvenile delinquency than middle class youth.

6. Juvenile delinquent youngsters appear to have a higher incidence of families that have a history of family crime (mother, father, brother, sister) than their nonjuvenile delinquent counterparts.

7. Juvenile delinquents have a significant pattern of coming from homes that are not intact. In other words, students who became juvenile delinquents tended to live in homes, in the primary school years, that did not have a natural mother and father. Sixty-three percent of juvenile delinquents were from broken homes compared to 23.6 percent of their counterparts.

8. Academic achievement in kindergarten through grade four was a major indicator of those students labelled juvenile delinquent. Even though the juvenile delinquent students had higher IQ means their achievement in the early grades was lower than the nonjuvenile delinquent population. This leads to the conclusion that poor academic achievement

in the primary years is a very useful indicator for students that become juvenile delinquents. It suggests that potential juvenile delinquents achieve more poorly academically than those who do not become involved with the law.

9. While delinquency status was not dependent on whether special services were provided to the student the mean IQ of juvenile delinquents who received special services was significantly lower than the mean IQ of those who did not receive services.

10. In the review of the literature, race was found to be a major indicator of juvenile delinquency. This study found a difference in mean IQs' for race categories but did not find a dependency of race on juvenile delinquency. The other indicators of juvenile delinquency (marital status of the parents and academic achievement) noted in the literature were upheld in this study. In addition, the importance of family members that had criminal records was sparse in the literature while this study found it to be one of the indicators of juvenile delinquency.

11. In relationship to all seven variables taken together and the unique contribution of each of those variables, four characteristics emerged as early signs of potential delinquency: sex, marital status of parents, history of family crime and academic achievement in the primary school years. Male students who come from homes without a natural mother and father, have a history of family crime

with immediate family members, and have poor academic achievement in grades kindergarten through grades four have a greater tendency to become juvenile delinquents.

12. Finally, an additional procedure employed to ascertain the predictive effectiveness found that 72.6% of all youth analyzed in this study were correctly identified.

#### Recommendations for Further Study

Based upon the findings and conclusions of this study, the following recommendations emerge as appropriate for further investigation.

1. This study should be replicated in other areas of Montana to see if similar results are obtained. While replication in another large urban area of Montana might substantiate this study, it would prove more beneficial to human services personnel to see if rural areas would provide similar findings.

2. Studies using different variables from those presented in this study should be conducted. Those different variables might include the number of siblings, the number of different schools attended in the same district, the number of moves in the student's life, the remarriage of parents in broken families, or special services provided after the youth has become delinquent.

3. An interview/assessment with primary school teachers could evaluate the teacher's perceptions of what

characteristics they believe lead to future juvenile delinquent actions in primary school-aged youth.

4. School personnel should become aware of the characteristics of students that may gravitate towards juvenile delinquency through staff development and/or pre-service and in-service programs.

5. Considering these students were in broken homes a number of years ago when it was not as common as today, a study could investigate if the impact of broken homes would be as great on youth now as it was then. The stigma of divorce is not as great today as it once was and may have a different influence on a child's development. This aspect should be studied further.

6. In elementary schools where students have counseling services available, the effects of counseling with students who have similar characteristics to the juvenile delinquents in this study could be examined. If counselors tended to work with students who were from divorced homes or students who were underachievers there may have been significantly different results with these clients because of the intervention of intensive counseling.

7. A longitudinal study should be conducted to determine if the results would be the same if certain of the characteristics changed. For example, what happened to students whose parents divorced in later years or whose parents remarried, or what happened to students who achieved poorly

and were given special services in later years. The effects of these characteristics on youth over time should be studied for additional results.

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