

A COMPARATIVE STUDY OF STUDENTS
AND THEIR PARENTS IN RELATION
TO BEHAVIORAL CATEGORIES AND
VIOLATION RECORDS

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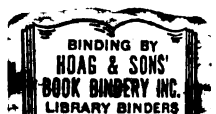
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ABSTRACT

A COMPARATIVE STUDY OF STUDENTS AND THEIR PARENTS IN RELATION TO BEHAVIORAL CATEGORIES AND VIOLATION RECORDS

By

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The primary purpose of this study was to determine the relationship between the scores of students on the Mann Inventory and the scores of their respective parents on the same measure. Also of concern was to determine if there was a relationship between students' violation records and parents' violation records.

The sample population of this study consisted of 157 students of three selected high schools and their parents. The data was collected between January 14, 1972 and March 25, 1972.

The subjects all lived within a fifty mile radius of Lansing, Michigan and were representative of the socio-economic, ethnic, and cultural group found in this area. This area has many large industries, the state capitol,

many governmental agencies, Michigan State University and Lansing Community College.

The majority of students who were asked consented to participate in the study. The Mann Inventory and the reason for its use were explained. After completing the inventory, the students were given a self addressed envelope containing two answer sheets, one Mann Inventory and a letter to their parents. The students were then asked to take the envelope to their parents and to encourage them to complete the questionnaire. Of the 379 students who participated, 157 sets of parents responded.

The chi square test of significance was used for the statistical analysis of the behavior categories and driver records of students and parents.

The Pearson Product Moment Coefficient of Correlation was used in determining the relationship between the total score on the Mann Inventory of students and parents.

Statistical analysis of the data revealed:

1. Significant relationships at the .05 level.
 - (a) Driver education teachers' rating of students in behavioral categories and the students' behavioral category as measured by the Mann Inventory.
 - (b) Male students' behavioral categories as rated by the driver education teachers and mothers' behavior categories as measured by the Mann Inventory.

2. Statistical analysis of the data revealed no significant relationships at the .05 level.
 - (a) Male students' behavioral categories as measured by the Mann Inventory and fathers' behavioral categories as measured by the Mann Inventory.
 - (b) Female students' behavioral categories as measured by the Mann Inventory and parents' behavioral categories as measured by the Mann Inventory.
 - (c) Parents' behavioral categories as measured by the Mann Inventory and parents' violation record.
 - (d) Both male and female students' behavioral categories as measured by the Mann Inventory and students' violation records.
 - (e) Driver education teachers' ratings of male students in behavioral categories and fathers' behavioral categories as measured by the Mann Inventory.
 - (f) Driver education teachers' ratings of female students in behavioral categories and parents' behavioral categories as measured by the Mann Inventory.
 - (g) Students' violation record and parents' violation record.
 - (h) Students' total score on the Mann Inventory and parents' total score on the Mann Inventory.

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CHAPTER I

THE PROBLEM

Motor-vehicle deaths have totalled more than 1,800,000 in the United States during the years 1900 through 1970. In addition, there have been more than 2,000,000 disabling injuries each year.¹ The estimate of financial losses due to the motor-vehicle accidents in 1970 alone totalled \$13,600,000,000.² This figure does not include costs accrued by public agency activities such as police, fire departments and courts.

With this ever increasing loss of lives, and the vast number of people being maimed for life, it has become increasingly important for research to be performed in a continuing effort to reduce these losses.

The chairman and chief executive of Allstate Insurance Companies, Judson Branch, commented at the second annual Automobile Insurance Industry Traffic Safety Symposium on behavioral research and traffic safety:

¹Accident Facts, 1971 edition, National Safety Council, pp. 40, 49.

²Ibid., p. 40.

Results are what we all seek. Results are demanded of us because of the real crisis we are facing in the 100 plus lives lost every day, and the 10,000 plus injuries every day. To the extent that a dollar sign can replace human misery, all of this adds up to an unbelievable \$900 million a month in economic loss--and each year it increases. To reverse this tide would indeed be an accomplishment.

I am confident that driver behavior research can help to do this, and, in turn, as we begin to solve the problem of putting only qualified drivers on the highways and allowing only qualified drivers to remain on the roads, then we begin to attack the root causes of these soaring increases in the number of accidents, the toll of lives, and the cost of insurance.³

A report⁴ released by the Federal government declared a need for research involving the question of how driving behavior, good or bad, is attained. The publication expressed concern in respect to the "problem" of teenage drivers. There was a call for more comprehensive inquiry into the origin of adolescent behavior with respect to the use of the automobile.

A wide variety of investigations have considered the effect of the following predictor variables on driving behavior: physiological, sensory, psychomotor, visual, fatigue, age, alcohol, mental, emotional measures and a

³Judson Branch, Keynote Address at the Second Annual Automobile Insurance Industry Traffic Safety Research Symposium, Quoted in Driver Behavior--Cause and Effect, Northbrook, Illinois, 1968, p. 11.

⁴U.S. Departments of Health, Education, Welfare, Report of the Secretary's Advisory Committee on Traffic Safety, pp. 1, 68-69.

combination of these.⁵ These studies have shown that it is the driver who presents the greatest challenge in the ability to predict accident involvement. A number of investigations have shown that there is a definite relationship between personality and behavior patterns and accident involvement. Kenel⁶ revealed in his study of behavioral patterns of high school driver education students that there was a significant relationship between behavioral categories and violations.

In this century, young people as well as adults are going through a period where there is a great deal of turmoil.

Evidence that the age between 15 and 24 is a turbulent period in the lives of many people come from the data on crime. The 1967 figure for crime in the United States, published by the FBI, showed over 446,000 suburban arrests for persons 15 to 24. This is over 46 percent of the total for all ages. In the cities, nearly 37 percent of the 4.8 million arrests for crime were in this group. Of all arrests for crime, nearly 38 percent of the 5.5 million were in this age group. But the 15 to 24 age group comprised less than 24 percent of the total population of 15 and above. Their over-representation in the total arrests for crime is just under 60 percent. It would appear that some of the same pressures that make for a

⁵Leon G. Goldstein, "Human Variables in Traffic Accidents," Highway Research Board (Washington, D.C.: National Research Council, 1962), pp. 1-5.

⁶Francis C. Kenel, "The Effectiveness of the Mann Inventory in Classifying Young Drivers Into Behavioral Categories and Its Relationship to Subsequent Driver Performances" (unpublished Doctoral dissertation, Michigan State University, 1967).

disproportionate number of tragedies on the highway.⁷

The question arises as to what has happened. Do the young people of our nation still hold the family in respect or is their generation one of a peer influential society?

It has been generally accepted that environment plays an important part in forming an individual's attitudes and behavior. Educators have long questioned the amount of influence parents have over the behavioral actions of their children. Studies have indicated that peer group pressure plays a significant part in the child's actions. However, one of the underlying causes of student behavior could well be the basic attitudes of the parents toward traffic safety. If this is true, then as driver educators we must take into consideration parental attitudes when developing and conducting driver education programs.

In order to understand negative attitudes towards traffic safety and driving behavior in certain drivers, investigations must be undertaken to determine the basis for poor attitudes towards traffic safety.

⁷Special Study, Youth and Traffic Safety Education, Adopted: July 1, 1971, National Transportation Safety Board, Washington, D.C., Report Number NTSB-STS-71-3, p. 4.

Statement of the Problem

The primary purpose of this study was to determine the relationship between the scores of selected students on the Mann Inventory and the scores of their respective parents on the same measure.

A second purpose of this investigation was to determine if there is a relationship between students' driving records and parents' driving records.

Basic Assumptions

The investigation of this problem was based on the following assumptions.

1. The Mann Inventory can be used to place individuals into distinct, behavioral categories.
2. Parents and students will express their true feelings in responding to the items on the Mann Inventory.
3. The raters (Driver Education teachers) have the academic background and professional experiences to place students into one of the three behavioral categories.

Delimitations

This study was limited in the following manner:

1. All participants were volunteers in this study.
2. All participants have had their drivers licence for one year or more.
3. All participants were from three selected high schools.
4. Personality measurement was limited to the areas included in the Mann Inventory.

The Hypotheses

The hypotheses to be tested in this study were:

- Ho₁: There is a significant relationship between the behavioral categories of students and their parents as measured by the Mann Inventory.
- Ho₂: There is a significant relationship between the behavioral categories as measured by the Mann Inventory and the violation-conviction record of parents.
- Ho₃: There is a significant relationship between the behavioral categories as measured by the Mann Inventory and the violation-conviction records of students.
- Ho₄: There is a significant relationship between the driver educators' rating of students in behavioral categories and students' behavior categories as measured by the Mann Inventory.
- Ho₅: There is a significant relationship between the driver educators' rating of students in behavioral categories and their parents' behavioral categories as measured by the Mann Inventory.
- Ho₆: There is a significant relationship between the violation-conviction records of parents and students.

Ho₇: There is a significant relationship between the parents' total score on the Mann Inventory and the students' total score on the Mann Inventory.

Definition of Terms

Mann Inventory

A personality inventory, consisting of sixty-three items, which attempts to measure an individual's feelings towards himself, others, and established social conventions.

Violation

An infringement or breach of a traffic law by a person while operating a moving vehicle for which he is convicted.

Parent

For the purpose of this investigation, a person (male or female) whose child has completed a driver education course before December 31, 1970.

Three Behavioral Categories

Over Controlled Behavior.--A behavior characterized by withdrawal from communication with other persons with efforts to have everything under control so that they cannot be criticized by others.

Under Controlled Behavior.--A behavior characterized by forceful, outgoing action, or vigorous effort to assert

oneself over others, with little consideration of the results.

Average Behavior.--A behavior characterized by well-adjusted interaction with persons and consistent with the norms of the society in which the individual lives, with the absence toward extremes in personality.

Organization of the Study

The general plan of this study is to present in Chapter II a review of the literature pertinent to the relationship of parental role, parent-child relationship, and personal/social adjustment to driver performance. Chapter III contains a description of the test instrument used, an account of the methods used in collecting, organizing and tabulating the data and the statistical techniques applied in analyzing it. Chapter IV is an account of the results of the analysis. The summary, conclusions, discussion, and recommendations for further study appear in Chapter V.

CHAPTER II

REVIEW OF THE LITERATURE

The review of literature pertinent to this survey has been conducted and is presented in the following areas: (1) research on parental roles, (2) research on parent-child relationship, (3) research on young drivers and the relationship between human factors and accident and conviction records, and (4) research employing the Mann Inventory.

Review of Research on Parental Roles

The concept of role has been used extensively in sociological and psychological theory. In recent years there has been a cooperative effort to further understanding of family relationships through the application of this concept.

Parsons⁸ defined role as follows:

Role is that organized sector of an actor's orientation which constitutes and defines his participation

⁸T. Parsons, "Some Fundamental Categories of the Theory of Action: A General Statement," In T. Parsons and E. A. Shills (eds.), Toward a General Theory of Action, Cambridge, Mass.: Harvard University Press, 1951, p. 23.

in an interactive process. It involves a set of complementary expectations concerning his own actions and those of others with whom he interacts. Both the actor and those with whom he interacts possess these expectations. Roles are institutionalized when they are fully congruous with the prevailing culture patterns and are organized around expectations of conformity with morally sanctioned patterns of value orientations shared by members of a collectivity in which the role functions.

In another study Parsons characterizes the family as a unitary social system or a psychological group in which the actions of individuals have significance for each other and for the total group. He theorizes that wives and daughters concern themselves largely with expressive considerations and husbands and sons give primarily to instrumental tasks. Biologically the mothers' early bearing and nursing experience predisposes her toward social-emotional relationships.

The importance of occupational setting is emphasized by Naegele and Aberle,⁹ in stating that the fathers' relationship with his son is mediated largely in terms of the latters' eventual incorporation into a suitable occupation.

A number of studies (Kenkel, Huntington, Quade) have tested the Parsonian theory for husband-wife

⁹D. F. Aberle and K. D. Naegele, "Middle-class Fathers' Occupational Role and Attitudes Toward Children," In N. W. Bell and E. F. Vogel (eds.), The Family, Glencoe, Ill.: The Free Press, 1960.

interactional patterns. Married couples were presented with problem situations and asked to work out a solution to the satisfaction of both. These interactions were recorded and analyzed within the limits of instrumental and expressive categories as defined by Bales.¹⁰

If the act is judged by the observer to be steered by cognitive orientation primarily to the past, or if it is felt to be caused in a nonmeaningful manner by some existing state of emotion or motivational tension in the self, and if the results which follow it are judged not to have been specifically anticipated by symbolic manipulation, we shall speak of the act as primarily expressive. If the act is judged to be steered by a cognitive orientation to the future as well as the past and to be caused in part by the anticipation of future consequences, we shall speak of the act as instrumental.

Meaningful distinctions were procured with husbands taking instrumental roles and wives taking expressive ones.

Emmerich¹¹ used an altered paired comparison procedure based on the child's perceptions of his parents. The extent to which the parent was viewed as facilitating the acts of the child was operationally defined as an expressive role, and the extent to which the parent was seen as interfering as the instrumental role. Pre-school

¹⁰Robert F. Bales, Interaction Process Analysis: A Method for the Study of Small Groups, Cambridge 42, Mass.: Addison-Wesley Press, Inc., 1951, p. 51.

¹¹W. Emmerich, "Young Children's Discriminations of Parents and Child Roles," Child Developm., 1959, 30, pp. 403-419; W. Emmerich, "Family Role Concepts of Children Age Six to Ten," Child Developm., 1961, 32, pp. 106-112.

children were found to attribute expressive roles to mothers and instrumental roles to fathers. Yet, this differentiation did not hold for older children.

A series of studies by Kagan¹² also utilized children's perceptions of their parents. In his analysis, perceptions of parents as being disciplinary, threatening, dominating, and competent were taken to indicate an instrumental role and qualities of nurturance and support as an expressive role. Once more, fathers were found to be instrumentally oriented and mothers expressively inclined in their relationship with their children.

Zelditch¹³ performed a cross-culture investigation. He used multiple criteria such as warmth and conciliation as a measure of the expressive role, and emotional restraint and boss to indicate the instrumental role. Once more, the findings were inclined to confirm Parsons' theory about parental roles.

These studies, with one exception, were centered largely on middle-class samples, with the indication that wives and husbands have mutual role relationships, with

¹²J. Kagan, "The Child's Perception of the Parent," J. Abnorm. Soc. Psychol., 1956, 53, pp. 257-258; J. Kagan and Judith Lemkin, "The Child's Differential Perceptions of Parental Attributes," J. Abnorm. Soc. Psychol., 1960, 61, pp. 440-447.

¹³M. Zelditch, "Role Differentiation in the Nuclear Family: A Comparative Study," In T. Parsons and R. F. Bales (eds.), Family, Socialization and Interaction Process, Glencoe, Ill.: The Free Press, 1955.

the wives taking the expressive roles and the husbands instrumental roles.

Review of Research on Parent-Child Relationships

The following studies dealt with comparisons between mothers and fathers, and the differential effects of their attitudes on the behavior of their children were reviewed.

Investigations by Becker and Peterson involved clinic populations, and utilized essentially the same design. The Fels Parent Behavior Scales, as well as other instruments, were administered to fathers and mothers of two groups of families. The breakdown of the two groups were: children requiring the help of the child guidance clinic and children who were not involved with the clinic. The child's behavior was evaluated by the parents in terms of conduct and personality problems.

These investigations emphasized the possible differences in the way that maternal and paternal behavior is structured in relationship to problems of children. The findings showed that both parents of conduct problem children tended to be maladjusted and dictatorial with the child. It was observed that the mother had the greater impact on the child. She was effective in thwarting and controlling the child, while the father was more passive and ineffective in

disciplinary matters. It was suggested by the Peterson investigation¹⁴ that parents of non-clinic populations tended to be higher in democratic guidance, parent-child harmony, sociability, and adjustment than clinic parents.

Research done by Becker, Winder and Rau was concerned more with non-clinic populations and used omnibus type procedures involving a variety of attitudinal variables. Becker¹⁵ employed measurement procedures similar to those for the clinic studies. The prime exception was teachers as well as parents were used to secure ratings of the child's behavior. Using teachers' ratings, conduct problems and aggression in boys were positively correlated with the mothers' physical punishment, negative perception of the father, poor self-esteem, anxiety, and poor adjustment. None of the fathers' variables were related. A similar discrimination was reported with respect to parental ratings of the boys' behavior.

Studies comparing attitudes of parents with social deviancy in preadolescent sons were carried on by Winder and Rau.¹⁶ The instrument used to assess attitudes

¹⁴D. R. Peterson, et al., "Child Behavior Problems and Parental Attitudes," Child Development, 1961, 32, pp. 151-162.

¹⁵W. C. Becker, et al., "Factors in Parental Behavior and Personality as Related to Problem Behavior in Children," J. Consult. Psychol., 1959, 23, pp. 107-118.

¹⁶C. L. Winder and Lucy Rau, "Parental Attitudes Associated with Social Deviance in Preadolescent Boys," J. Abnorm. Soc. Psychol., 1962, 23, pp. 107-118.

was the Stanford Parent Attitude Questionnaire and to assess social deviancy, the instrument used was the Peer Nomination Inventory. The Parent Attitude Questionnaire uses the technique based on peer ratings and renders measures of aggression, dependency, depression and withdrawal.

The consistency of the studies showed a tendency for the mothers' attitudes to be more influential of the sons' behavior than the fathers'. The measurements of the Stanford Parent Attitude Questionnaire and the Peer Nomination Inventory's variables showed 35 scores on the mothers' scales as compared to 22 of the fathers' scores to be significant at the .05 level of significance or better. Mothers with low-esteem, high ambivalence, high consistency, high demands for aggression, and high aggression and punitiveness were connected with three or four of the deviancy variables. Fathers with only strong discipline and physical punishment and high ambivalence were so related.

Recent research by Farber, Adams and Sarason centered on marital role tension and parental anxiety. Farber¹⁷ judged that role conflict by the mother, in comparison with that of the father, was significantly

¹⁷B. Farber, "An Index of Marital Integration," Sociometry, 1957, 20, pp. 117-134.

related to the child's perception of acceptance by either parent. It indicated a carryover of the marital relationship, either positive or negative by the mother to the mother-child relationship, and a coordinate role for the mother in which she intercedes between the father and the children. The mother's anxiety was more highly correlated with anxiety in boys than was the father's anxiety, as reported by Adams and Sarason.¹⁸

The review of research up to this point has been centered around social middle class. Similar research on lower class families have produced similar findings. An investigation conducted by Eron¹⁹ compared parental attitudes and peer ratings of their children on rejection, aggression, and popularity. The mothers' rejection and parental disharmony was more significantly related than the fathers' to behavioral disturbances in the child, while punishment by the fathers was more crucial than that by the mothers.

¹⁸Elsie B. Adams and I. G. Sarason, "Relation Between Anxiety in Children and Their Parents," Child Developm., 1963, 34, pp. 237-246.

¹⁹L. D. Eron, et al., "Comparison of Data Obtained From Mothers and Fathers on Childrearing Practices and Their Relation to Child Aggression," Child Developm., 1961, 32, pp. 457-472.

Another study of lower class families by McCord, McCord, and Howard²⁰ used aggression in early adolescent males as their dependent variable. Rejection, overcontrol, punitiveness, and inconsistency by the mothers were found to be significantly associated with the boys' aggression. The reference to the father was limited largely to the issue of his adequacy as an identification model. The fathers of aggressive boys were inclined to be passive, ineffectual, participating in immature deviant forms of behavior.

An investigation of parental attitudes and children's behavior was explored by Read.²¹ The attitudes of 32 parents were judged by their replies to two questionnaires. The behavior of the children was rated by four to seven nursery school teachers on the 67 traits of the Read-Conrad Abbreviated Behavior Inventory for Nursery School Children. The results showed again, that behavior deviations of the children were more closely associated with the attitudes of mothers than of fathers. It was concluded that, in the group studied, and according to the measurement techniques employed, child behavior is

²⁰W. McCord, Joan McCord, and A. Howard, "Familial Correlates of Aggression in Nondelinquent Male Children," J. Abnorm. Soc. Psychol., 1961, 62, pp. 79-93.

²¹Katherine H. Read, "Parents Expressed Attitudes and Children's Behavior," Journal of Consulting Psychology, 1945, pp. 95-100.

unrelated to parents' views, but is positively related to liberalism in views on parental control.

Finally, a study by Carlson and Klein²² comparing father and son violation records was conducted at a large state university. It was pointed out that the majority of students had completed a driver education program. A positive correlation was found between father and son's convictions incidence. The researchers concluded that driving behavior is learned more through familial than through institutional socialization and that delinquent familial socialization results in delinquent traffic behavior.

Review of Research on Young Drivers and
the Relationship Between Personal/Social
Adjustment and Accident and
Conviction Records

Since 1920, a number of investigations have attempted to prove or disprove the accident proneness theories. The results of these studies failed to give concrete evidence to the theory of accident proneness, but indicated that people involved in a number of accidents had certain personality characteristics. In the

²²William L. Carlson and David Klein, "Familial vs. Institutional Socialization of the Young Traffic Offender," Journal of Safety Research, March, 1970, 2(1), pp. 13-24.

last twelve years, there have been some revealing research of our youth in the area of human factors in driving. Thus, the review will be limited to this time period.

McCord and McCord²³ gathered biographical facts on several hundred young males before receiving driver license. The data was then used to show relationships with subsequent driving records. It was found that males convicted of serious traffic offenses were inclined to have overprotective or passive mothers, and to have been reared in broken or quarrelsome-neglecting homes. Those convicted of non-traffic offenses were more apt to suffer from parental cruelty, parental neglect, a criminal father, and either lax or erratically punitive discipline. It was the opinion of the authors that traffic violations seemed to be motivated by a search for power or mastery.

In an investigation comparing accident repeaters and accident-free senior high students, Rommel²⁴ used the Minnesota Multiphasic Personality Inventory. High accident drivers revealed higher scores with an item analysis of the MMPI indicating that these subjects desired to leave home, associated with peers to whom parents objected, had

²³W. McCord and J. McCord, Origins of Crime, New York: Columbia University Press, 1959.

²⁴R. C. S. Rommel, "Personality Characteristics and Attitudes of Youthful Accident-Repeating Drivers," Traffic Safety Research Review, 1959, 3(1), pp. 13-14.

been in trouble with the law, had an urge to do something harmful or shocking, a tendency to be influenced by people about them, to frighten others, to be overly suspicious and impatient.

A study by Brown and Berdie²⁵ of 993 male college students comparing the number of accidents and convictions were found to be highly correlated with higher scores on the Psychopathic Deviate and Hypomania scales of the MMPI.

Beamish and Malfetti²⁶ studied 86 young males with two or more traffic convictions and 186 young males with no convictions. Psychological tests and personal history forms were administered. The results showed that differences between the two were in the following areas: (1) emotional stability, (2) objectivity, (3) conformity and (4) mood. The violator subjects rated lower on all variables.

Brazell²⁷ investigated the driving and high school records of 2,775 males. Attitudes were rated by the driver education teachers. Students rated high by the

²⁵P. L. Brown and R. E. Berdie, "Driver Behavior and Scores on the MMPI," Journal of Applied Psychology, 1960, 44, pp. 18-21.

²⁶J. J. Beamish and J. L. Malfetti, "A Psychological Comparison of Violator and Non-Violator Automobile Drivers in the 16 to 19 Year Age Group," Traffic Safety Research Review, 1962, 6(1), pp. 12-15.

²⁷R. E. Brazell, "A Comparison of Various Behind-the-Wheel Training Methods," Automobile Club of Michigan, 1962.

teachers had better accident and convictions records, along with higher grades, higher intelligence testing results, graduation from high school, and had passed driver education on the first attempt.

Kenel²⁸ discovered that rating of better personal adjustment by driver education teachers of 1,100 students completing driver education were predictive of less future accident and violation involvement.

In a similar study, Schwenk²⁹ studied 1,700 male high school students. The Minnesota Counseling Inventory was administered with the following results: accident involvement was associated with lower scores on the Social Relationships scale, the Leadership scale, Social Introversion-Extroversion scale and with the higher scores on the Conformity scale, on the Masculine Egoism and Drop-out scales.

Schuster,³⁰ in a follow up study of 100 male California drivers under 25 years of age, reported that attitude scales could be used to predict with significance follow-up accidents and moving violations. He also

²⁸Kenel, op. cit.

²⁹L. C. Schwenk, "Personality Correlates of Accident Involvement Among Young Male Drivers," Ann Arbor, Michigan: University Microfilms, 1967.

³⁰D. H. Schuster, "Prediction of Follow-up Driving Accidents and Violations," Traffic Safety Research Review, 1968, 12, pp. 17-21.

reported that by combining attitudes scales and previous driving record of moving violations and accidents, an even better prediction could be made.

Levonian³¹ studied 1,080 California tenth grade driver education students. The students were administered a questionnaire measuring five scales: (1) determination, (2) adaptiveness, (3) expediency, (4) defensiveness, and (5) ambivalence. The results showed a correlation between traffic violations and high score on the Expediency scale.

In a study by Suchman,³² 1,500 high school and college students were asked how many accidental injuries (auto and non-auto) they had suffered in the past year which had troubled them for more than six days. Accident involvement was found to be related to behavior patterns, attitudes and self-image.

Review of Research Employing the Mann Inventory

Dr. Frank Kenel³³ was the first to undertake a study using the Mann Inventory. The sample population

³¹E. Levonian, "Personality Characteristics of Juvenile Driving Violators," Accident Analysis and Prevention, 1969, 1, pp. 9-16.

³²E. A. Suchman, "Accidents and Social Deviance," Journal of Health and Social Behavior, 1970, 11, pp. 4-15.

³³Kenel, op. cit.

of his study consisted of 1,057 subjects between the ages of 16 and 18 years enrolled in a driver education class. Kenel discovered that there was a high correlation between behavioral categories and violation-conviction records of high school students.

O'Leary,³⁴ in a ten year follow-up study of the subjects in Kenel's study used the accident and violation record to verify Kenel's results. The results showed the relationship between violation records and the Mann attitude categories were significant at the .05 level of significance.

Rodolf³⁵ administered the Mann Inventory to 444 male graduate students to determine what behavioral characteristics are associated with seat belt utilization. Analysis revealed behavioral categories identified by the Mann Inventory showed substantial differences in frequency of restraining device use. The average behavioral category was found to have the highest percentage of persons using restraining devices.

³⁴Philip John O'Leary, "An Assessment of the Effectiveness of the Mann Attitude Inventory as a Predictor of Future Driving Behavior" (unpublished Doctoral dissertation, Michigan State University, 1971).

³⁵J. D. Rodolf, "Behavior Characteristics Associated With Seat Belt Utilization," (unpublished Master's Thesis, Illinois State University, 1969).

Research by Goby,³⁶ Lazarewicz³⁷ and Quane³⁸ centered on the relationship between perception and behavior. Each of the investigators used the Mann Inventory and the Perception of Traffic Hazard Test in their collection of data.

The sample populations used by these three investigators lived in similar areas. Analysis of data in these studies did not indicate significant relationships between behavior and perception.

A study comparing 450 white students with 450 black students was carried on by Sinkoff³⁹ in a large Metropolitan area. The results showed that there was a significant difference between white and black females, white and black males, and white females and white males in their

³⁶D. W. Goby, "The Relationship Between Visual Perceptual Abilities and Behavioral Categories Among Beginning Motorists," (unpublished Master's Thesis, Illinois State University, 1970).

³⁷R. S. Lazarewicz, "The Relationship Between Behavioral Characteristics and Visual Perception," (unpublished Master's Thesis, Illinois State University, 1970).

³⁸W. L. Quane, "The Relationship of Visual Perceptual Capabilities as Measured by the Perception of Traffic Hazards Test and Behavioral Categories as Measured by the Mann Inventory," (unpublished Doctoral dissertation, Michigan State University, 1970).

³⁹A. Sinkoff, "A Comparison of Two Cultural Groups Through the Use of the Mann Inventory," (unpublished Doctoral dissertation, Michigan State University, 1969).

overall personal adjustment scores. There was no significant difference in this category between black females and black males.

An investigation of past driving records of 331 adults and their scores on the Mann Inventory was explored by Thompson.⁴⁰ The sample population included 190 males and 141 females. The data revealed no significance between the past driving record and the behavior characteristics of adults. It was concluded by the researcher that the Mann Inventory may not be useful as an instrument in classifying past driving records of adults.

Finally, a study by Covert,⁴¹ employed the 16PF Questionnaire along with the Mann Inventory to 668 driver education students. The analysis showed significant differences did exist in male and female students' self-concepts of personality characteristics when placed into behavioral categories by the Mann Inventory.

⁴⁰A. F. Thompson, "The Effectiveness of the Mann Inventory in Classifying Adult Drivers into Accident-Violation Experience Categories and its Relationship to Past Driver Performance," (unpublished Doctoral dissertation, Michigan State University, 1970).

⁴¹William Howard Covert, "Relationships Between Self-Concepts of the Young Driver and Ratings of Behavior by Driver Education Instructors and the Mann Inventory," (unpublished Doctoral dissertation, Michigan State University, 1972).

Summary

The review of research disclosed that mothers usually take expressive roles which are directed toward the immediate gratification of effective needs and fathers take instrumental roles which are directed more toward delay in gratification of effective needs. The parents' attitudes have a large effect on the behavior of their children. The adaptation of the young driver to himself, others and society tended to reduce violation and accident involvement.

The Mann Inventory and teachers' ratings can place students in behavioral categories with a great amount of accuracy. These behavioral categories can be used to predict drivers' behavior.

CHAPTER III

DESIGN AND METHODOLOGY

The Test Instrument

The Mann personal attitude inventory contains 63 items that appear to reflect an individual's feeling towards himself, others, and established social conventions. Answers to the items on the Mann Inventory are expressed by checking one of the five choices--always, usually, sometimes, rarely, or never.

The original Inventory was comprised of 100 items selected on the basis of face validity by Dr. William A. Mann of the Highway Traffic Safety Center, Michigan State University, East Lansing, Michigan. These items represented a collection of the feelings expressed by 100 Michigan high school students toward the police, school, cars, family, peers, personal expectations, desires and habits. These 100 students were characterized by their high school driver education teachers as the worst drivers in their schools. Case studies and personal interviews were conducted.⁴²

⁴²Kenel, op. cit., pp. 29-30.

Twenty Mid-Michigan driver education teachers were then asked to evaluate the students in their classes. The criteria the teachers used for classifying the students are as follows:

1. Very Aggressive: Any student who, in the opinion of the driver education instructor through personal observation in the classroom and/or during practice driving instruction displays behavior that is exceedingly aggressive, is a show-off, is extremely egotistical or temperamental.
2. Very Reserved: Any student who, in the opinion of the driver education instructor through personal observation in the classroom and/or during practice driving instruction displays behavior that is exceedingly cautious and timid.
3. Average: All students who do not fall into either of the other classifications.⁴³

Once these classifications were established, the inventory was administered to 451 students. The results were: 80 students as very aggressive, 86 as very reserved, and 285 as average. Thirty-seven items were deleted from

⁴³J. Schaff, "Personal Attitude Survey," (unpublished Master's Thesis, Michigan State University, 1957).

the inventory since most students gave similar responses. An adjustment scale was established by determining the responses of 85 percent of the average group to the remaining 63 items. This revealed a deviation of 7 - 19 points.⁴⁴

Forty-two individuals from the Ingham County Driver Safety School, Lansing, Michigan, were given the new form of the inventory. The results of this pilot study were as follows:

Fifteen were very reserved, 21 were very aggressive, and four were average. The two remaining individuals scored four and five of the six lie items incorrectly and deviated by 46 points each on the adjustment scale. Their responses to significant items vacillated from marked aggression to very reserved.⁴⁵

In Kenel's study of a large number of high school driver education students, six categories of behavior were used as the means of classification.

Kenel indicated there was a significant relationship between observed behavior and responses to the Mann Inventory and also to subsequent driving performance. He stated that the reliability of the Mann Inventory was determined by application of the Product Moment Coefficient of Correlation to two separate administrations of the instrument.

⁴⁴Kenel, op. cit., p. 31.

⁴⁵Ibid., p. 32.

Correlation values of .697-.986 were derived, with 63 degrees of freedom. These values indicated a high to very high correlation with marked or dependable relationships. . . . As the individual's behavior deviated from category 1 (well-adjusted) toward category 6 (marked evidence of problems of adjustment in school), his driving record of convictions and/or collisions increased.⁴⁶

The instrument used for the students in this study is the same as the one used by Kenel (see Appendix B). The instrument used for the parents was a modification of the one used by Kenel (see Appendix D). The modification of the Mann Inventory for parents involved changing the verb tense. For example, if the inventory read, "I like to take part," it was changed to "I liked to take part."

The Sample

The sample population of this study consisted of 157 subjects from three selected high schools in Michigan. The three high schools represented one private school and two urban schools.

All subjects lived within a fifty mile radius of Lansing and were representative of the socio-economic, ethnic, and cultural groups found in that area. This area contains the state capitol, governmental agencies, large industries, Michigan State University and Lansing Community College.

⁴⁶Ibid., p. 72.

In each high school, students with a drivers' license for more than one year were asked to participate. The majority of the students asked consented to participate. The Mann Inventory and the reason for its use were explained. The subjects were assured that the test results would be kept confidential. After completing the inventory, the students were given a self-addressed envelope containing two answer sheets, one Mann Inventory and a letter to their parents. The students were then asked to take the envelope to their parents and to encourage them to complete the questionnaire.

The number of students from each high school and their parents were not equal. The schools were of different enrollment and the study was based on a volunteer basis. The test instrument was administered in one of the three schools either on January 14, February 22, or March 1, 1972.

Instructors' Ratings

Each driver education teacher was asked to rate students as displaying average behavior, over-controlled behavior or under-controlled behavior. All raters were given a behavioral description (Appendix E) which is within the context of driver education. All the driver education teachers felt that the descriptions were adequate in helping them rate the students.

When more than one rater was involved in rating of students, a meeting was held and a consensus was arrived as to each students' behavioral classification.

Violation-Conviction Records

The violation-conviction records for the student population were taken from the period of January 1, 1971, to January 1, 1972. For the majority of students, this time period was the first full year of having their drivers' licence. The remainder of students had their licence for more than two years.

The violation-conviction records for the parents were taken from the period of January 1, 1969 to January 1, 1972.

It should be pointed out that a number of reported violations were not placed in the analysis because the driver records did not show a conviction.

The Data

Three types of data were gathered: the responses of each subject to the items in the Mann Inventory, their individual driving record and the driver education teachers' classification of students into one of three behavioral categories.

Once the scores were received and subjects placed into categories, both by scores and raters, each

individual's driving record was obtained from the Department of State Burroughs 5500 Computer Disk Storage System.

Procedure of Analysis

The statistical analysis used was the chi square test of significance. It was employed to determine if there was a significant relationship between the Mann Inventory behavioral categories of parents and students and the driver education teachers' rating of students.

The chi-square test of significance was also used to determine if there was a significant relationship in the violation records of parents and violation records of students.

The Pearson Product Moment Coefficient of Correlation was used to determine if there was a significant relationship in the total Mann Inventory score of parents and students.

The .05 level of significance was used in the statistical analysis of this study.

The statistical analysis used in this study was suggested and directed by the College of Education, Office of Research Consultation, Michigan State University.

The Null Hypotheses

The following are restatements of the hypotheses of this research in the null form, i.e., stating that

there is no significant relationship between the parents' violation record and the Mann Inventory score and the students' violation record and the Mann Inventory score.

Ho₁: There is no significant relationship between the behavior categories as measured by the Mann Inventory of students and their parents.

Ho₂: There is no significant relationship between the behavioral categories as measured by the Mann Inventory and the violation-conviction records of parents.

Ho₃: There is no significant relationship between the behavioral categories as measured by the Mann Inventory and the violation-conviction records of students.

Ho₄: There is no significant relationship between the driver educators' rating of students in behavioral categories and student behavioral categories as measured by the Mann Inventory.

Ho₅: There is no significant relationship between the driver educators' rating of students in behavioral categories and their parents' behavioral categories as measured by the Mann Inventory.

Ho₆: There is no significant relationship between the violation-conviction records of parents and students.

Ho₇: There is no significant relationship between the parents' total score on the Mann Inventory and the students' total score on the Mann Inventory.

Summary

The sample population was drawn from three public high schools within a radius of fifty miles from Lansing, Michigan. The responses to the Mann Inventory of parents

and students were collected between January 14, 1972 and April 25, 1972. Each subject was then assigned to one of three behavioral categories.

Driver license data was obtained through the Michigan State Department of Driver Records. The students' violations records were for a time period of one year and parents' violation records for three years.

The chi-square test of significance was employed to determine the difference between parent and students' behavioral categories.

The chi-square test of significance was again used to determine the significant difference between driving records of parents and students.

The Pearson Product Moment Coefficient of Correlation was used to determine the difference between the Mann Inventory total scores of parents and students.

The .05 level of significance was used in the statistical analysis of this study.

CHAPTER IV

STATISTICAL ANALYSIS

In this chapter are presented the analysis of (1) the various relationships between the students' behavioral categories and violation records, and parents' behavioral categories and violation records, and (2) the relationship between driver education teachers' ratings of students in behavioral categories and the students' behavioral category as measured by the Mann Inventory.

Of the original 379 students in the sample population, a number of students were not included in the analysis for one of two reasons: either both parents did not respond to the Mann Inventory, or the Mann Inventory was incorrectly completed. The total number of students used in the statistical analysis was 157. As shown in Table 1, the sexes (72 females and 85 males) are separated for statistical analysis.

Differences by Behavioral Categories

The null hypothesis tested was:

H_{01} : There is no significant relationship between behavioral categories of students and their parents as measured by the Mann Inventory.

Table 1. Mann Inventory rating of student distribution.

Category	Males	Females	Total
1 (overcontrol)	9	10	19
2 (undercontrol)	30	21	51
3 (average)	46	41	87
Total	85	72	157

The chi-square test of significance was administered to determine the relationship between the behavioral categories of the male students and parents and female students and parents.

A chi-square value of 9.487 was needed on the Mann Inventory to demonstrate a significant relationship at the .05 level of significance.

When comparing male youngsters and their fathers on the Mann Inventory, a chi-square value of 3.69 was obtained. For the male youngsters and their mothers, a chi-square value of 7.52 was acquired. When comparing the female youngsters with their fathers and mothers on the Mann Inventory, a chi-square value of 2.85 and 4.09 respectively was obtained.

On the basis of the obtained value of chi-square as indicated in Tables 2, 3, 4 and 5, the null hypothesis

Table 2. Analysis of the relationship between father and son behavioral categories as measured by Mann Inventory.

Male Students Behavioral Categories	Fathers' Behavioral Categories		
	Overcontrol	Undercontrol	Average
<u>Overcontrol</u>			
frequency ^a	2.00	2.00	5.00
cell chi-square ^b	.28	.79	.30
<u>Undercontrol</u>			
frequency	3.00	16.00	11.00
cell chi-square	.55	1.08	.32
<u>Average</u>			
frequency	8.00	17.00	21.00
cell chi-square	.13	.20	.05

^aFrequency = number of subjects in each category.

^bCell Chi-Square = cell contribution to chi-square.

Chi Square = 3.697.

Chi Square needed for significance at .05 level = 9.487.

Table 3. Analysis of the relationship between mother and son behavioral categories as measured by Mann Inventory.

Male Students' Behavioral Categories	Mothers' Behavioral Categories		
	Overcontrol	Undercontrol	Average
<u>Overcontrol</u>			
frequency ^a	5.00	1.00	3.00
cell chi-square ^b	1.40	1.40	.00
<u>Undercontrol</u>			
frequency	5.00	14.00	11.00
cell chi-square	2.41	1.38	.13
<u>Average</u>			
frequency	18.00	14.00	14.00
cell chi-square	.53	.18	.09

^aFrequency = number of subjects in each category.

^bCell Chi-Square = cell contribution to chi square.

Chi Square = 7.523.

Chi Square needed for significance at .05 level = 9.487.

Table 4. Analysis of the relationship between father and daughter behavioral categories as measured by Mann Inventory.

Female Students' Behavioral Categories	Fathers' Behavioral Categories		
	Overcontrol	Undercontrol	Average
<u>Overcontrol</u>			
frequency ^a	1.00	5.00	4.00
cell chi-square ^b	.90	.53	.00
<u>Undercontrol</u>			
frequency	4.00	8.00	9.00
cell chi-square	.30	.02	.09
<u>Average</u>			
frequency	13.00	13.00	15.00
cell chi-square	.74	.22	.06

^aFrequency = number of subjects in each category.

^bCell Chi-Square = cell contribution to chi square.

Chi Square = 2.857.

Chi Square needed for significance at .05 level = 9.487.

Table 5. Analysis of the relationship between mother and daughter behavioral categories as measured by Mann Inventory.

Female Students' Behavioral Categories	Mothers' Behavioral Categories		
	Overcontrol	Undercontrol	Average
<u>Overcontrol</u>			
frequency ^a	5.00	1.00	4.00
cell chi-square ^b	.11	.27	.00
<u>Undercontrol</u>			
frequency	11.00	5.00	5.00
cell chi-square	.42	.64	1.41
<u>Average</u>			
frequency	15.00	6.00	20.00
cell chi-square	.40	.10	.74

^aFrequency = number of subjects in each category.

^bCell Chi-Square = cell contribution to chi square.

Chi Square = 4.096.

Chi Square needed for significance at .05 level = 9.487.

of no significant relationship between behavioral categories of parents and students as measured by the Mann Inventory must be retained.

Relationship of Parents' Behavioral
Categories and Violation Record

The null hypothesis tested was:

H_{0_2} : There is no significant relationship between the behavioral categories as measured by the Mann Inventory and the violation-conviction record of parents.

The chi square test of significance was employed to show the relationship between the parents' behavioral categories and their accrued violation record.

The chi square value of 5.99 was needed to show significance (at the .05 level). The chi square values obtained were .864 for the male parent and .108 for the female parent.

Based on these findings as shown in Tables 6 and 7, the null hypothesis of no significant relationship existed between the behavioral categories as measured by the Mann Inventory and the violation-conviction records of both fathers and mothers must be retained.

Differences by Students' Behavioral
Categories and Violation Records

The null hypothesis tested was:

H_{0_3} : There is no significant relationship between the behavioral categories as measured by

Table 6. Analysis of the relationship between male parents' behavioral category as measured by Mann Inventory and their accrued violation record.

Male Parents' Behavioral Categories	Male Parents' Violation Records	
	No Violations	One or More Violations
<u>Overcontrol</u>		
frequency ^a	19.00	12.00
cell chi-square ^b	.18	.37
<u>Undercontrol</u>		
frequency	41.00	20.00
cell chi-square	.00	.00
<u>Average</u>		
frequency	46.00	19.00
cell chi-square	.10	.21

^aFrequency = number of subjects in each category.

^bCell Chi-Square = cell contribution to chi square.

Chi Square = .864.

Chi Square needed for significance at .05 level = 5.991.

the Mann Inventory and the violation-conviction records of students.

The chi square test of significance was administered to determine the relationship between behavioral categories and violation records of male and female students.

Table 7. Analysis of the relationship between female parents' behavioral category as measured by Mann Inventory and their accrued violation record.

Female Parents' Behavioral Categories	Female Parents' Violation Records	
	No Violations	One or more Violations
<u>Overcontrol</u>		
frequency ^a	48.00	11.00
cell chi-square ^b	.01	.04
<u>Undercontrol</u>		
frequency	33.00	8.00
cell chi-square	.00	.00
<u>Average</u>		
frequency	45.00	12.00
cell chi-square	.01	.05

^aFrequency = number of subjects in each category.

^bCell Chi-Square = cell contribution to chi square.

Chi Square = .108.

Chi Square needed for significance at .05 level = 5.991.

In order to demonstrate significant relationships a chi square value of 5.99 was required. For the male students, a chi square value of 4.32 was secured. A chi square value of .308 was obtained for the female students.

As indicated in Table 8 and 9, the chi square value was not significant; therefore the null hypothesis of no significant relationship between the behavioral categories as measured by the Mann Inventory and the violation-conviction records of students must be retained.

Table 8. Analysis of the relationship between male students' behavioral category as measured by Mann Inventory and their accrued violation record.

Male Students' Behavioral Categories	Male Students' Violation Records	
	No Violations	One or More Violations
<u>Overcontrol</u>		
frequency ^a	7.00	2.00
cell chi-square ^b	.07	.16
<u>Undercontrol</u>		
frequency	17.00	13.00
cell chi-square	.82	1.98
<u>Average</u>		
frequency	36.00	10.00
cell chi-square	.38	.92

^aFrequency = number of subjects in each category.

^bCell Chi-Square = cell contribution to chi square.

Chi Square = 4.329.

Chi Square needed for significance at .05 level = 5.991.

Table 9. Analysis of the relationship between female students' behavioral category as measured by Mann Inventory and their accrued violation record.

Female Students' Behavioral Categories	Female Students' Violation Records	
	No Violations	One or More Violations
<u>Overcontrol</u>		
frequency ^a	9.00	1.00
cell chi-square ^b	.01	.13
<u>Undercontrol</u>		
frequency	20.00	1.00
cell chi-square	.01	.14
<u>Average</u>		
frequency	38.00	3.00
cell chi-square	.00	.01

^aFrequency = number of subjects in each category.

^bCell Chi-Square = cell contribution to chi square.

Chi Square = .308.

Chi Square needed for significance at .05 level = 5.991.

Differences by Teachers' Rating of Students

The null hypothesis tested was:

Ho₄: There is no significant relationship between the driver educators' rating of students in behavioral categories and student behavior categories as measured by the Mann Inventory.

The chi square test of significance was employed to determine the relationship between the teachers' rating of students and the behavioral category as measured by the Mann Inventory.

A chi square value of 9.48 was needed to show significance at the .05 level. A chi square value of 47.413 was obtained for the male students. For the female students a chi square value of 24.78 was secured.

On the basis of the obtained value of chi square as presented in Tables 10 and 11, the null hypothesis of no significant relationship between the teachers' ratings of students in behavioral categories and students' behavioral categories as measured by the Mann Inventory must be rejected.

Differences by Teachers' Rating of
Students' and Parents' Behavioral
Categories as Measured by
Mann Inventory

The null hypothesis tested was:

Ho₅: There is no significant relationship between the driver educators' rating of students in behavioral categories and their parents' behavioral categories as measured by the Mann Inventory.

The statistical analysis used to determine the relationship between teachers' rating and behavioral categories of parents as measured by the Mann Inventory was the chi square test of significance.

Table 10. Analysis of the relationship between the teachers' rating of male students in behavioral categories and the male students' behavioral categories as measured by the Mann Inventory.

Male Students' Behavioral Categories	Teachers' Rating of Male Students		
	Overcontrol	Undercontrol	Average
<u>Overcontrol</u>			
frequency ^a	6.00	0.00	3.00
cell chi-square ^b	31.35	4.66	.07
<u>Undercontrol</u>			
frequency	0.00	23.00	7.00
cell chi-square	2.82	3.59	1.85
<u>Average</u>			
frequency	2.00	21.00	23.00
cell chi-square	1.25	.33	1.48

^aFrequency = number of subjects in each category.

^bCell Chi-Square = cell contribution to chi square.

Chi Square = 47.413.

Chi Square needed for significance at .05 level = 9.487.

Table 11. Analysis of the relationship between the teachers' rating of female students in behavioral categories and the female students' behavioral categories as measured by Mann Inventory.

Female Students' Behavioral Categories	Teachers' Rating of Female Students		
	Overcontrol	Undercontrol	Average
<u>Overcontrol</u>			
frequency ^a	4.00	0.00	6.00
cell chi-square ^b	4.91	2.36	.01
<u>Undercontrol</u>			
frequency	2.00	12.00	7.00
cell chi-square	.29	10.00	2.86
<u>Average</u>			
frequency	4.00	5.00	32.00
cell chi-square	.50	2.26	1.59

^aFrequency = number of subjects in each category.

^bCell Chi-Square = cell contribution to chi-square.

Chi Square = 24.780.

Chi Square needed for significance at .05 level = 9.487.

For the father and male youngster, a chi square of 9.48 was required to demonstrate a significant relationship at the .05 level. A chi square value of 3.20 was obtained. On the obtained value of chi square as presented in Table 12, the null hypothesis of no significant relationship between the driver educators' rating of male students in behavioral categories and fathers behavioral categories as measured by the Mann Inventory must be retained.

For the mother and male youngster, a chi square of 9.48 was needed to show significance at the .05 level. A chi square value of 12.74 was secured. On the basis of the obtained value of chi square as presented in Table 13, the null hypothesis of no significant relationship between driver educators' rating of male students in behavioral categories and mothers' behavioral categories as measured by the Mann Inventory must be rejected.

In respect to the female students and parents, a chi square of 9.48 was required to demonstrate a significant relationship at the .05 level. For the female student and father as shown in Table 14, a chi square value of 2.06 was obtained. In comparing the female student and mother, Table 15 shows a chi square value of 2.33. Therefore, the null hypothesis must be retained.

Table 12. Analysis of the relationship between the driver educators' rating of male students in behavioral categories and fathers' behavioral categories as measured by Mann Inventory.

Male Parent Behavioral Categories	Teachers' Rating of Male Students	
	Overcontrol	Undercontrol
<u>Overcontrol</u>		
frequency ^a	2.00	7.00
cell chi-square ^b	.49	.01
<u>Undercontrol</u>		
frequency	3.00	21.00
cell chi-square	.03	.46
<u>Average</u>		
frequency	3.00	16.00
cell chi-square	.07	.52

^aFrequency = number of subjects in each category.

^bCell Chi-Square = cell contribution to chi square.

Chi Square = 3.205.

Chi Square needed for significance at .05 level = 9.487.

Table 13. Analysis of the relationship between the driver educators' rating of male students in behavioral categories and mothers' behavioral categories as measured by Mann Inventory.

Female Parents Behavioral Categories	Teachers' Rating of Male Students		Average
	Overcontrol	Undercontrol	
<u>Overcontrol</u>			
frequency ^a	6.00	13.00	9.00
cell chi-square ^b	4.30	.15	.32
<u>Undercontrol</u>			
frequency	1.00	20.00	8.00
cell chi-square	1.10	1.66	.94
<u>Average</u>			
frequency	1.00	11.00	16.00
cell chi-square	1.01	.84	2.42

^aFrequency = number of subjects in each category.

^bCell Chi-Square = cell contribution to chi square.

Chi Square = 12.746.

Chi Square needed for significance at .05 level = 9.487.

Table 14. Analysis of the relationship between driver educators' rating of female students in behavioral categories and fathers' behavioral categories as measured by Mann Inventory.

Male Parents Behavioral Categories	Teachers' Rating of Female Students		
	Overcontrol	Undercontrol	Average
<u>Overcontrol</u>			
frequency ^a	2.00	5.00	11.00
cell chi-square ^b	.10	.13	.01
<u>Undercontrol</u>			
frequency	5.00	4.00	17.00
cell chi-square	.53	.75	.03
<u>Average</u>			
frequency	3.00	8.00	17.00
cell chi-square	.20	.29	.01

^aFrequency = number of subjects in each category.

^bCell Chi-Square = cell contribution to chi square.

Chi Square = 2.061.

Chi Square needed for significance at .05 level = 9.487.

Table 15. Analysis of the relationship between driver educators' rating of female students in behavioral categories and mothers' behavioral categories as measured by the Mann Inventory.

Female Parents' Behavioral Categories	Teachers' Rating of Female Students	
	Overcontrol	Undercontrol
<u>Overcontrol</u>		
frequency ^a	5.00	8.00
cell chi-square ^b	.11	.06
		.10
<u>Undercontrol</u>		
frequency	2.00	4.00
cell chi-square	.07	.48
		.30
<u>Average</u>		
frequency	3.00	5.00
		21.00
cell chi-square	.26	.50
		.46

^aFrequency = number of subjects in each category.

^bCell Chi-Square = cell contribution to chi square.

Chi Square = 2.337.

Chi Square needed for significance at .05 level = 9.487.

Differences by Students' Violation Records
and Parents' Violation Records

The null hypothesis tested was:

H_{06} : There is no significant relationship between the violation-conviction records of parents and students.

The chi square test of significance was used to determine the relationship between the violation records of students and parents.

In order to demonstrate a significant relationship at the .05 level a chi square value of 3.84 or more must be obtained. In comparing the violation-conviction records of male youngsters with their fathers and mothers' violation-conviction records, a chi square value of .24 and .13 respectively was revealed. For the female youngsters' violation-conviction records and parents' violation conviction records, the father/daughter chi square value was found to be .70 and the mother/daughter chi square value of .192 was obtained.

On the basis of the obtained values of chi square as shown in Tables 16, 17, 18 and 19, the null hypothesis of no significant relationship between parents' and youngsters' violation-conviction records must be retained.

Table 16. Analysis of the relationship between fathers' and sons' violation record.

Male Students' Violation Record	Fathers' Violation Record	
	No Violations	One or More Violations
<u>No Violations</u>		
frequency ^a	44.00	16.00
cell chi-square ^b	.02	.05
<u>One or More Violations</u>		
frequency	17.00	8.00
cell chi-square	.05	.13

^aFrequency = number of subjects in each category.

^bCell Chi-Square = cell contribution to chi square.
Chi Square = .248.
Chi Square needed for significance at .05 level = 3.841.

Relationship of Students' Score and
Parents' Score on the
Mann Inventory

The null hypothesis tested was:

Ho₇: There is no significant relationship between the parents' total score on the Mann Inventory and the students' total score on the Mann Inventory.

The Pearson Product Moment Coefficient was used to determine the relationship between the parents' total score and students' total score.

Table 17. Analysis of the relationship between mothers' and sons' violation record.

Male Students' Violation Record	Mothers' Violation Record	
	No Violations	One or More Violations
<u>No Violations</u>		
frequency ^a	51.00	9.00
cell chi-square ^b	.01	.03
<u>One or More Violations</u>		
frequency	22.00	3.00
cell chi-square	.01	.08

^aFrequency = number of subjects in each category.

^bCell Chi-Square = cell contribution to chi square.
Chi Square = .131.
Chi Square needed for significance at .05 level = 3.841.

For the male student, the critical value of .22 was needed to show significance. For the father-son and mother-son, a value of .117 and .192 respectively was attained. For the female students, the critical value of .23 was required to show significance. The father-daughter and mother-daughter, a value of .14 and .18 respectively was obtained.

On the basis of the obtained values of chi square as shown in Table 20, the null hypothesis of no

Table 18. Analysis of the relationship between fathers' and daughters' violation record.

Female Students' Violation Record	Fathers' Violation Record	
	No Violations	One or More Violations
<u>No Violations</u>		
frequency ^a	41.00	26.00
cell chi-square ^b	.02	.03
<u>One or More Violations</u>		
frequency	4.00	1.00
cell chi-square	.25	.41

^aFrequency = number of subjects in each category.

^bCell Chi-Square = cell contribution to chi square.
Chi Square = .702
Chi Square needed for significance at .05 level = 3.841.

significant relationship between the parents' total score on the Mann Inventory and the students' total score on the Mann Inventory must be retained.

Summary of Findings

Statistical analysis of the data revealed:

1. The following showed significant relationships at the .05 level.

Table 19. Analysis of the relationship between mothers' and daughters' violation records.

Female Students' Violation Record	Mothers' Violation Record	
	No Violations	One or More Violations
<u>No Violations</u>		
frequency ^a	48.00	19.00
cell chi-square ^b	.04	.10
<u>One or More Violations</u>		
frequency	5.00	0.00
cell chi-square	.47	1.32

^aFrequency = number of subjects in each category.

^bCell Chi-Square = cell contribution to chi square.
Chi Square = 1.926.
Chi Square needed for significance at .05 level = 3.841.

- (a) Driver education teachers' rating of students in behavioral categories and the students' behavioral category as measured by the Mann Inventory.
 - (b) Male students' behavioral categories as rated by the driver education teachers and mothers' behavior categories as measured by the Mann Inventory.
2. The following did not show significant relationships at the .05 level.
- (a) Male students behavioral categories as measured by the Mann Inventory and fathers' behavioral categories as measured by the Mann Inventory.

Table 20. Analysis of the relationship between students' total scores on the Mann Inventory and parents' total scores on the Mann Inventory.

Students and Parents	Correlation Value Needed at .05 Alpha Level	Correlation Value Obtained	Decision
Male Students and Fathers	.22	.117	NS*
Male Students and Mothers	.22	.192	NS
Female Students and Fathers	.231	.142	NS
Female Students and Mothers	.231	.187	NS

*NS = No Significance.

- (b) Female students' behavioral categories as measured by the Mann Inventory and parents' behavioral categories as measured by the Mann Inventory.
- (c) Parents' behavioral categories as measured by the Mann Inventory and parents' violation record.
- (d) Both male and female students' behavioral categories as measured by the Mann Inventory and students' violation records.
- (e) Driver education teachers' ratings of male students in behavioral categories and fathers' behavioral categories as measured by the Mann Inventory.
- (f) Driver education teachers' ratings of female students in behavioral categories and parents' behavioral categories as measured by the Mann Inventory.
- (g) Students' violation record and parents' violation record.
- (h) Students' total score on the Mann Inventory and parents' total score on the Mann Inventory.

CHAPTER V

SUMMARY, CONCLUSIONS, DISCUSSION AND RECOMMENDATIONS

The concluding chapter of this investigation will consider (1) summations of the relationship studied in this research, including both method and findings, (2) conclusions which the data warrant, (3) discussion of factors which may have contributed to the findings obtained in the study, and (4) recommendations for further research.

Summary

The primary purpose of this study was to determine the relationship between the scores of students on the Mann Inventory and the scores of their respective parents on the same measure.

A second purpose of this investigation was to determine if there is a relationship between parents' violation records and students' violation records.

The sample population of this study consisted of 157 students of three selected high schools and their

parents. The data was collected between January 14, 1972 and March 25, 1972.

The subjects all lived within a fifty mile radius of Lansing, Michigan, and were representative of the socio-economic, ethnic, and cultural group found in that area. This area has many large industries, the state capitol, many governmental agencies, Michigan State University and Lansing Community College.

The majority of students who were asked consented to participate in the study. The Mann Inventory and the reason for its use were explained. After completing the inventory, the students were given a self-addressed envelope containing two answer sheets, one Mann Inventory and a letter to their parents. Of the 379 students who participated, 157 sets of parents responded.

Hypotheses one through six were tested by using the chi square test of significance.

The seventh hypothesis was tested by using the Pearson Product Moment Coefficient.

Conclusions

The following are the conclusions based upon the findings from this investigation:

1. The Mann Inventory and teachers' rating can be used to classify students in behavioral

categories because of certain personality characteristics the students possess.

2. Students and their parents are not placed into the same behavioral categories. This lack of category relationship is also shown in the lack of relationship between the students' and their parents' violation-conviction record.

Discussion

The major purpose of this study was to determine if parents and students fall into the same behavioral categories as determined by the Mann Inventory. The behavioral categories were established as overcontrolled, undercontrolled, and average behaviors.

The results shown from the data indicated that a significant number of high school students do not fall into the same behavioral categories as their parents. The writer is well aware that there could be a number of reasons for these results. The Mann Inventory may not be appropriate for selecting behavioral categories for parents. Parents' behavior may not be as influential on high school students as the students' peer groups. This could come from the time involvement with student-parent and student-peer groups. The latter groups spend more time together. Students' behavior may be the outcome of

resentment toward their parents' behavior. This resentment may influence the students' behavioral actions to go in the opposite direction than their parents.

The findings of this study also substantiate results of other investigations which employed the Mann Inventory. The Mann Inventory and teachers' ratings were able to place the students into the same behavioral categories with consistency. This type of information could be important not only for driver education classes but for other subjects where the identification of students with special problems is desired for the success of the group.

It is noteworthy to mention that the driver education teachers' ratings of female students were not as accurate as their rating of male students. The possible explanation for differences in accuracy may be found in the personality of the male driver education teachers. Dr. William Covert⁴⁷ found in a study that driver education teachers were not able to place female students in behavioral categories as well as they placed male students into the behavioral categories. Covert postulates that male raters may be biased when they observe the behavior of the female students. Female students' behavior may be altered in the presence of a male teacher.

⁴⁷Covert, op. cit.

It was interesting to note that teachers' ratings of male students into behavioral categories indicated that a significant relationship existed with the mothers' behavioral categories. This relationship may tend to show that carry-over influence of mothers in early childhood may be stronger with boys than with girls. This influence is substantiated by studies done by Winder and Rau⁴⁸ where there was shown with consistency that mothers' attitudes are more influential of the sons' behavior than that of the fathers'.

Another area which must be considered is the parents who did not respond. In all probability, the non-response might have been the undercontrolled persons. This lack of response may have had an influence upon the significance of the parent-child relationships within the behavioral categories.

One observation of the data which is interesting and should be mentioned is that no identical scores on the Mann Inventory were received from any one set of parents.

This is the first study of its kind to show no significance between the students' behavioral categories as measured by the Mann Inventory and violation-conviction records. It is reasoned by the writer that the time

⁴⁸Winder and Rau, op. cit., pp. 107-118.

period involved for accumulating traffic violations could be the reason for the finding of no relationship.

The findings of the study may apply only to the sample population.

In conclusion, driver education teachers need to use every available method in helping to develop young, safe drivers. Parental involvement may not be the best method because of differences in personality characteristics.

Recommendations

1. An identical study conducted in different geographic regions to ascertain if there is any relationship between parent and student behavior.
2. A study to ascertain how much influence peer groups and sub-peer groups have over high school age students.
3. A study to develop a personality inventory for adults in conjunction with the Mann Inventory.
4. A study to ascertain whether students' scores on the Mann Inventory correlate with the particular students' peer groups.

5. A study to determine what would be the best methods for teaching students in the three behavioral categories.

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APPENDIX A

THE STUDENT INFORMATION SHEET

No. _____

PLEASE PRINT

Name _____
Last First Middle

Address _____
Street City

Birthdate _____
Month Day Year

Date completed driver education _____
Month Year

Date received driver's license _____
Month Year

Driver's license No. _____

CIRCLE ONE

Do you drive: Every day? Every other day?
Once or twice a week? Never?

Both parents living at home? Yes No

Parents deceased? One Both None

Parents separated? Yes No

Parents divorced? Yes No

One or both parents usually at home during evening?
Yes No

Father's name _____ Does he drive? Yes No
Last First Middle

Mother's name _____ Does she drive? Yes No
Last First Middle

APPENDIX B

**THE MANN INVENTORY AND RESPONSE
SHEET FOR STUDENTS**

PERSONAL ATTITUDE SURVEY

The following statements reflect your attitude and feelings about yourself and your relations to others. There are no right or wrong answers. Fill in on the answer sheet the answer that reflects your feelings the best.

Do not mark on the test booklet:

- A. always B. usually C. sometimes D. rarely E. never
1. I like (liked) to take part in organized extra-curricular activities in school.
 2. Young people are much better drivers than middle-aged people.
 3. Policemen are sincere in enforcing the laws.
 4. My parents are reasonable in their relations with me.
 5. My community is a happy place to live.
 6. I put off until tomorrow things I should do today.
 7. I like to daydream while I am driving.
 8. I feel full of pep when I get behind the wheel.
 9. I live in a home that is happy.
 10. If I see a police officer when I am driving I am more careful.
 11. Over-careful drivers cause more accidents than the so-called reckless ones.
 12. I enjoy being out late at night and sleeping mornings.
 13. I get a feeling of real power when driving a car.
 14. Courses in school are set up to meet the needs and interests of the student.

15. I am concerned about the way my clothes look.
16. Slow drivers should be kept off the highways.
17. All young people should be required to take a course in driver education.
18. Unsafe drivers should be deprived of the right to drive.
19. Accidents don't just happen; they are caused.
20. I like to get everything out of a car that it has in it.
21. The chief work of most policemen should be traffic control.
22. My parents exert too much control over me.
23. The people in my community want the traffic laws enforced.
24. I have been tempted to cheat on a test at school.
25. I get impatient when driving in heavy traffic.
26. There are times when it seems like everyone is against me.
27. Old, defective cars should be kept off the road.
28. Drivers should be given more freedom in obeying traffic signs.
29. People should drive when they are angry.
30. Passing on hills and curves is exceedingly dangerous.
31. It is necessary to stop at "stop" signs if no other cars are in sight.
32. I like to put extras on my car to attract attention.
33. I am good at talking the police out of giving me a traffic ticket.
34. Strong discipline in practice makes a better team.
35. I am (was) popular with most of the kids in my class.

36. Cops are rougher on teen-agers than on adults.
37. Teachers want to help students with their problems.
38. My father gets traffic tickets for moving violations.
39. I have as good table manners at home as when I eat out.
40. I have been wrong in an argument but wouldn't admit it to my opponent.
41. The school should have the right to question the way I drive.
42. I like to razz the team when it is losing.
43. I am proud of my reputation in the community.
44. I am considered a friendly person.
45. I like most of my school work.
46. Our family spends a great deal of time together.
47. Attitudes toward driving are more important than ability to handle the car.
48. I like to take chances when I'm driving.
49. Traffic laws are set up to promote safety.
50. Courtesy toward other drivers is important.
51. I like a great deal of freedom.
52. I don't mind being told what to do.
53. My grades in school are (were) a good indication of my ability.
54. I sometimes become concerned about what other people think of me.
55. I find that older people tend to be too bossy.
56. I feel somewhat nervous when I drive a car.
57. I think courtesy towards others is a good reflection of a person's character.

- 58. I get more fun out of driving a car than in any other activity.
- 59. The police are only trying to do the job for which they were hired.
- 60. My folks insist that I spend most week-day evenings at home.
- 61. I am considered a reliable person.
- 62. I like to help a person who is in trouble.
- 63. I am more courteous than the average driver.

No. _____

PERSONAL ATTITUDE SURVEY
ANSWER SHEET

A.	always	B.	usually	C.	sometimes	D.	rarely	E.	never		
	A	B	C	D	E		A	B	C	D	E
1.	()	()	()	()	()	22.	()	()	()	()	()
2.	()	()	()	()	()	23.	()	()	()	()	()
3.	()	()	()	()	()	24.	()	()	()	()	()
4.	()	()	()	()	()	25.	()	()	()	()	()
5.	()	()	()	()	()	26.	()	()	()	()	()
6.	()	()	()	()	()	27.	()	()	()	()	()
7.	()	()	()	()	()	28.	()	()	()	()	()
8.	()	()	()	()	()	29.	()	()	()	()	()
9.	()	()	()	()	()	30.	()	()	()	()	()
10.	()	()	()	()	()	31.	()	()	()	()	()
11.	()	()	()	()	()	32.	()	()	()	()	()
12.	()	()	()	()	()	33.	()	()	()	()	()
13.	()	()	()	()	()	34.	()	()	()	()	()
14.	()	()	()	()	()	35.	()	()	()	()	()
15.	()	()	()	()	()	36.	()	()	()	()	()
16.	()	()	()	()	()	37.	()	()	()	()	()
17.	()	()	()	()	()	38.	()	()	()	()	()
18.	()	()	()	()	()	39.	()	()	()	()	()
19.	()	()	()	()	()	40.	()	()	()	()	()
20.	()	()	()	()	()	41.	()	()	()	()	()
21.	()	()	()	()	()	42.	()	()	()	()	()
						43.	()	()	()	()	()
						44.	()	()	()	()	()
						45.	()	()	()	()	()
						46.	()	()	()	()	()
						47.	()	()	()	()	()
						48.	()	()	()	()	()
						49.	()	()	()	()	()
						50.	()	()	()	()	()
						51.	()	()	()	()	()
						52.	()	()	()	()	()
						53.	()	()	()	()	()
						54.	()	()	()	()	()
						55.	()	()	()	()	()
						56.	()	()	()	()	()
						57.	()	()	()	()	()
						58.	()	()	()	()	()
						59.	()	()	()	()	()
						60.	()	()	()	()	()
						61.	()	()	()	()	()
						62.	()	()	()	()	()
						63.	()	()	()	()	()

APPENDIX C

THE LETTER OF EXPLANATION TO PARENTS

P.O. Box 1298
East Lansing, Michigan 48823
January 5, 1972

Dear Parents:

Driver behavior of our young people is in great need of research. It is felt by many educators that unless we can determine why they act and drive in the manner they do, their knowledge and physical ability as a driver is of little value.

It is hoped that through this research project in which your child has just participated we can gain some basic knowledge of why they drive the way they do. In order for us to complete the project, we must obtain your cooperation as parents.

The information you give us in the next 10 to 20 minutes on the enclosed questionnaire will be held in strict confidence.

For this study to be meaningful, each parent is asked not to compare answers. After you have completed the questionnaire, please mail the questionnaire and answer sheets in the self-addressed, stamped envelope as soon as possible.

The results of this research will be made available at the high school for all interested parents.

Thank you for your participation in this important driver education research project.

Sincerely,

William A. Browne
Graduate Student
Highway Traffic Safety Center
Michigan State University

Principal

APPENDIX D

**THE MANN INVENTORY AND RESPONSE
SHEET FOR PARENTS**

PERSONAL ATTITUDE SURVEY

The following statements reflect your attitude and feelings about yourself and your relations to others. There are no right or wrong answers. Fill in on the answer sheet the answer that reflects your feelings the best.

Do not mark on the test booklet.

A. always B. usually C. sometimes D. rarely E. never

1. I liked to take part in organized extra-curricular activities in school.
2. Young people are much better drivers than middle-aged people.
3. Policemen are sincere in enforcing the laws.
4. My parents were reasonable in their relations with me.
5. My community is a happy place to live.
6. I put off until tomorrow things I should do today.
7. I like to daydream while I am driving.
8. I feel full of pep when I get behind the wheel.
9. I live in a home that is happy.
10. If I see a police officer when I am driving I am more careful.
11. Over-careful drivers cause more accidents than the so-called reckless ones.
12. I enjoy being out late at night and sleeping mornings.
13. I get a feeling of real power when driving a car.
14. Courses in school were set up to meet the needs and interests of the student.
15. I am concerned about the way my clothes look.
16. Slow drivers should be kept off the highways.
17. All drivers should be required to take a course in driver education.

18. Unsafe drivers should be deprived of the right to drive.
19. Accidents don't just happen; they are caused.
20. I like to get everything out of a car that it has in it.
21. The chief work of most policemen should be traffic control.
22. My parents exerted too much control over me.
23. The people in my community want the traffic laws enforced.
24. I have been tempted to cheat on a test at school.
25. I get impatient when driving in heavy traffic.
26. There are times when it seems like everyone is against me.
27. Old, defective cars should be kept off the roads.
28. Drivers should be given more freedom in obeying traffic signs.
29. People should drive when they are angry.
30. Passing on hills and curves is exceedingly dangerous.
31. It is necessary to stop at "stop" signs if no other cars are in sight.
32. I like to put extras on my car to attract attention.
33. I am good at talking my way out of trouble.
34. Strong discipline in practice makes a better team.
35. I am popular with most of my acquaintances.
36. Cops are rougher on teen-agers than on adults.
37. My supervisors want to help me with my problems.
38. I get traffic tickets for moving violations.
39. I have as good table manners at home as when I eat out.

40. I have been wrong in an argument but wouldn't admit it to my opponent.
41. The state should have the right to question the way I drive.
42. I like to razz a team when it is losing.
43. I am proud of my reputation in the community.
44. I am considered a friendly person.
45. I like most of my work.
46. Our family spends a great deal of time together.
47. Attitudes toward driving are more important than ability to handle the car.
48. I like to take chances when I'm driving.
49. Traffic laws are set up to promote safety.
50. Courtesy toward other drivers is important.
51. I like a great deal of freedom.
52. I don't mind being told what to do.
53. My performance at work is a good indication of my ability.
54. I sometimes become concerned about what other people think of me.
55. I find that older people tend to be too bossy.
56. I feel somewhat nervous when I drive a car.
57. I think courtesy towards others is a good reflection of a person's character.
58. I get more fun out of driving a car than in any other activity.
59. The police are only trying to do the job for which they were hired.
60. I spend most week-day evenings at home, when I am not working.

- 61. I am considered a reliable person.
- 62. I like to help a person who is in trouble.
- 63. I am more courteous than the average driver.

CIRCLE ONE

No. _____

Male Female

Drivers License

PERSONAL ATTITUDE SURVEY

Yes No

ANSWER SHEET

Birthday: Month _____
Day _____ Year _____

A. always B. usually C. sometimes D. rarely E. never

- | A | B | C | D | E | A | B | C | D | E | A | B | C | D | E | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 1. | () | () | () | () | () | 22. | () | () | () | () | () | 43. | () | () | () | () | () |
| 2. | () | () | () | () | () | 23. | () | () | () | () | () | 44. | () | () | () | () | () |
| 3. | () | () | () | () | () | 24. | () | () | () | () | () | 45. | () | () | () | () | () |
| 4. | () | () | () | () | () | 25. | () | () | () | () | () | 46. | () | () | () | () | () |
| 5. | () | () | () | () | () | 26. | () | () | () | () | () | 47. | () | () | () | () | () |
| 6. | () | () | () | () | () | 27. | () | () | () | () | () | 48. | () | () | () | () | () |
| 7. | () | () | () | () | () | 28. | () | () | () | () | () | 49. | () | () | () | () | () |
| 8. | () | () | () | () | () | 29. | () | () | () | () | () | 50. | () | () | () | () | () |
| 9. | () | () | () | () | () | 30. | () | () | () | () | () | 51. | () | () | () | () | () |
| 10. | () | () | () | () | () | 31. | () | () | () | () | () | 52. | () | () | () | () | () |
| 11. | () | () | () | () | () | 32. | () | () | () | () | () | 53. | () | () | () | () | () |
| 12. | () | () | () | () | () | 33. | () | () | () | () | () | 54. | () | () | () | () | () |
| 13. | () | () | () | () | () | 34. | () | () | () | () | () | 55. | () | () | () | () | () |
| 14. | () | () | () | () | () | 35. | () | () | () | () | () | 56. | () | () | () | () | () |
| 15. | () | () | () | () | () | 36. | () | () | () | () | () | 57. | () | () | () | () | () |
| 16. | () | () | () | () | () | 37. | () | () | () | () | () | 58. | () | () | () | () | () |
| 17. | () | () | () | () | () | 38. | () | () | () | () | () | 59. | () | () | () | () | () |
| 18. | () | () | () | () | () | 39. | () | () | () | () | () | 60. | () | () | () | () | () |
| 19. | () | () | () | () | () | 40. | () | () | () | () | () | 61. | () | () | () | () | () |
| 20. | () | () | () | () | () | 41. | () | () | () | () | () | 62. | () | () | () | () | () |
| 21. | () | () | () | () | () | 42. | () | () | () | () | () | 63. | () | () | () | () | () |

APPENDIX E

**BEHAVIOR DESCRIPTIONS AND
RATER INSTRUCTIONS**

BEHAVIOR DESCRIPTIONS AND
RATER INSTRUCTIONS

Under-Controlled

General: Behavior characterized by forceful, outgoing action or vigorous efforts to assert oneself over others, with little consideration of the results.

Specific in the driver education context:

1. Will try any skill with no fear of making a mistake or failure.
2. Will attempt to answer any question--hand always up in responding to an oral question.
3. Will attempt to argue and bargain to keep ahead.
4. Will do wrong or doubtful act, then may ask about doing it.
5. Will be trying to communicate much more than expected.
6. Will try many activities before told to do so, or before full instructions given.
7. Will insist or demand all that he or she feels is due--with no concern for the feelings of others involved.
8. Will seem to be cool and calm most of the time.
9. Will be impulsively lively, gay and enthusiastic on occasion.
10. Will wish to drive much more and try any new experience.

Over-Controlled

General: Behavior characterized by withdrawal from communication with other persons with efforts to have everything under control so that they cannot be criticized by others.

Specific in the driver education context:

1. Will try a skill after deliberation and full understanding--then only hesitatingly.
2. Will not attempt to answer question if not sure with fear of being wrong in peer group.
3. Will accept what is said by instructor or peer and will very rarely argue for a point.
4. Will ask about a task coming up, then when understood, will try it.
5. Will communicate when he feels it absolutely necessary.
6. Will not move into any activity until told or given permission to do so.
7. Will not demand or assert rights, but will accept what is offered.
8. Will be upset and exhibit anxiety rather often.
9. Will be sober, prudent and serious.
10. Will not readily volunteer for more driving or new experience without first considering them very carefully.

Average

General: Behavior characterized by well-adjusted interaction with persons and consistent with the mores of the society in which the individual functions within the educational institution norms, with the absence of tendencies toward extremes in personality.

Instructions for Rating Student Behavior:

Please be mindful to descriptive items while you have interacted with the student in the classroom or outside activities, in an informal or formal setting.

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