DOCUMENT RESUME

ED 314 419 SP 031 938

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TITLE Perceptions, Attitudes, Motivations, and Behaviors of Drivers 18 to 22 Years Old.
INSTITUTION AAA Foundation for Traffic Safety, Washington, DC.
PUB DATE 87
NOTE 168p.
AVAILABLE FROM AAA Foundation for Traffic Safety, 1730 M St. NW, Washington, DC 20036 (first copy free, $2.00 thereafter).
PUB TYPE Reports - Research/Technical (143)

EDRS PRICE MF01 Plus Postage. PC Not Available from EDRS.
DESCRIPTORS Adolescents; Drinking; Driver Education; Drug Use; *Emotional Problems; Personality Traits; Recreational Activities; *Student Attitudes; *Student Behavior; Traffic Accidents; *Traffic Safety; *Youth Problems

ABSTRACT

Young people are open to traffic accidents because of their age, their attitude, their lack of experience, and their tendency for risk-taking. This study sought an answer to the question of what are the perceptions, attitudes, feelings, and self-reported behaviors of young people that lead to traffic safety problems and/or interfere with their solutions. The investigators conducted focus group discussions, and administered a semantic differential instrument and a data sheet on driving to 316 young drivers selected from the target population. The data from this research are presented on tables with accompanying narrative discussion, which identifies and analyzes specific problems revealed by the responses of participants. Results indicated a wide range of individual differences, and many unsafe driving practices appear to be rooted in emotional rather than cognitive causes. Driving while under the influence of drugs or alcohol appeared to carry little stigma with young people. It is suggested that driver improvement programs should be approached from the perspective of the young drivers themselves, including: (1) focusing on their values and goals; (2) recognizing the possible social attractiveness of unsafe driving; (3) identifying and dealing with the emotional causes of unsafe driving; and (4) assisting young people to find ways other than unsafe driving to achieve their personal goals. Instruments used in the survey are appended. (JD)

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BACKGROUND AND ACKNOWLEDGMENTS

Young drivers are disproportionately involved in traffic accidents and fatalities. In addressing this problem, the authors sought young drivers themselves as a resource for identifying their special traffic safety problems and for seeking solutions to them. The study went through a series of developmental stages culminating in the administration of a data collection packet to 316 participants, 18-22 years old in nine cities across the United States and two in Canada.

Developmental Stage

After reviewing the pertinent literature, the investigators determined that the semantic differential technique, focus group discussions, and a short survey form on driving behavior, would be three complementary ways to study the behavior and attitudes of young drivers. The semantic differential (SD) instrument was developed by the investigators with assistance from Mr. Sam Yaksich, Jr., Executive Director of the AAA Foundation for Traffic Safety, and nine graduate students familiar with the SD technique. The investigators developed the focus group and survey procedures to suit the requirements of the study.

A pilot study using all data collection forms was conducted at Bronx Community College and York College, both part of the City University of New York (CUNY), to test the practicability of the data collection plan. We very much appreciate the assistance of the two educators who made the necessary arrangements:

Prof. Ann Kelemen
Health & Physical Education Dept.
Bronx Community College, CUNY

Prof. Darlene Yee
Gerontology and Health Education Dept.
York College, CUNY

The pilot study results assured the investigators that, with minor revisions, the data collection instruments--the SD, Focus Group Discussion Guide, and Data Sheet on Driving (DSD)--were adequate for study purposes and ready for application in the field.

Field Study

The field study consisted of focus group discussions with young drivers and the administration of the SD and DSD instruments. Many people contributed to this phase. We are especially grateful for the support and assistance of Mr. Sam Yaksich, Jr., in coordinating data collection with the administrators of nine auto clubs in the United States and two in

Canada. These automobile clubs, their personnel and contacts in the community made this study possible.

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We are also indebted to Dr. Richard H. Lindeman, Professor Emeritus of Teachers College, Columbia University, for his assistance in planning and conducting the statistical analysis of the study.

We deeply appreciate the enthusiastic cooperation of the more than three hundred young drivers who participated in this study. They gave liberally of their time and efforts to explore and find solutions for the problems experienced by drivers of their age group.

Finally, we thank the AAA Foundation for Traffic Safety for the financial and logistical support which made this study possible.

Perceptions, Attitudes, Motivations, and Behaviors of Drivers 18 to 22 Years Old

INTRODUCTION

It is said again and again that motor vehicle accidents are responsible for more than 40% of all deaths of people 16-22 years of age (Baker, O'Neill, & Karpf, 1984). Even so, three-quarters of 1,500 high school students in a 1983 survey stated that automobiles were an important part of their lives (George, 1984). Yaksich (1982, p. 8) explains part of the reason for the reconciliation between high risk and need in the use of automobiles by young drivers:

> We are a mobile society that depends upon private transportation for our existence. We have no public transportation for the vast majority of our people. We live in suburban and semi-rural areas to provide better lives for our children. At the same time we create a greater need for young people to have mobility. We've consolidated our schools, thus requiring some form of private transportation for young people to engage in school and recreational activities. Those who would propose public policies to make parents do more carting of young people...have lost sight of reality.

Furthermore, the increasing number of dual-career and single-parent families under more and more pressure to develop self-reliance in the young (McDonald, 1979)--including driving at an early age--has contributed to concern for the conflict to which young people are subject between the hazards and benefits of driving.

Mausner and Bahn (1974) point out that the personal risk factors associated with motor vehicle accidents are youth and lack of driving experience. Personality characteristics such as risk-taking tendencies and antisocial behavior also play a role. The period of adolescence, which has been defined as beginning at age 10 to 12 years and ending at 18 to 20 and even beyond (Jessor, 1984), is marked by rapid change, and described as a "relatively high-risk stage of life" (Jessor, 1984, p. 73).

Some of the risks of adolescence include experimentation with drugs, sex, and fast driving. Many of the risks jeopardize the health of the individual and others. This type of behavior generally elicits the disapproval of parents, friends, and society, and even leads to self-rejection. Why would a young person invite all this adversity?

> A beginning answer can come from an understanding of the important personal meanings, symbolic significance, and

> psychological functions that such behaviors can serve for adolescents. Rather than being arbitrary or fortuitous or reflecting some kind of youthful perversity, risk behaviors--like all learned behavior--are purposive, goal-directed, and capable of fulfilling multiple goals that are central to adolescent life. The goals these behaviors can attain and the meanings they may represent are not, of course, intrinsic to the behaviors but depend on larger processes of sociocultural definition and on an adolescent's unique learning and socialization experience. (Jessor, 1984, p. 78)

Risk-taking behavior might serve the young person's need to assert independence from parental control, to express opposition to adult authority, or to have a handy coping mechanism for anxiety, frustration, and failure. For some it may be a means of identification with a peer group and acceptance by that group, or simply a way to overcome boredom.

The vulnerabilities of late adolescence, the high motor vehicle accident rate of the young, and the pressures to take responsibility for one's self in a complex and highly mobile society create factors that require serious consideration. Two major approaches have been evident in addressing the problems. One is through restrictive regulation calling for curfews and increasing the age of eligibility for licensure (Insurance Institute for Highway Safety, 1981); the other is through education.

In fairness to young people and their families, expedient solutions and restrictive strategies which attempt to address the safety needs of youth while denying their economic, social, and educational needs should be scrutinized. From theoretical and philosophical perspectives, an enlightened democratic society seeks to define privileges and responsibilities of its members in the spirit of protecting freedom to the fullest extent possible. Yet it is evident that something needs to be done to lower the accident rate of young people. It is not enough to be against a suggested approach to solving a problem unless there are reasons to believe that another approach will work better.

One promising approach is through that aspect of social learning theory which supports the idea of enlisting young drivers themselves in identifying and practicing ways to cope effectively with the responsibilities of driving. As Bandura (1977, p. 13) states:

> By arranging environmental inducements, generating cognitive supports, and producing consequences for their own actions, people are able to exercise some measure of control over their own behavior.

It is within this framework of social learning theory that the investigators studied carefully selected aspects of the traffic safety problems of young drivers.

Young people are open to accidents because of their age, their attitude, their lack of experience, and their tendency for risk-taking. Feelings also have been found to be important predisposing factors in the actions that people take (Green, Kreuter, Deeds, & Partridge, 1980). Sometimes feelings that we are not fully aware of create problems or constitute obstacles to solutions. In exploring such predisposing factors, this study sought an answer to the following general question: What are the perceptions, attitudes, feelings, and self-reported behaviors of young people that may lead to traffic safety problems or interfere with solutions?

METHODS AND PROCEDURES

To answer the above question, the investigators conducted focus group (FG) discussions, and administered a semantic differential (SD) instrument and a data sheet on driving (DSD) to 316 young drivers selected from the target population.

Sample and Sampling Procedures

The population studied was licensed drivers 18-22 years of age. Although the investigators usually define young drivers as those 16 to 25, the characteristics and life situations of this group vary to such a great extent that it seemed impractical to include the entire age group within the scope of one study. The target group, therefore, was narrowed to ages 18 to 22. There were several specific reasons for this choice:

1. There is more similarity in developmental characteristics and tasks--e.g., establishment of autonomy and separation from family, completion of education, and choice of occupation--among 18-22-year olds than among 16-25-year olds; thus age-specific factors are likely to play less of a confounding role in some of the planned analyses.

2. This group has not been studied as extensively as still younger groups, especially those ages 16 and 17 years.

3. The research techniques employed are more appropriate to the verbal skills of 18-22-year olds than to those of younger drivers.

4. Eighteen-to-22-year olds are accessible in a variety of group settings--colleges, armed forces, work places, etc.--more than they are at a later age.

5. It is during this period that young drivers reach the legal drinking age (in most states), and alcohol is a major factor in their accidents.

The sample for the study was recruited primarily by local American Automobile Association (AAA) and Canadian Automobile Association (CAA) Clubs, in combination with the AAA Foundation for Traffic Safety. The cooperating sites included Norfolk, VA, Tulsa, OK, Los Angeles, CA, Sacramento, CA, New York, Phoenix, AZ, Seattle, WA, St. Louis, MO, and Des Moines, IA, in the United States; and Hamilton, Ontario, and Edmonton, Alberta in Canada. Although the participants constituted a convenience sample, a broadly representative cross section of young people was sought by including male and female two-year and four-year college students, members of the armed forces, worksite groups and, whenever possible, the unemployed. A final sample of 316 participants was obtained (Table 1, page 19).

Data Collection Instruments

Data were collected on the basis of focus group (FG) discussions, a semantic differential (SD) word-rating form, and a data sheet on driving (DSD). The FG discussion was designed to elicit from young drivers a description of their needs and problems as they saw them and their own suggestions for solutions. The SD was planned to measure attitudes about driving and life in general. The purpose of the DSD was to collect demographic information describing the sample, measure self-perceived driving safety performance, and safety-related driving practices.

A discussion follows of the history of the FG, SD, and DSD, as they pertain to data collection and analysis.

Focus Group (FG)

The focus group interview is a qualitative research technique used to obtain data on the feelings and opinions of small groups of participants about a given problem, experience, service or other phenomenon (Calder, 1977; Bellenger, Bernhardt, & Goldstucker, 1976). Input obtained from participants is not intended to reflect how strongly these feelings or opinions are held (Merton, Fiske, & Kendall, 1956). That would require a quantitative approach in which strength of conviction is specifically measured (and which is sometimes undertaken as a follow-up). Non-probability, purposive sampling is used most frequently, and findings are not generalized to larger groups.

Focus group discussions have been used primarily in business for marketing research--e.g., to develop and evaluate new products; to analyze a target audience's wishes, views, problems, fears, beliefs, vocabulary, defense mechanisms; and to shape communications in advertising campaigns (Keown, 1983; Fern, 1982; McDaniel, 1979; Alder, 1983; Egbert, 1983; Smith, 1984).

Several recent applications of focus group discussions demonstrate their utility for health education research, program planning, and

formative and summative evaluation (Manoff, 1985; Flexner, Littlefield, & McLaughlin, 1977; Gerghy, 1980; Folch-Lyon, Macorra, & Shearer, 1981; Suyono, Piet, Stirling, & Ross, 1981; Heimann-Ratain, Hanson, & Peregoy, 1985; Kisker, 1985).

The moderator plays a key role in the conduct of the focus group (Zemke & Kramlinger, 1985; Higginbotham & Cox, 1979; Folch-Lyon & Trost, 1981). Even though there is a prepared outline of topics, in a sense the moderator is the instrument for turning people "on or off." Among the many tasks the moderator must assume responsibility for are:

-- creating a non-threatening, supportive climate that encourages all group members to express their views;

-- facilitating interaction among group members;

-- interjecting probing comments, transitional questions, and summaries without interfering too brusquely with dialogue among participants;

-- covering important topics in the outline while relying on judgment to abandon some aspects of the outline and pursue other lines that seem more revealing;

-- presenting questions in an unbiased way and being sensitive to possible effects of vocal inclinations, facial expressions, and other non-verbal behavior;

-- remaining impartial;

-- encouraging involvement, which may require drawing out shy participants and politely directing attention away from dominating participants;

-- determining what group members think about ideas or feelings expressed by others; and

-- recording key insights immediately following the session.

Often the moderator plays a key role in developing the outline of topics and questions, analyzing and interpreting results, drawing conclusions and implications, and preparing a written report.

If the respondents are openly to share their opinions, considerable attention must be given to both the physical setting and the psychological climate (Zemke & Kramlinger, 1985; Bellenger, Bernhardt, & Goldstucker, 1976). The focus group should be conducted in a setting conducive to establishing a comfortable and intimate climate for respondents; this, of course, may vary, depending on their background. The moderator is responsible for maintaining a temperate psychological climate throughout the session. The moderator should be nonjudgmental, and communicate to

each respondent that his or her contribution is appreciated, and should explain clearly what information is sought from group members. When complicated issues are presented, the overall reasoning behind the project should be made clear and the goals restated briefly.

The promotion of freedom of expression in an atmosphere of respect and trust will improve the chances for obtaining useful information. Groups can be composed in a way that will help participants get along with each other and find the interaction a pleasant experience--and "let themselves go." This may be accomplished by assembling groups that are homogeneous with respect to demographic, socio-cultural, and in some cases, psychological characteristics (Merton, Fiske, & Kendall, 1956; Bellenger, Bernhardt, & Goldstucker, 1985; Calder, 1977).

Yet, in spite of efforts to promote a congenial temper, sometimes one or more members will dominate the discussion or be rude. The moderator has the challenging task of dealing with this problem constructively and gently but firmly turning aside any distractions.

Participant recruitment should be tailored to the research aims. Selection criteria should generally specify demographic and other characteristics of the target group. Purposive sampling is the method by which most focus groups are assembled. Once rich qualitative data are obtained from participants, subsequent research efforts using probability sampling designs can be used to investigate how representative the different views of participants are, and how strongly they are held.

The number of groups to be conducted will depend on: the number of population strata to be included, the nature and scope of the research aims, the variability of responses, and the usual constraints of practicality and costs.

Developing the discussion outline requires careful thought and considerable effort. As in the design of all questionnaires, each item in the discussion outline should have a specific purpose. Most items should relate to the research aims, but inclusion occasionally of certain other items can facilitate the social and psychological functioning of the group. Some examples: statements clarifying the goals of the study and assuring confidentiality, introductory techniques that move each participant to share something with the group, or the strategic promotion of laughter and relaxation.

If sensitive topics are to be included, they should be preceded by non-threatening topics that allow both moderator and group ample time to establish rapport. As a general rule, items should proceed from general to specific. Reviewing literature related to the topic being investigated and consulting with specialists may be useful.

It must be kept in mind that the outline is a flexible guide rather than a rigid set of directions (Manoff, 1985). A discussion session will usually run about two hours, but depending on the topic and the dynamics, may last one to three hours.

Analysis of the information obtained in discussion will obviously depend on what it is to be used for (Calder, 1977; Zemke & Kramlinger, 1985). In adapting FG for this study, the investigators were aware that previous research on young drivers had tended to rely exclusively on quantitative approaches which limited the responses to pre-selected options. FG was deliberately planned to avoid this limitation by seeking from the participants a wide range of views and experiences that would enlarge understanding of why they had particular opinions and feelings. Development of the FG Discussion Guide is described below.

1. The investigators identified broad problem areas. From the literature and their personal experience, these included: (a) normative beliefs about risk-taking; (b) perceived effectiveness of alternative strategies for prevention; (c) perceptions among young drivers about the causes of accidents, especially among those 18-22 years of age; (d) suggestions for improving the performance of young drivers; (e) specific obstacles to this task and ways to overcome them; (f) benefits young people attach to driving, safe and unsafe; and (g) determinants for changes in their driving practices.

2. For each broad topic, the investigators separately developed relevant items or questions. They then pooled these items and jointly reviewed and revised them. Similar items were combined or eliminated, and consensus was reached on an initial pool of questions.

3. The broad topics and the items under them were arranged into what seemed to be a logical order. Here and there a peripheral item was added in order to connect topics or facilitate discussion. By the conclusion of this step, a discussion guide had been produced in draft.

4. This draft was reviewed by an experienced FG moderator. She suggested rewording some of the items and adding others.

5. The FG discussion guide was then pilot-tested (as described elsewhere in this report) in two sites; modifications resulting from this step are reflected in the final form (Appendix B).

Semantic Differential (SD)

The SD measures connotative meanings as a reflection of attitudes. Fishbein and Ajzen (1975, p. 6) define attitude as: "A learned predisposition to respond in a consistently favorable or unfavorable manner with respect to a given object." In developing their Theory of Behavioral Intention, Fishbein and Ajzen based their predictions of behavior on two major factors: (1) attitude toward the behavior performed in a given situation; and (2) subject norms regarding the behavior itself. They have obtained high positive correlations between attitude and behavior--from 0.63 to 0.91.

Green, Kreutzer, Deeds, and Partridge (1980) include attitudes along with knowledge, beliefs, values, and perceptions as predisposing factors

in health behavior; and they stress the importance of predisposing factors in determining motivation to practice a particular behavior. They cite the SD as one of the techniques frequently used to measure attitudes.

From 1923, when Ogden and Richards wrote The Meaning of Meaning, to 1957, when The Measurement of Meaning by Osgood, Suci, and Tannenbaum was published, linguists, psychologists, and physiologists endeavored to learn about meaning as a way to understand people, their attitudes and predispositions.

Berlo (1960), in discussing communication, explains the difference between denotative and connotative meaning. Denotative meaning is recorded in dictionary definition. It represents a uniform understanding of many different people, a shorthand which enables us to name objects which other people will understand in ways similar to our own. Connotative meaning is personal. People respond uniquely, in a manner that reflects their own attitudes, feelings, and beliefs with regard to specific words, phrases, or signs, each of which has its own meaning for each individual, depending upon his/her past experienes and associations. The phrase "seat-belt law" may evoke the response "good" by some and "bad" by others.

Developed by Osgood, Suci, and Tannenbaum (1957), the SD is a useful technique for studying the dimensions of meaning. It is measured through a word, phrase, or sign and a scale consisting or two bipolar adjectives. The scale usually has seven positions which can indicate direction and strength of reaction. For example:

Drinking and Driving

Hot							Cold
7	6	5	4	3	2	1	

> One of the functions of a scale is to provide an indirect or underlying measure of a concept. This function is especially important when assessing a sensitive concept without biasing the subject's responses. This could occur through questioning him or her directly, or in the process of evaluating the underlying, perhaps even sub-conscious, feelings of a subject about a particular concept as might be expressed in a word or phrase. (Bailey, 1982, p. 379)

There are several qualities or semantic dimensions represented by noun concepts. The most prominent dimensions identified by Osgood, Suci, and Tannenbaum (1957) were Evaluation, Potency, and Activity. In their studies, Williams and Malfetti (1970) added the dimension of Stability.

The following bipolar adjectives were used in the present study to measure the meaning of each of the 28 noun concepts (page 12) in four dimensions.

Dimension	Bipolar Adjectives		
Evaluative	Pleasant	-	Unpleasant
	Good	-	Bad
	Wise	-	Foolish
	Safe	-	Unsafe
Activity	Youthful	-	Old
	Hot	-	Cold
	Fast	-	Slow
	Alive	-	Dead
Potency	Hard	-	Soft
	Thick	-	Thin
	Large	-	Small
	High	-	Low
Stability	Stable	-	Changeable
	Calm	-	Excitable
	Careful	-	Careless
	Sure	-	Uncertain

The bipolar adjectives above follow closely those used by Malfetti, Simon and Williams (1974, p. 2), reflecting:

> ...the semantic dimensions of the factorial loadings as demonstrated by Osgood et al. (1957), and according to the frequency of occurrence of each adjective in the English language. (Thorndike & Lorge, 1944)

In the process of checking this type of scale the qualitative response of an individual to a noun concept is translated into a value which can be quantified to make up factors which represent each of the above four dimensions. Pelto and Pelto (1978) explain that respondents' ratings on the various adjective scales can be averaged in order to examine the range of "semantic space" assigned to a particular noun concept; these can then be compared with other noun concepts in the same semantic dimension.

The experience of Osgood, et al., led them to conclude that the SD was a reliable and valid technique:

> As an indicator of attitude, the semantic differential has relatively high validity, that is, it measures what it purports to measure. The validity of the semantic differential is .90 or better using the Thurston scales as a criterion measure. The test-retest reliability of the semantic differential is .91. (p. 192)

The SD has been employed in a variety of ways:

-- to explore the meanings of political concepts (Osgood et al., 1957, p. 104);

-- to investigate the relationships between the connotative meanings of spouses and their marital contentment and discord (Katz, 1959);

-- to learn about body image (Plutchik, 1973);

-- to assess the impact of psychotherapy sessions (Stiles, 1980);

-- to measure attitudes of federal supervisors and employees toward performance (Rampp, Heerman, & Hortin, 1982);

-- to determine the attitudes and predispositions of drivers (Williams & Malfetti, 1970; Malfetti, Simon, & Williams, 1974; Yee, 1985).

"The Chicago Study" conducted in 1960 (Williams & Malfetti, 1970) was a pilot test of the utility of the SD in measuring the characteristics of drivers. The results strongly supported the SD as useful in describing and differentiating good and bad drivers in terms of accidents and violations.

"The Minnesota Study," made in 1963 (Williams & Malfetti, 1970), pursued the idea of differentiating "good" and "bad" drivers. The results of a two-year follow-up of driving records through state motor vehicle departments were inconclusive. However, the personal information was impressive. Consistent with good driving records were academic achievement, sensible use of money, and non-smoking. This outcome supported our intention to create a data sheet on driving (DSD).

The "Manual for the Administration of Driving and Connotative Meaning" by Malfetti, Simon, and Wiliams (1974) indicates that the reliability of the SD is reasonably high. Over time, with varying groups, it appears to be stable.

Yee (1985) investigated "Correlations Between What Automobile Drivers Ages 55 and Over 'Say' and 'Feel' About Their Mobility and Safety Needs and Problems." The instruments used were the Older Driver Survey (ODS) form and a Driving and Connotative Meaning (DCM) form based on the SD technique. The DCM was found to be useful as a validity measure of the ODS form. This suggested that data from the SD and other instruments might be compared against each other as validity checks.

The foregoing review suggests that the SD is a suitable technique for assessing attitudes. The SD selected for the present study was adapted from the Driving and Connotative Meaning instrument developed by Williams and Malfetti (1970), and Malfetti, Simon, and Williams (1974). In the latter study (p. 12), the reliability for the SD on each of the semantic dimensions was: (1) Evaluative = .80; (2) Potency = .69; (3) Activity = .65; and (4) Stability = .75.

Noun Concepts

The noun concepts in the SD relate to traffic safety problems, their solutions, and to life in general. The study team chose them by the process outlined in the following steps:

1. A review was undertaken of the literature on traffic safety problems and solutions, and concepts of general interest in a study involving young people.

2. A list of 93 concepts was given to nine graduate students who, in a communication course, had been assigned to read articles on traffic safety. They were already familiar with the SD. They were asked to rate, on the basis of their readings and experience, the importance of each concept within three categories: traffic safety problems, suggested solutions to those problems, and life in general. The investigators also rated the importance of the concepts. A combined score was computed, and, with the scores as a guide, 21 concepts were selected.

3. A meeting was held with Sam Yaksich, Jr., Executive Director of the AAA Foundation for Traffic Safety, to review the concepts. Because of the problem of drinking and driving and its relevance to drinking practices and preferences, Mr. Yaksich suggested that additional concepts, such as beer, wine, and hard liquor be included.

4. Pilot studies were conducted at Bronx Community College and York College, divisions of the City University of New York, to determine the following: (a) the practicability of the data collection plan; (b) the length of time required to introduce, explain, and administer the FG, SD, and DSD, respectively and combined; (c) the compatibility of the FG discussion content in relation to the SD concepts; and (d) the appropriateness and sufficiency of the latter.

5. As a result of the pilot session, the FG discussion guide was revised; and since it surfaces as a common problem, the concept of taking a ride with an unsafe driver was added to the SD. The pilot sessions also gave the investigators practice in administering the instruments and in moderating FG discussions. Ultimately, 28 noun concepts were chosen:

1.	car	15.	drinking and driving
2.	driving	16.	self-control
3.	risk taking	17.	twenty-one year old drinking age
4.	peer pressure	18.	young driver
5.	anger	19.	wine
6.	power	20.	friends
7.	partying	21.	parents
8.	seat belts	22.	hard liqour
9.	speeding	23.	freedom
10.	police	24.	drugs
11.	my risk of a serious automobile accident	25.	self-confidence
12.	drinking	26.	riding with an unsafe driver
13.	safe driving	27.	myself
14.	beer	28.	the future

Semantic Dimensions and Bipolar Adjectives Scales

The four semantic dimensions measured in the SD form are Evaluation, Potency, Activity, and Stability. The first three have been identified as basic by Osgood, Suci, and Tannenbaum (1970), and the fourth has been used in driving studies by Malfetti, Simon, and Williams (1974). Sixteen bipolar seven-position adjective scales were selected to reflect the four semantic dimensions (p. 9). Random ordering or bipolar seven-position adjective scales helped to disguise the nature of the SD technique and prevented response sets (Heise, 1970, p. 240; Malfetti, Simon, & Williams, 1974, p. 2). The format of the SD word rating form was identical for each noun concept. Following is a sample of the seven-position scale and adjectives used in the study. The adjectives underlined indicate the high end of the scale for scoring purposes.

SAMPLE OF SEVEN POSITION SCALE AND ADJECTIVES
INDICATING DIRECTION* FOR SCORING PURPOSES

DRINKING AND DRIVING

STABLE	( )	( )	( )	( )	( )	( )	( ) CHANGEABLE
OLD	( )	( )	( )	( )	( )	( )	( ) YOUNG
SOFT	( )	( )	( )	( )	( )	( )	( ) HARD
PLEASANT	( )	( )	( )	( )	( )	( )	( ) UNPLEASANT
BAD	( )	( )	( )	( )	( )	( )	( ) GOOD
FAST	( )	( )	( )	( )	( )	( )	( ) SLOW
EXCITABLE	( )	( )	( )	( )	( )	( )	( ) CALM
THICK	( )	( )	( )	( )	( )	( )	( ) THIN
ALIVE	( )	( )	( )	( )	( )	( )	( ) DEAD
LARGE	( )	( )	( )	( )	( )	( )	( ) SMALL
FOOLISH	( )	( )	( )	( )	( )	( )	( ) WISE
LOW	( )	( )	( )	( )	( )	( )	( ) HIGH
OPEN	( )	( )	( )	( )	( )	( )	( ) CLOSED
CARELESS	( )	( )	( )	( )	( )	( )	( ) CAREFUL
SAFE	( )	( )	( )	( )	( )	( )	( ) UNSAFE
SURE	( )	( )	( )	( )	( )	( )	( ) UNCERTAIN

*The adjectives underlined indicate the high end of the scale.

Data Sheet on Driving

The DSD was developed by the investigators on the basis of a consensus technique. The form was used to collect information needed to describe the sample population and to compare them on: sex and age, length of time licensed, the amount of time spent driving each day, what time of day most driving was usually done, where to and whom the respondent is usually with when driving. Data were also collected on the respondent's self-rating as a driver, future outlook, and actual driving practices. For self-rating of driving, six choices were provided, ranging from "extremely safe" to "extremely unsafe." Outlook about the future was indicated by one of six choices, from "extremely optimistic" to "extremely pessimistic." A description of driving behavior was also requested through questions relating to:

1. taking risks when driving,
2. racing with other drivers,
3. wearing a seat belt,
4. driving while intoxicated,
5. driving 10 miles over the speed limit, and
6. driving after drinking a couple of beers or other alcoholic drinks within an hour.

The choices provided for reporting the frequency for each of the behaviors above were "always," "daily or almost every day," "weekly or almost every week," "monthly or almost every month," "rarely," and "never."

Data Collection

One of the investigators addressed a Florida meeting of the AAA Foundation for Traffic Safety in January, 1986, to explain the purpose and design of the study. Cooperation of AAA clubs in the United States and Canada was requested in organizing groups of young drivers between ages 18 and 22 to participate in FG discussions and complete the SD and DSD. For reasons described earlier in this report, the investigators sought 18-22-year-olds from two-year and four-year colleges, universities, the military, the workplace, and unemployment centers. Furthermore, the investigators were curious about differences that might appear among these groups.

Following each of the FG discussions, the SD and DSD were distributed in one packet of 31 pages. The first page of the packet (Appendix A, p. 122) indicates the purpose and rationale of the study, and lists what the participants are asked to do.

The second page includes instructions (Appendix A, p. 123) for completing the 28-page SD word-rating form. These directions were read aloud to participants. Regarding the SD, it was stressed that participants were to respond to the noun concepts according to their inclinations and that they were not to be concerned about the literal

meanings of the bipolar adjectives or the correctness of their responses. The DSD was on the last page of the packet (Appendix B, p. 152). It was explained that although some personal information was requested, the responses would be confidential.

Data collection was conducted during April and May of 1986 in and around eleven cities in the United States and Canada as follows:

Date	Sites	n
April 9-10	Norfolk, Virginia	37
May 5-6	Los Angeles, California	49
May 8-10	Sacramento, California	39
May 12	West Point, New York	8
May 12	Garden City, New York	9
May 29	St. Louis, Missouri	21
May 30	Des Moines, Iowa	14
April 22-23	Tulsa, Oklahoma	35
May 1-2	Hamilton (Ontario), Canada	43
May 5-6	Edmonton (Ontario), Canada	29
May 19-22	Phoenix, Arizona	12
May 22-23	Seattle, Washington	20
	Total	316

The investigators were introduced to each group of participants by a representative of the AAA. The FG discussion was conducted first, followed by the completion of the SD and DSD.

Data Analysis

Quantitative and qualitative methods were used in analyzing the data collected. The quantitative techniques were applied to the questionnaire data and the qualitative to the analysis of the focus group discussions. Descriptive statistics were used to describe the demographic and driving behavior characteristics of the participants. Descriptive statistics, including means and standard deviations, were also calculated for the Connotative Meaning scores for the total sample by sex. To examine differences between subgroups of the sample, the investigators employed analysis of variance when the dependent variable was scaled, such as the connotative meaning data. Chi square analysis was used with the categorical outcomes. The utility of the connotative meaning results to predict driving behavior was determined through multiple regression analyses. The completed SD and DSD forms were coded and keypunched for processing into the computer DECSYSTEM-2060 at Columbia University. The internal consistency of the SD was calculated for each concept on each dimension.

The audiotapes and the field notes were the raw data of the analyses of FG dicussions. Each of the two investigators, who also served as FG moderators, thoroughly reviewed tapes from their own FG discussions.

Because transcribing all parts of all tapes would have produced an unmanageable volume of transcripts and because substantial time at most FG discussions was spent establishing rapport with participants and attending to socio-emotional tasks unrelated to specific FG objectives, only partial transcripts were prepared.

Both moderators prepared partial transcripts of the discussions they led by excerpting those portions that in their judgment were relevant to the study or were of special interest. These partial transcripts were reviewed by both moderators, and they selected highlights or case material they agreed upon as important or illustrative. An initial list of categories was developed inductively for organizing the dialogue from the partial transcripts. The coding categories were

Anticipations about driving
Expectations and realities of having a driver's license
Benefits and importance of driving
Kinds of cars preferred
Self-concept tied to car
Driver education
Learning to drive
Licensing exams
Too easy to get license
Young drivers' thoughts regarding older drivers
Perceptions about roadblocks
Worst drivers
Perceptions about others in society
Fears about "the other guy"
Fun and relaxation
Familiarity, rationales, normative beliefs, and examples of drinking and driving
Examples and rationales of problem drinking
Alcohol: abstinence vs. responsible use
Perceptions about alcohol and driver education
Risk of being caught driving after drinking
Preference of alcoholic beverage
Misconceptions--beer vs. liquor
Legal drinking age law--21 or lower
Lack of judgment, knowledge or skill estimating blood alcohol level
False confidence about driving ability after drinking
Avoiding drinking after driving
Being a passenger with an intoxicated driver
Combining alcohol with other drugs
Marijuana and driving
Use of seat belts and acceptability of the seat belt law
Speed limits and speeding
Causes of accidents
Poor example of parents and other role models
Moods affecting driving
Coping with emotions and driving

Nervousness about driving
Influence of TV
Host locus of control
Personal control
Susceptibility to accidents
Hazards for young drivers
Why some young drivers are more responsible than others
Descriptors of responsible driving
What makes a safe driver
I'm a safe driver
Social responsibility
Topics related to stress in a program for young drivers
Getting through to young drivers
Strategies to improve young drivers' performance
Suggestions for diagnostic questionnaire
Insurance premium as an incentive
One most important thing to improve young people's driving
Experiences that changed during behavior
Male ego and driving behavior
Males vs. females as drivers
Concern for children and others

After being coded from the transcripts of individual groups, highlights were then collated across groups, thereby permitting a examination and description of similarities and differences as illustrated in the words of the FG participants themselves.

The descriptions eventually emerged as themes which in turn became the major headings for the Focus Group Findings. These included:

1. What the car and driving represent
2. Young drivers' thoughts regarding older drivers
3. Fun and excitement
4. Drinking and driving
5. Seat belts
6. Speed limits and speeding
7. Risk taking as passengers
8. Causes of accidents
9. Why some drivers are more or less cautious
10. Topics young drivers would stress--and how
11. Change in driving behavior
12. Society and peers as influences on driving
13. Concern for others

After these broad categories had been formed, the transcripts were checked again for possible omissions. Special attention was directed to identifying key ideas that may have surfaced only once or twice during discussion.

FINDINGS

The results of the study are divided into: (1) Questionnaire Findings, and (2) Focus Groups Findings. The questionnaire findings are a presentation of demographic and driving information, ratings of semantic differential concepts, concepts distinguishing males and females, and prediction of driving behavior.

Results of the focus group analysis comprise three sections: (1) introductory discussion topics; (2) behaviors related to traffic safety; and (3) additional perspectives related to prevention. The first section contains issues related to: what the car and driving represent; young drivers' thoughts regarding older drivers; and fun and excitement.

The section on behaviors concerns: drinking and driving; seat belt use; seeding; and risk-taking of passengers.

The final section, on additional perspectives, includes: perceived causes of accidents; explanations why some drivers are more or less cautious than others; topics young drivers would stress in programs and ways they say they can be influenced; factors affecting change in driving behavior; society and peers as influences; and concern for others as a determinant of driving habits.

Questionnaire Findings

Table 1 gives information on sex, age, and employment/student status of respondents. The 316 respondents included 160 females and 152 males (four respondents did not specify). Most respondents were seen at places of employment (29.1%) and military bases (25%); 73% were between 20 and 22 years old. Table 2 concerns length of time licensed and amount and type of driving done. More than two-thirds of the respondents held licenses between two and six years, and drive between one and four hours per day. Use of the car for work was reported by just over 50% and for school and errands by about 20% and 10%, respectively.

Self-rating on Safety as a driver

Young drivers generally think of themselves as safe drivers. Respondents rated themselves as: (a) "extremely safe"; (b) "very safe"; (c) "safe"; (d) "unsafe"; (e) "very unsafe"; or (f) "extremely unsafe." There were 2.2% (n=7) who rated themselves as "unsafe," 56.2% (n=177) thought they were "safe," 32.1% (n=101) as "very safe," and 7.6% (n=24) as "extremely safe." Six individuals gave no answer.

Outlook about the future

Respondents' choices for indicating their "outlook about your future" were: (a) "extremely optimistic"; (b) "very optimistic"; (c) "optimistic"; (d) "pessimistic"; (e) "very pessimistic"; (f) "extremely

TABLE 1

SAMPLE FREQUENCY DISTRIBUTION AND PERCENTAGES
BY AGE AND EMPLOYMENT/STUDENT STATUS

Characteristics		Number	Percent
Age			
< 18			
	Male	10	3.2
	Female	8	2.6
19			
	Male	22	7.1
	Female	24	7.7
20			
	Male	32	10.3
	Female	34	11.0
21			
	Male	30	9.7
	Female	25	8.1
> 22			
	Male	59	19.0
	Female	66	21.3
	Total	310*	
Employment/Student Status			
2-Year College		29	9.2
4-Year College		40	12.7
Military		79	25.0
Employed		92	29.1
Unemployed		36	11.4
Vocational Training		40	12.7
	Total	316	

*Six individuals neglected to report sex and/or age.

TABLE 2

SAMPLE FREQUENCY DISTRIBUTION AND PERCENTAGES
BY SELECTED DRIVING VARIABLES

Variable	Number	Percent
Length of time licensed (Years) (n=302)		
< 1	28	9.3
< 2	23	7.6
< 3	42	13.9
< 4	59	19.5
< 5	49	16.2
< 6	58	19.2
> 6	43	14.2
Time spent driving (hours per day) (n=290)		
0	18	6.0
1	78	26.2
2	75	25.2
3	53	17.8
4	37	12.4
5	11	3.7
6	10	3.4
>6	16	5.4
Primary purpose of driving (n=293)		
Work	147	50.1
School	57	19.5
Errands	31	10.6
Leisure activities	25	8.5
Visiting friends/relatives	20	6.8
Other	13	4.4
With whom driving is done (n=299)		
Friends	142	47.5
Alone	87	29.1
Adult relatives	40	13.4
Child or children	9	3.0
Co-workers	6	2.0
Other	15	5.0

pessimistic." There were 45.4% (n=143) who described themselves as "optimistic," 30.8% (n=97) as "very optimistic," 13.7% (n=43) as "extremely optimistic," while 5.1% (n=16), 1.6% (n=5), and 0.3% (n=1) reported their outlook as "pessimistic," "very pessimistic," and "extremely pessimistic," respectively.

Self-reported Driving Behavior

Self-reported driving behavior was a key dependent variable in the study. Respondents reported the frequency with which they indulged in six behaviors that are central to accidents: (1) take risks when driving, (2) race with other drivers, (3) wear seat belts, (4) drive while intoxicated, (5) drive 10 miles over the speed limit, and (6) drive after drinking a couple of beers or drinks within an hour. There were six options of response: (a) "always," (2) "daily or almost every day," (3) "weekly or almost every week," (4) "monthly or almost every month," (5) "rarely," or (6) "never." Results are shown in Table 3.

The most commonly practiced unsafe driving behaviors reported were "driving ten miles over the speed limit" and "taking risks when driving," with about 40% and 20%, respectively, performing these wrongful acts "daily or almost every day." An additional 20% reported taking risks "weekly or almost every week." Approximately 30% of the respondents fastened seat belts "rarely" or "never." Slightly over 6% admitted driving while intoxicated "weekly or almost every week"; an additional 10% did so "monthly or almost every month." As to driving after having a couple of drinks or beers within an hour, about 12% reported that they did so "weekly or almost every week." About 10% engaged in this behavior "monthly or almost every month"; and more than 5% on a daily basis.

A more positive finding was that almost 60% of the sample used seat belts "daily or almost every day." Another was that almost half of the respondents indicated that they "never" drove while intoxicated or raced with other drivers, and an additional 30% did so "rarely."

The dispersion in the distributions in Table 3 illustrates clearly the great variability in risk-related driving behaviors practiced among young people.

Relationship Between Self-Rating as a Driver and Self-Reported Driver Behaviors

Self-reported driver behaviors were compared to self-rating, and differences were assessed through chi square analyses. Findings were explored for the total sample, and for males and females separately. Almost all of the respondents (n=302) rated themselves in either the "extremely safe," "very safe," or "safe" categories. A few (n=7) indicated that they were "unsafe" but none rated themselves as "very unsafe" or "extremely unsafe." Seven participants did not respond to this item; and since there was little or no response in the "unsafe" categories, the analysis was carried out with only the "extremely safe,"

TABLE 3

FREQUENCIES AND PERCENTAGES DESCRIBING THE FREQUENCY WITH WHICH SELECTED DRIVING BEHAVIORS ARE PRACTICED

Driving Behaviors	Frequency											
	Always		Daily or almost every day		Weekly or almost every week		Monthly or almost every month		Rarely		Never	
	n	%	n	%	n	%	n	%	n	%	n	%
Take risks when driving (n=310)	8	2.5	52	16.5	65	20.6	45	14.3	119	37.8	21	6.7
Race with other drivers (n=310)	5	1.6	9	2.9	22	7.0	24	7.6	96	30.5	154	48.9
Wear my seat belt (n=309)	120	38.1	61	19.4	21	6.7	12	3.8	54	17.1	41	13.0
Drive while intoxicated (n=307)	1	0.3	0	0.0	20	15.3	33	10.5	102	32.4	151	47.9
Drive ten miles over the speed limit (n=309)	39	12.4	87	27.6	50	25.9	38	12.1	63	20.0	32	10.2
Drive after drinking a couple of beers or drinks within one hour (n=272)	11	3.5	6	1.9	38	12.1	30	9.5	77	24.4	110	34.9

"very safe," and "safe" categories. In some instances, the driving behavior frequencies were collapsed in order to avoid empty cells in the cross tabulation tables used for chi square analysis. In the total sample, no significant relationships were found between self-rating as a driver and "driving while intoxicated" or "driving after a couple of beers or drinks within an hour." There were relatively small differences between the groups for "race with other drivers" and "wear my seat belt" ($P < .05$), and there were large differences between the self-rating groups found for "take risks when driving" and "drive 10 miles over speed limit" ($P < .0001$). In each case where there was a significant difference, the respondents who rated themselves as safest showed the greatest tendency toward safe behavior. Results for the total sample are shown in Table 4. For every driving behavior except "take risks when driving," the differences observed for the total sample disappeared when the sample was segmented by sex.

In the chi square analysis for males' self-rating compared with each of the six driver behaviors, no significant differences were observed. In the chi square analysis for females' self-rating compared with each of the six driver behaviors, there were no significant differences for "rac with other drivers," "wear my seat belt," and "drive 10 miles over speed limit." There were differences for "drive while intoxicated" and "drive after drinking a couple of beers or drinks within an hour" ($P < .05$), and for "take risks when driving" ($P < .0001$). The results are shown in Table 5.

It is interesting to note that about 9% (n=6) of females rating themselves as "extremely safe" or "very safe" reported 'taking risks when driving" at least "daily or almost every day." For those rating themselves as "safe," about 19% (n=16) reported "taking risks when driving" that frequently. Similar results in perception were found regarding seat belt use. Of the 152 females rating themselves as "safe," "very safe," or "extremely safe," about 30% (n=44) reported they use their seat belts rarely or never. These kinds of inconsistencies were also observed for males.

The relationship between self-rating and driving behavior was also assessed for the composite score derived from the driving behaviors for the total sample, and for males and females separately. Since data were missing from a portion of the sample on the sixth item, the composite score was based on response to the first five driver behaviors. The sixth behavior, "drive after drinking a couple of beers or drinks within an hour," was added subsequent to the first administration of the DSD at Norfolk, Virginia. The composite score was based on the sum of responses to the first five driving behaviors. The lowest value was assigned to the "always" response for each behavior with the exception of "wear my seat belt," where direction was reversed. The internal consistency of the composite was calculated using Cronbach's Alpha and was found to be 0.68 for the total sample. Driver behavior composite means, standard deviations, and F ratios by self-rating for the total sample, for males and for females are shown in Table 6.

TABLE 4

CROSS TABULATION OF FREQUENCIES AND PERCENTAGES
WITH WHICH SELECTED DRIVING BEHAVIORS ARE PRACTICED
BY SELF-RATING AS A DRIVER FOR TOTAL SAMPLE

Frequencies with which Selected Driving Behaviors Are Practiced	Self-Rating as a Driver: Extremely Safe n	Extremely Safe %	Very Safe n	Very Safe %	Safe n	Safe %	Chi Sq.
Take risks when driving (n=298)							48.7**
Always or Daily	2	9.1	14	14.0	37	21.0	
Weekly	1	4.6	17	17.0	47	26.7	
Monthly	1	4.6	11	11.0	32	18.2	
Rarely	11	50.0	54	54.0	53	30.1	
Never	7	31.8	4	4.0	7	4.0	
Race with other drivers (n=298)							13.0*
Always, Daily or Weekly	2	9.1	6	6.0	24	13.6	
Monthly	0	0.0	7	7.0	16	9.1	
Rarely	3	13.6	32	32.0	58	33.0	
Never	17	77.3	55	55.0	78	44.3	
Wear my seat belt (n=297)							17.4*
Always	15	68.2	45	45.0	57	32.6	
Daily	2	9.1	20	20.0	34	19.4	
Weekly or Monthly	0	0.0	8	8.0	25	14.3	
Rarely	2	9.1	12	12.0	36	20.6	
Never	3	13.6	15	15.0	23	13.1	
Drive while intoxicated (n=295)							12.3
Always, Daily or Weekly	1	4.6	2	2.0	18	10.4	
Monthly	1	4.6	12	12.0	20	11.6	
Rarely	5	22.7	31	31.0	61	35.3	
Never	15	68.2	55	55.0	74	42.8	
Drive 10 miles over speed limit (n=297)							32.8**
Always	2	9.1	11	11.0	22	12.6	
Daily	1	4.6	26	26.0	58	33.1	
Weekly or Monthly	3	13.6	29	29.0	53	30.3	
Rarely	7	31.8	24	24.0	30	17.1	
Never	9	40.9	10	10.0	12	6.9	
Drive after drinking a couple of beers or drinks within an hour (n=261)							11.1
Always or Daily	0	0.0	5	5.6	11	7.2	
Weekly	1	5.3	13	14.4	24	15.8	
Monthly	0	0.0	12	13.3	16	10.5	
Rarely	5	26.3	23	25.6	48	31.6	
Never	13	68.4	37	41.1	53	34.9	

*P < .05 ** P < .0001

TABLE 5

CROSS TABULATION OF FREQUENCIES AND PERCENTAGES
WITH WHICH SELECTED DRIVING BEHAVIORS ARE PRACTICED
BY SELF-RATING AS A DRIVER FOR FEMALES

Frequencies with which Selected Driving Behaviors Are Practiced	Self-Rating as a Driver: Extremely Safe n	Extremely Safe %	Very Safe n	Very Safe %	Extremely and Very Safe Collapsed n	Extremely and Very Safe Collapsed %	Safe n	Safe %	Chi Sq.
Take risks when driving (n=152)									23.5**
Always or Daily					6	9.0	16	18.8	
Weekly					4	6.0	22	25.9	
Monthly					3	4.5	11	12.9	
Rarely					48	71.6	31	36.5	
Never					6	9.0	5	5.9	
Race with other drivers (n=152)									5.2
Always, Daily, Weekly or Monthly					2	3.0	11	12.9	
Rarely					16	23.9	22	25.9	
Never					49	73.1	52	61.2	
Wear my seat belt (n=152)									7.2
Always					35	52.2	27	31.8	
Daily					12	17.9	20	23.5	
Weekly or Monthly					4	6.0	10	11.8	
Rarely					10	14.9	20	23.5	
Never					6	9.0	8	9.4	
Drive while intoxicated (n=152)									7.9*
Always, Daily, Weekly Monthly or Rarely	4	30.8	17	31.5			46	54.1	
Never	9	69.2	37	68.5			39	45.9	
Drive 10 miles over speed limit (n=151)									10.3
Always					5	7.5	6	7.1	
Daily					9	13.4	28	33.3	
Weekly					11	16.4	12	14.3	
Monthly					8	11.9	12	14.3	
Rarely					21	31.3	18	21.4	
Never					13	19.4	8	9.5	
Drive after drinking a couple of beers or drinks within an hour (n=143)									10.0*
Always, Daily, Weekly, or Monthly	0	0.0	7	13.7			25	71.3	
Rarely	3	25.0	16	31.4			20	25.0	
Never	9	75.0	28	25.0			35	43.8	

*P < .05 **P < .0001

TABLE 6

ANALYSIS OF VARIANCE OF DIFFERENCES IN
MEAN DRIVING BEHAVIOR COMPOSITE SCORES[t] BY SELF-RATING
AS A DRIVER FOR TOTAL SAMPLE, MALES AND FEMALES

Self-Rating as a Driver	N	Mean	S.D.	F Ratio
Total sample	308			12.55*
Extremely safe	22	25.5	4.26	
Very safe	100	22.7	3.74	
Safe	176	20.7	4.40	
Unsafe	10	18.7	5.58	
Males	144			5.33*
Extremely safe	9	24.7	5.41	
Very safe	44	21.1	3.61	
Safe	91	19.7	4.43	
Females	152			11.82**
Extremely safe	13	26.1	3.38	
Very safe	54	24.1	3.02	
Safe	85	21.8	4.11	

*P < .01 **P > .001

t = High mean score reflects more cautious behavior

Because very few participants rated themselves on the unsafe side of the scale, categories for "unsafe," "very unsafe," and "extremely unsafe" were collapsed into a single category when conducting the analysis for the total sample; and those rating themselves as "unsafe" were excluded from the analysis for males and females. The results showed that the groups which rated themselves safest also had a higher driver behavior composite score, which indicated safe driving practices. The driver behavior means decreased progressively with respect to self-rating of safety as a driver. The results were consistent for the total sample as well as for males and females (see Table 6).

The results of this analysis and the chi square analysis reported above indicate that the relationship between self-rating as a driver and self-reported driving behavior is stronger for females than for males. It is important to note that although considerable portions of the sample reported engaging in unsafe driving behaviors on a frequent basis, only 2.2% (n=7) indicated that they consider themselves to be "unsafe" as drivers. This fact points to a need for clarification for the young of the concept "safe driver," and the need for more thorough self-assessment.

Relationship Between Sex and Driver Behaviors

With chi square analyses, frequency reports for engaging in specific driver behaviors were compared by sex of respondents. Results appear in Table 7. Response categories were collapsed when necessary to provide a large enough sample in each cell for analysis. Statistically significant differences between males and females were found on each of the driver behaviors except "wear my seat belt." With this one exception females reported consistently safer driving behavior.

The behavior that showed the greatest difference by sex was "race with other drivers." More than twice as many females (65% vs. 32%) report "never" racing.

The relationship between sex and the composite score derived from the five driver behaviors showed that the mean score for females (23.1) was significantly greater than the mean score for males (20.3), revealing that females reported being more cautious than males. The F ratio resulting from the ANOVA was 33.45 which was significant at the .001 level.

Connotative Meaning Associated with Selected Concepts: Total Sample

Concepts related to driving and life in general were rated by young drivers to determine those about which they felt most strongly. Their strength of feeling was assessed and compared through dimension scores. Each dimension score was derived from four, seven-position bipolar adjective scales. Twenty-eight was the highest possible score and four the lowest for each dimension. In assessing meanings from scores, one would generally consider a high score appropriate on a positive concept such as safe driving, myself or self-control, and a low score appropriate

TABLE 7

CROSS TABULATION OF FREQUENCIES AND PERCENTAGES
WITH WHICH SELECTED DRIVING BEHAVIORS ARE PRACTICED BY SEX

Frequencies With Which Selected Driving Behaviors Are Practiced	Males n	Males %	Females n	Females %	Chi Sq.
Take risks when driving (n=306)					28.3**
Always or Daily	36	24.0	24	15.4	
Weekly or Daily	39	26.0	26	16.7	
Monthly	31	20.7	14	9.0	
Rarely	37	24.7	79	50.6	
Never	7	4.7	13	8.3	
Race with other drivers (n=308)					41.4**
Always or Daily	11	7.3	2	1.3	
Weekly	15	10.0	7	4.4	
Monthly	20	13.3	4	2.5	
Rarely	55	36.7	41	26.0	
Never	49	32.7	104	65.8	
Wear my seat belt (n=305)					5.7
Always	56	37.6	62	39.7	
Daily	26	17.5	34	21.8	
Weekly	12	8.1	9	5.8	
Monthly	7	4.7	5	3.2	
Rarely	23	15.4	31	20.0	
Never	25	16.8	15	9.6	
Drive while intoxicated (n=303)					13.8*
Weekly	15	10.2	6	3.9	
Monthly	22	15.0	10	6.4	
Rarely	50	34.0	51	32.7	
Never	60	40.8	89	57.1	
Drive 10 miles over speed limit (n=305)					17.4*
Always	27	18.0	11	7.1	
Daily	47	31.3	39	25.2	
Weekly	16	17.3	23	14.8	
Monthly	18	12.0	20	12.9	
Rarely	22	14.7	40	25.8	
Never	10	6.7	22	14.2	
Drive after drinking a couple of beers or drinks within an hour (n=268)					28.1**
Always or Daily	10	8.3	6	4.1	
Weekly	29	24.0	9	6.1	
Monthly	12	9.9	17	11.6	
Rarely	38	31.4	39	26.5	
Never	32	26.5	76	51.7	

*P < .05 **P < .000

on a concept such as **riding with an unsafe driver**, or **drinking and driving**.

The relative positions of each concept within each dimension were compared, and served as the measure of the attitudes of a group. In searching for the concepts with the strongest meanings, the standard deviations are helpful in showing which dimension scores are more distinct from others in the group (Twaite & Monroe, 1979). Dimension means one or more standard deviation from the average of their respective dimension means, either on the high or low end of the range, on more than one dimension, was a criterion used to identify those concepts which the sample felt most strongly about. They are the concepts which are said to be "saturated" with meaning (Osgood, Suci, & Tannenbaum, 1957). There were many concepts which fell into a "neutral zone"; that is, their dimension scores were relatively close to the average dimension mean, indicating that little can be said about them based on this comparison.

Prior to assessing the relative strength of meaning associated with each concept, the internal consistency of each dimension on each concept was calculated. These data are shown in Table 8. Overall, the internal consistencies for the Evaluative dimension were highest. The range of these coefficients was from 0.72 to 0.88, with a mean across all concepts of 0.81. The internal consistency coefficients were fairly high for the Stability dimension. The range was 0.41 to 0.69. One-half of the estimates were greater than 0.60. The estimates for the Potency dimension were lower. The range across the Potency dimension was 0.08 to 0.67, and the coefficients for the majority of the concepts on this dimension were below 0.50. The internal consistencies of the Activity dimension were the lowest, with all but two alpha coefficients being less than 0.50 and the majority being less than 0.40.

The means, standard deviations, and ranks for each concept across the four dimensions are listed in Table 9. The concepts with means one standard deviation below the average mean in the Evaluative dimension were **drinking and driving**, **riding with an unsafe driver**, and **drugs**. The concepts with means on standard deviation above the average mean in the Evaluative dimension were **safe driving**, **self-control**, **self-confidence**, **myself**, **parent**, **freedom**, **driving**, and **seat belts**. Those with means one standard deviation below the average were **anger**, **hard liquor**, **peer pressure**, **risk taking**, and **speeding**. The only concept in the Activity dimension which was one standard deviation above the mean was **myself**. There were no concepts one standard deviation or more away from the average mean on the low end of the scale. Similarly, there were no concepts above or below one standard deviation of the mean in the Potency dimension. The concepts with means one standard deviation above the average in the Stability dimension were **safe driving**, **seat belts**, **self-control**, **parent**, and **self-confidence**. The concepts with means one standard deviation below the dimension mean were **riding with an unsafe driver**, **drugs**, **drinking and driving**, **hard liquor**, **anger**, **speeding**, **young driver**, and **risk taking**.

TABLE 8

INTERNAL CONSISTENCY FOR EACH CONCEPT ON EACH DIMENSION*

Concepts	Dimension				
	Evaluation	Activity	Potency	Stability	Total Concept
Car	0.72 (315)	0.34 (313)	0.37 (312)	0.41 (314)	0.61 (316)
Driving	0.75 (314)	0.33 (314)	0.08 (314)	0.48 (314)	0.64 (316)
Risk taking	0.85 (313)	0.37 (315)	0.44 (312)	0.69 (312)	0.65 (316)
Peer pressure	0.82 (314)	0.23 (314)	0.62 (313)	0.67 (313)	0.50 (315)
Anger	0.87 (316)	-0.03 (315)	0.55 (314)	0.66 (314)	0.55 (316)
Power	0.73 (314)	0.43 (312)	0.67 (311)	0.43 (315)	0.70 (314)
Partying	0.81 (315)	0.50 (313)	0.63 (311)	0.57 (313)	0.71 (315)
Seat belts	0.77 (314)	0.43 (315)	0.42 (311)	0.64 (315)	0.74 (315)
Speeding	0.78 (312)	0.44 (310)	0.52 (309)	0.63 (313)	0.62 (314)
Police	0.73 (315)	0.35 (314)	0.52 (313)	0.60 (316)	0.71 (316)
My risk of a serious accident	0.76 (315)	-0.05 (314)	0.61 (311)	0.63 (315)	0.73 (316)
Drinking	0.83 (316)	0.35 (313)	0.64 (312)	0.65 (315)	0.68 (316)
Safe driving	0.75 (316)	0.32 (312)	0.50 (312)	0.44 (315)	0.60 (316)
Beer	0.87 (314)	0.38 (312)	0.44 (314)	0.63 (314)	0.69 (315)
Drinking and driving	0.87 (314)	0.27 (312)	0.59 (314)	0.63 (314)	0.55 (315)
Self-control	0.79 (313)	0.39 (314)	0.40 (314)	0.53 (315)	0.69 (315)
Twenty-one year-old drinking age	0.87 (312)	0.31 (313)	0.34 (314)	0.59 (313)	0.75 (316)
Young driver	0.83 (312)	0.29 (313)	0.37 (314)	0.68 (315)	0.62 (315)
Wine	0.84 (314)	0.46 (310)	0.39 (314)	0.46 (314)	0.60 (315)
Friends	0.80 (313)	0.23 (316)	0.48 (315)	0.57 (316)	0.71 (316)
Parent	0.80 (315)	0.44 (314)	0.36 (310)	0.58 (314)	0.71 (316)
Hard liquor	0.86 (315)	0.23 (313)	0.57 (313)	0.68 (313)	0.66 (316)
Freedom	0.73 (313)	0.46 (316)	0.39 (312)	0.36 (316)	0.69 (316)
Drugs	0.87 (313)	0.31 (312)	0.53 (312)	0.61 (315)	0.63 (315)
Self-confidence	0.83 (313)	0.45 (311)	0.46 (312)	0.43 (314)	0.78 (314)
Riding with an unsafe driver	0.86 (313)	0.12 (313)	0.43 (313)	0.63 (314)	0.55 (315)
Myself	0.79 (315)	0.51 (314)	0.48 (312)	0.43 (315)	0.70 (315)
The future	0.88 (313)	0.47 (314)	0.47 (313)	0.59 (313)	0.73 (315)
Averages	0.81 (314)	0.37 (313)	0.47 (313)	0.57 (314)	0.68 (315)

*n=309 to 316

TABLE 9

MEANS, STANDARD DEVIATIONS AND RANKS FOR EACH CONCEPT ON EACH DIMENSION*

Concepts	Dimension											
	Evaluative			Activity			Potency			Stability		
	Mean	S.D.	Rank**	Mean	S.D.	Rank	Mean	S.D.	Rank	Mean	S.D.	Rank
Car	21.8	4.2	9	19.3	3.7	11	18.2	3.8	13	16.9	3.9	12
Driving	22.3	4.5	7	20.0	3.5	5	17.0	3.0	24	18.3	4.3	8
Risk taking	11.7	6.4	22	19.0	4.4	12	17.7	4.1	17	11.7	5.6	21
Peer pressure	10.9	5.6	23	18.7	4.0	13	18.9	.7	8	12.5	5.3	18
Anger	9.8	5.4	25	18.0	3.5	15	19.4	4.1	6	10.6	4.8	24
Power	18.4	5.1	12	19.7	3.8	8	19.9	4.2	1	14.6	4.4	15
Partying	17.2	5.7	15	21.2	4.2	2	19.5	4.5	3	12.3	4.7	20
Seat belts	22.4	5.2	8	16.7	4.5	23	17.5	4.0	21	22.0	4.7	2
Speeding	12.6	5.2	21	20.5	4.1	4	19.1	3.9	7	10.6	4.6	23
Police	18.3	5.3	13	16.3	3.7	24	19.4	3.6	5	18.7	4.9	7
My risk of a serious accident	13.1	5.9	20	16.8	3.4	21	16.2	4.6	26	15.7	5.5	13
Drinking	13.5	6.1	19	18.0	4.2	16	17.9	4.7	16	12.5	5.4	19
Safe driving	24.5	3.8	1	17.4	4.6	18	15.7	4.0	27	22.2	4.1	1
Beer	14.1	6.4	17	17.6	4.1	17	17.9	4.0	15	13.0	4.9	17
Drinking and driving	7.0	4.7	28	16.1	4.4	27	18.9	4.8	9	9.5	5.0	26
Self-control	23.5	4.1	2	18.5	3.6	14	17.6	3.5	18	21.5	4.3	3
Twenty-one year-old drinking age	17.9	6.7	14	16.3	3.7	25	17.3	3.5	23	17.3	5.0	10
Young driver	13.7	5.0	18	19.6	3.4	9	17.5	3.5	19	11.2	4.5	22
Wine	15.6	5.8	16	15.9	3.8	28	15.3	3.7	28	14.4	4.1	16
Friends	21.9	4.7	10	19.9	3.3	7	17.5	3.5	20	17.8	4.9	9
Parent	23.1	4.7	5	16.9	3.7	20	17.4	3.5	22	21.2	4.5	4
Hard liquor	10.5	5.9	24	16.8	4.1	22	19.9	4.2	2	10.2	4.9	25
Freedom	23.0	4.0	6	20.6	3.8	3	18.4	3.5	4	17.1	4.2	11
Drugs	8.6	5.8	26	17.0	4.6	19	19.5	4.6	4	9.4	4.8	27
Self-confidence	23.4	4.4	3	19.5	3.7	10	18.4	3.8	12	19.9	4.3	5
Riding with an unsafe driver	7.1	4.3	27	16.2	3.8	26	18.2	4.2	14	8.8	4.4	28
Myself	23.1	3.9	4	22.1	3.5	1	16.7	3.7	25	19.5	4.2	6
The future	20.6	5.7	11	20.0	4.2	6	18.4	3.7	11	15.6	5.2	14
Averages	16.8	5.2	14	17.7	3.9	14	18.1	4.0	14	15.2	4.7	14

*n=312-316
**Rank of concept mean within dimension

The concepts which have the strongest dimension scores by virtue of being the farthest from the mean, either on the high or low end of the range, on more than one dimension are those which will be reported as being "saturated with meaning." These include **safe driving**, **riding with an unsafe driver**, **drinking and driving**, **drugs**, **hard liquor**, **myself**, **self-control**, **seat belts**, **parent**, **self-confidence**, **anger**, and **peer pressure** (while peer pressure was not rated more than one standard deviation beyond the mean on more than one dimension, it was included with this group because of other indications of its importance). These concepts are discussed below.

Safe driving. Considering the context in which the YDSD was administered, it is not surprising to see strong feelings with regard to **safe driving**. The means on this concept for the Evaluative and Stability dimensions were the highest within their respective groups. These results suggest that the sample has a positive attitude toward **safe driving**. But, as reflected by DSD findings, the meaning of **safe driving** among young drivers varies greatly and may not be consistent with the views of traffic safety specialists.

Riding with an unsafe driver. Respondents had a very low evaluation of **riding with an unsafe driver** (mean of 7.1) and they also gave it the lowest Stability rating (mean of 8.8) in comparison to other concepts. This may suggest that even though they know it is not a good idea to take a ride with anyone who is thought to be unsafe (for whatever reason), they also know that they have been, or could very well be, in a position where their judgment does not prevail and they, in effect, lose control over the matter.

Drinking and Driving. The analysis of feelings about drinking and driving is similar to that of **riding with an unsafe driver**. In comparison to all the other concepts, **drinking and driving** was given the lowest Evaluative rating (mean of 7.0). Obviously young drivers do not think highly of this idea but, as will become apparent, their connotative meanings and their behavior are sometimes inconsistent. Furthermore, their Stability rating was low (mean of 9.5) indicating that they are unsettled about the concept.

Drugs. Drugs were evaluated third lowest of all the concepts. The Stability mean for **drugs** was very low (9.4), second only to **riding with an unsafe driver**. Thus these sample groups had negative connotations about **drugs**.

Hard Liquor. The mean scores for **hard liquor** on the Evaluative and Stability dimensions were 10.5 and 10.2, respectively. In both cases, these means were more than one standard deviation below the average within their group. These results suggest that young people tend to have negative feelings about **hard liquor**, which are similar to their connotations about **drugs**, **riding with an unsafe driver**, **drinking and driving**, and **anger**. Despite the common active ingredient (alcohol) in **hard liquor**, **beer**, and **wine**, the respondents did not indicate negative connotations regarding **beer** or **wine**.

Myself. The Evaluative dimension **myself** was rated fourth highest (mean of 23.1), after **safe driving**, **self-control**, and **self-confidence**. These concepts, along with **parent**, **freedom**, **driving**, and **seat belts**, were one standard deviation above the average mean in the Evaluative dimension. In the Activity dimension, **myself** (22.1) was the first and the only concept one standard deviation above the average mean. The rating on the Evaluative dimension suggests that in general, the young drivers in our sample population feel good about themselves. The high Activity rating indicates that they tend to consider themselves as **young**, **fast**, **alive**, and **open** (the adjective choices which result in high scores in the Activity dimension), which is compatible with society's perception of 18-22 year olds. Although not quite one standard deviation above the mean, the respondents rated **myself** sixth highest in Stability, after **safe driving**, **seat belts**, **self-control**, **parent**, and **self-confidence**. This could suggest that a good portion of our sample has a feeling of Stability about themselves.

Self-control. **Self-control** ranked second highest in the Evaluative dimension (mean of 23.5) after **safe driving**. This concept also received a high Stability rating (mean of 21.5) preceded only by **safe driving** and **seat belts**. This latter result suggests that, in general the group has positive feelings associated with **safe driving** and **self-control**.

Seat belts. On the Evaluative dimension, **seat belts** was rated eighth highest. The mean of 22.4 on the Evaluative dimension was one standard deviation above the dimension mean. The mean score on the Stability dimension was 22.0, which was second only to **safe driving** and almost one and one-half standard deviations above the mean for the Stability dimension. Thus many respondents have positive connotations about **seat belts**, similar to those associated with **safe driving**, **self-control**, and **parent**.

Parent. The mean score for **parent** on the Evaluative dimension was 23.1, and 21.2 on the Stability dimension. In both cases, these means were more than one standard deviation above the grand mean in their respective groups. The results are encouraging in that they suggest for this sample parents are viewed favorably.

Self-confidence. **Self-confidence** was rated third highest on the Evaluative dimension with a mean of 23.4. This concept, along with only five others, was one standard deviation above the mean. The mean in the Stability dimension for **self-confidence** (19.9) was fifth highest, and one standard deviation above the average mean. These results suggest that positive connotations are associated with a high degree of **self-control**.

Anger. The mean score for **anger** in the Evaluative dimension was 9.8, the lowest across all concepts except for **drinking and driving** and **riding with an unsafe driver.** The mean score for **anger** on the Stability dimension was 10.6, also quite low. Only the two concepts mentioned above, along with **drugs** and **hard liquor** were viewed as being less stable than **anger**.

Peer Pressure. The mean score for **peer pressure** on the Evaluative dimension was 10.9, which was more than one standard deviation below the mean in the Evaluative dimension. **Peer pressure** was evaluated less favorably than 22 of the 28 concepts. It seems clear that despite the potentially favorable influence of **peer pressure**, for our sample this concept had negative connotations. Even though it was more than one standard deviation from the mean on only one dimension, it is mentioned because of its importance.

Summary. The semantic differential results for the total sample indicated that young drivers had strong positive feelings about **safe driving**, **self-control**, **self-confidence**, **myself**, **parent**, and **freedom**, and had the most negative feelings about **riding with an unsafe driver**, **drinking and driving**, **drugs**, **anger**, **hard liquor**, and **peer pressure**. In the section that follows, the connotative meanings of the group are reported for females and males separately and by participants' driving cautiousness, a variable based on the driving behavior composite score.

Semantic Differential Concepts Discriminating Between Males and Females

Five of the 28 concepts investigated were directly related to driving: (1) **seat belts**, (2) **speeding**, (3) **safe driving**, (4) **drinking and driving**, and (5) **riding with an unsafe driver**. No significant differences were observed in male and female ratings of **seat belts**, but statistically significant differences were found for the other four concepts. In every case where a difference was observed, females' ratings were more favorable than males' from a traffic safety perspective. Males' mean score on the Evaluative dimension for speeding was higher than females', while their evaluation of the concept **safe driving** was significantly lower than that of females. Males and females both evaluated **drinking and driving** as negative, but females slightly more so. Similarly, while both males and females thought negatively of **riding with an unsafe driver**, females' ratings were significantly more negative than those of males. Results for these and other concepts are shown in Table 10.

Males' and females' connotative meanings associated with the concept **beer** differed significantly on the Evaluative and Stability dimensions. Males obviously think more favorably about **beer** than females do. Similar results were observed for **hard liquor**, with males rating it more favorably on the Evaluative and Stability dimensions. No significant differences were observed regarding **wine**.

The trend that females' ratings tended to be more favorable from a traffic safety perspective was also observed for other concepts less specifically related to driving. For example, males had significantly more positive evaluations of the concepts **risk taking**, **drinking**, and **drugs**, while females had higher evaluations of **myself**, **the future**, and **self-control**. These findings are consistent with results from the DSD presented earlier.

Selected ratings of males and females on the Potency and Stability dimensions reinforce the trends described above. For example, males viewed **risk-taking**, **speeding**, **drinking**, **beer**, **drinking and driving**, **hard**

liquor, **drugs**, and **riding with an unsafe driver** as being more stable than did females. Males viewed **drugs**, **drinking and driving**, and **beer** as being less potent than females. Not surprisingly, they viewed the concept **myself** as being more potent than did females.

Summary. Overall, the connotative meanings that males and females associated with the various concepts were similar. There were, however, statistically significant differences in numerous dimension scores. What seems striking is not the magnitude of the differences in mean score, but rather the consistency in the pattern of responses. In virtually every instance of statistically significant differences, the ratings of females could be considered preferable from a traffic-safety perspective. When this pattern of connotative meaning scores was considered along with the male/female results on the self-reported driving behavior scale, it seemed reasonable to conclude that connotative meanings are related to driving behavior. This hypothesis is confirmed in the analysis presented below.

Prediction of Driving Behavior Composite Scores

As discussed earlier, two of the instruments used in the study were the 28-page Semantic Differential (SD), especially adapted for young drivers, and the Data Sheet on Driving (DSD). The latter included six items* dealing with behavior related to driving. These items were analyzed, first on a one-by-one basis and then as a composite obtained by adding the scores on the six single items (appropriately reflected). A high score on the Driving Behavior Composite (DBC) indicated a high degree of self-reported cautiousness in driving-related behavior.

The SD yields scores on each of four dimensions, Evaluative (E), Activity (A), Potency (P), and Stability (S), for each of 28 noun concepts related to driving. A total score [T] for each concept was also obtained, although its meaning is questionable. A high dimension score means higher Value (Evaluative), higher Activity, higher Potency, or higher Stability ascribed to a concept by the respondent. For example, a high Evaluative score on the concept **seat belts** would mean that the respondent values belts highly, where as low Evaluative score on the concept **beer** would mean that the respondent considers beer to have little value.

During the process of constructing the SD and DBC for the study, it was assumed that both would be measures of quite similar, if not identical constructs. Thus, there should be a fairly strong statistical relationship between the DBC and at least some of the dimension scores on the SD. And so, using again the examples in the previous paragraph, one might expect a high value on **seat belts** to have a high cautiousness score on the DBC, and a high value on **beer** to show a lower cautiousness score.

Since the SD is a more subtle measure of potential driving-related behavior than is the DBC, it would be desirable to use it, perhaps

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*Only five of the six items were administered to the entire group (308 usable responses). There were 270 usable responses to the entire set of six items.

TABLE 10

ANALYSIS OF VARIANCE OF MEANS FOR EACH CONCEPT ON EACH DIMENSION FOR MALES AND FEMALES

Concepts	DIMENSION	MALES			FEMALES			F RATIO	SIG. LEVEL
		MEAN	S.D.	(n)	MEAN	S.D.	(n)		
1. Car	Evaluative	21.855	4.294	152	21.884	4.039	155	0.00	NS
2. Car	Activity	19.572	3.916	152	19.155	3.383	155	1.00	NS
3. Car	Potency	18.127	3.860	150	18.276	3.756	156	0.12	NS
4. Car	Stability	17.106	3.772	151	16.783	3.954	157	0.54	NS
5. Drug	Evaluative	22.404	4.160	151	22.414	4.705	157	0.00	NS
6. Drug	Activity	20.243	3.668	152	19.718	3.246	156	1.77	NS
7. Drug	Potency	17.020	2.878	152	16.892	3.067	157	0.14	NS
8. Drug	Stability	18.327	4.451	153	18.400	4.127	155	0.02	NS
9. Risk Taking	Evaluative	13.179	6.190	151	10.331	6.454	157	15.59	.001
10. Risk Taking	Activity	18.921	4.325	152	18.968	4.422	157	0.01	NS
11. Risk Taking	Potency	17.776	4.038	152	17.617	4.195	154	0.11	NS
12. Risk Taking	Stability	12.649	5.347	151	10.871	5.652	155	7.98	.01
13. Peer Pressure	Evaluative	10.993	5.380	152	10.834	5.794	157	0.06	NS
14. Peer Pressure	Activity	18.331	4.028	151	19.102	3.954	157	2.87	NS
15. Peer Pressure	Potency	18.616	4.238	151	19.141	5.036	156	0.97	NS
16. Peer Pressure	Stability	13.033	5.311	150	12.000	5.32.	157	2.89	NS
17. Anger	Evaluative	10.288	5.579	153	9.471	5.242	157	1.76	NS
18. Anger	Activity	18.171	3.487	152	17.962	3.429	157	0.28	NS
19. Anger	Potency	19.318	3.942	151	19.439	4.252	157	0.0	NS
20. Anger	Stability	1 .118	5.170	152	10.006	4.275	156	4.24	.05
21. Power	Evaluative	18.974	5.009	152	17.782	5.152	156	4.23	.05
22. Power	Activity	20.325	3.932	151	19.058	3.468	156	8.98	.01
23. Power	Potency	20.347	4.274	150	19.423	3.971	156	3.84	NS
24. Power	Stability	14.717	4.430	152	14.357	4.422	157	0.51	NS
25. Partying	Evaluative	18.268	5.309	153	16.218	6.041	156	10.03	.01
26. Partying	Activity	21.477	4.333	153	20.929	4.047	154	1.31	NS
27. Partying	Potency	19.748	4.592	151	19.175	4.324	154	1. 6	NS
28. Partying	Stability	13.013	4.663	152	11.723	4.733	155	5.79	.05
29. Seat Belts	Evaluative	22.007	5.022	151	22.949	5.130	157	2.65	NS
30. Seat Belts	Activity	16.763	4.466	152	16.758	4.587	157	0.00	NS
31. Seat Belts	Potency	17.453	3.929	148	17.510	4.066	157	0.02	NS
32. Seat Belts	Stability	21.572	4.771	152	22.586	4.623	157	3.60	NS
33. Speeding	Evaluative	13.815	5.186	151	11.361	4.929	155	18.00	.001
34. Speeding	Activity	20.934	4.057	151	20.033	4.116	153	3.69	NS
35. Speeding	Potency	19.160	3.966	150	19.013	3.872	154	0.11	NS
36. Speeding	Stability	11.336	4.545	152	9.826	4.546	155	8.47	.01
37. Police	Evaluative	17.980	5.253	152	18.529	5.157	157	0.86	NS
38. Police	Activity	15.816	3.828	152	16.795	3.386	156	5.66	.05
39. Police	Potency	19.382	3.909	152	19.439	3.375	155	0.02	NS
40. Police	Stability	18.431	4.907	153	18.392	4.855	157	0.69	NS

TABLE 10 (continued)

Concepts	DIMENSION	MALES MEAN	MALES S.D.	MALES (n)	FEMALES MEAN	FEMALES S.D.	FEMALES (n)	F RATIO	SIG. LEVEL
41. My risk*	Evaluative	13.382	5.740	152	12.989	6.047	157	0.52	NS
42. My risk	Activity	16.592	3.033	152	16.923	3.799	156	0.71	NS
43. My risk	Potency	16.166	4.635	151	16.214	4.653	154	0.01	NS
44. My risk	Stability	16.092	5.063	153	15.391	5.860	156	1.26	NS
45. Drinking	Evaluative	14.654	5.876	153	12.420	6.174	157	10.63	.01
46. Drinking	Activity	18.238	4.554	151	17.827	3.856	156	0.73	NS
47. Drinking	Potency	18.126	4.679	151	17.690	4.774	155	0.65	NS
48. Drinking	Stability	13.217	5.011	152	11.809	5.665	157	5.34	.05
49. Safe Driving	Evaluative	23.660	3.962	153	25.318	3.472	157	15.38	.001
50. Safe Driving	Activity	17.296	3.880	152	17.409	3.425	154	0.07	NS
51. Safe Driving	Potency	15.711	3.912	152	15.695	4.105	154	0.00	NS
52. Safe Driving	Stability	21.658	4.251	152	22.745	3.843	157	5.57	.05
53. Beer	Evaluative	15.834	6.109	151	12.363	6.296	157	24.09	.001
54. Beer	Activity	18.166	3.879	151	17.232	4.285	155	3.98	.05
55. Beer	Potency	17.454	3.856	152	18.344	4.004	157	3.96	.05
56. Beer	Stability	14.007	4.116	151	12.121	5.305	157	12.08	.001
57. Drinking and Driving	Evaluative	7.836	4.855	152	6.218	4.518	156	9.17	.01
58. Drinking and Driving	Activity	15.880	4.530	150	16.353	4.235	156	0.89	NS
59. Drinking and Driving	Potency	18.322	4.712	152	19.513	4.919	156	4.70	.05
60. Drinking and Driving	Stability	10.248	4.742	153	8.826	5.120	155	6.40	.05
61. Self-Control	Evaluative	22.796	4.274	152	24.265	3.856	155	10.00	.01
62. Self-Control	Activity	18.349	3.590	152	18.564	3.589	156	0.28	.05
63. Self-Control	Potency	17.605	3.432	152	17.615	3.555	156	0.00	NS
64. Self-Control	Stability	20.935	4.539	153	22.231	3.902	156	7.26	.01
65. 21-Year-Old Drinking Age	Evaluative	16.830	6.812	153	18.948	6.399	154	7.88	.01
66. 21-Year-Old Drinking Age	Activity	16.139	3.987	151	16.506	3.535	156	0.73	NS
67. 21-Year-Old Drinking Age	Potency	17.164	3.709	152	17.603	3.256	156	1.22	NS
68. 21-Year-Old Drinking Age	Stability	16.768	5.089	151	17.878	5.043	156	3.68	NS
69. Young Driver	Evaluative	13.417	4.678	151	13.968	5.413	155	0.90	NS
70. Young Driver	Activity	19.375	3.567	152	19.935	3.231	155	2.08	NS
71. Young Driver	Potency	17.235	3.496	153	17.703	3.600	155	1.34	NS
72. Young Driver	Stability	11.235	4.285	153	11.173	4.674	156	0.01	NS
73. Wine	Evaluative	15.849	5.506	152	15.333	6.106	156	0.60	NS
74. Wine	Activity	15.760	3.782	150	15.968	3.786	154	0.23	NS
75. Wine	Potency	15.523	3.714	153	15.226	3.651	155	0.50	NS
76. Wine	Stability	14.732	3.602	153	13.955	4.659	155	2.68	NS
77. Friends	Evaluative	21.397	4.490	151	22.455	4.836	156	3.94	.05
78. Friends	Activity	19.399	3.564	153	20.268	2.943	157	5.49	.05
79. Friends	Potency	17.699	3.660	153	17.288	3.470	156	1.03	NS
80. Friends	Stability	17.895	4.503	153	17.726	5.190	157	0.09	NS
81. Parent	Evaluative	22.461	4.600	152	23.662	4.708	157	5.15	.05
82. Parent	Activity	16.704	4.010	152	17.122	3.336	156	0.99	NS
83. Parent	Potency	17.553	3.659	150	17.194	3.325	155	0.81	NS
84. Parent	Stability	21.138	4.213	152	21.363	4.796	157	0.19	NS

*My Risk of a Serious Automobile Accident

TABLE 10 (continued)

Concepts	DIMENSION	MALES MEAN	MALES S.D.	MALES (n)	FEMALES MEAN	FEMALES S.D.	FEMALES (n)	F RATIO	SIG. LEVEL
85. Hard Liquor	Evaluative	11.732	5.701	153	9.115	5.655	156	16.41	.001
86. Hard Liquor	Activity	16.737	4.256	152	16.916	4.091	155	0.14	NS
87. Hard Liquor	Potency	19.586	4.192	152	20.226	4.331	155	1.73	NS
88. Hard Liquor	Stability	11.191	4.717	152	9.174	4.850	155	0.22	.001
89. Freedom	Evaluative	22.673	4.188	150	23.331	3.912	157	2.03	NS
90. Freedom	Activity	20.536	3.728	153	20.637	3.896	157	0.05	NS
91. Freedom	Potency	18.653	3.872	150	18.128	3.141	156	1.70	NS
92. Freedom	Stability	17.229	3.776	153	17.006	4.571	157	0.22	NS
93. Drugs	Evaluative	9.424	6.133	151	7.808	5.122	156	6.30	.05
94. Drugs	Activity	16.613	5.040	150	17.321	4.091	156	1.82	NS
95. Drugs	Potency	18.576	4.647	151	20.258	4.501	155	10.34	.01
96. Drugs	Stability	10.197	4.962	152	8.694	4.469	157	7.84	.01
97. Self-Confidence	Evaluative	22.821	4.625	151	23.891	4.210	156	4.50	.05
98. Self-Confidence	Activity	19.233	3.902	150	19.677	3.462	155	1.11	NS
99. Self-Confidence	Potency	18.730	4.039	152	17.935	3.321	154	3.54	NS
100. Self-Confidence	Stability	19.776	4.251	152	19.994	4.396	156	0.19	NS
101. Riding with an unsafe driver	Evaluative	8.026	4.821	151	6.224	3.718	156	13.50	.001
102. Riding with an unsafe driver	Activity	16.205	4.114	151	16.224	3.388	156	0.00	NS
103. Riding with an unsafe driver	Potency	17.592	3.845	152	18.729	4.361	155	5.86	.05
104. Riding with an unsafe driver	Stability	9.507	4.438	152	8.218	4.388	156	6.57	.05
105. Myself	Evaluative	22.428	3.916	152	23.752	3.700	157	9.34	.01
106. Myself	Activity	21.821	3.807	151	22.344	3.127	157	1.74	NS
107. Myself	Potency	17.840	3.673	150	15.564	3.351	156	32.11	.001
108. Myself	Stability	19.349	4.108	152	19.777	4.227	157	0.82	NS
109. The Future	Evaluative	19.748	6.259	151	21.462	5.142	156	6.89	.01
110. The Future	Activity	19.789	4.329	152	20.147	4.033	156	0.56	NS
111. The Future	Potency	18.349	4.027	152	18.335	3.463	155	0.00	NS
112. The Future	Stability	15.543	5.161	151	15.679	5.300	156	0.05	NS

exclusively, in future educational and research activities dealing with young drivers. The SD is harder to "fake" and less likely to bring out "socially desirable" responses than the DBC. It is, however, quite long and takes much more time. Therefore, the investigators tried to find a workable but much reduced form of the SD, consisting perhaps of 10 concepts or fewer, that could be used to predict scores on the DBC. The steps undertaken in this effort are described in the following sections.

Since there were really two forms (5- and 6-item) of the DBC, both were used separately as criteria. The analyses were done separately for males and females as well as for the total group.

Analyses Using the 5-Item DBC (DBC5) As Criterion

It was expected that the concepts and dimensions found to be satisfactory predictors of the DBC for males and females separately might differ from those for the total group (n=308). Because of incomplete responses, data for eight participants were excluded. Analyses are described in detail below. Only the final results are given for males and females.

Total Group. The first step involved a multiple regression (MR) analysis using the 28 scores on the E dimension (one for each concept) as independent variables and the DBC5 score as the dependent variable. This analysis was repeated for the A, P, and S dimensions as well as for the total score (T). Standardized regression coefficients greater than .10 for all of these analyses are shown as "X" in Table 11.

The choice of .10 as a cut-off was arbitrary, but seemed to yield an appropiate basis on which to select concepts having predictive value. The number of X's among the four dimension scores (i.e., E, A, P, and S) was recorded for each concept. The greater this number, the more useful the concept was judged to be in terms of predictive power. On this basis, 10 concepts were selected for inclusion in further MR analyses. These ten concepts were: **peer pressure**, **anger**, **seat belts**, **speeding**, **risk of serious accident**, **drinking**, **beer**, **self-confidence**, **riding with unsafe driver**, and **myself**.

The 40 dimension scores corresponding to the 10 concepts selected in step 1 were used as independent variables in a MR analysis with DBC5 as the dependent variable (Table 12). The absolute value of the 40 resulting standardized regression coefficients were ranked from high (Rank 1) to low (Rank 40). The dimensions having ranks from 1 to 10 were used to identify those concepts that appeared to be most predictive of the DBC5. The concepts thus identified were **anger**, **seat belts**, **speeding**, **beer**, **self-confidence**, and **myself**, although the importance of **anger** was questionable. Accordingly, two MR analyses were carried out, one including **anger**, and the other omitting it. In both cases, all dimensions corresponding to the indicated concepts were included. In addition, however, a separate MR analysis was computed using only the 10 dimensions having ranks from 1 to 10 (as described above) as the independent variables.

The results of these analyses indicated that **anger** should be included as one of the total of six concepts used to predict DBC5. The results

TABLE 11

DIMENSIONS HAVING ABSOLUTE VALUES OF STANDARDIZED REGRESSION COEFFICIENTS EXCEEDING .10 WHEN EACH OF FOUR DIMENSIONS (E, A, P, S) WERE USED TO PREDICT DBC5, TOTAL GROUP (N=308)

Concept*	Dimension				No. of X's	Concepts Selected
	E	A	P	S		
1	X		X		2	
2		X			1	
3			X		1	
4	X		X	X	3	*
5	X		X		2	*
6					0	
7		X			1	
8	X	X	X	X	4	*
9	X	X	X	X	4	*
10					0	
11	X			X	2	*
12		X		X	2	*
13					0	
14	X	X		X	3	*
15					0	
16	X				1	
17			X		1	
18					0	
19				X	1	
20		X			1	
21				X	1	
22					0	
23					0	
24		X			1	
25		X	X		X 3	*
26			X	X	2	*
27		X		X	X 3	*
28					0	

*See p. 12 for concepts.

TABLE 12

STANDARDIZED REGRESSION COEFFICIENTS OBTAINED WHEN 40 DIMENSION SCORES BASED ON TEN SELECTED CONCEPTS WERE USED TO PREDICT DBC5[1], TOTAL GROUP (N=308)

Concept	Dimension[2]	Standardized[3] Coefficients	Rank	Selected Concepts
Peer Pressure	E	05		
	A	01		
	P	07		
	S	-01		
Anger	E	13	9	*
	A	-05		
	P	-07		
	S	-09		
Seat Belts	E	28	1	*
	A	-01		
	P	11		
	S	02		*
Speeding	E	-12		
	A	-15	5	
	P	-12	10	
	S	-03		
Risk of Serious Accident	E	09		
	A	06		
	P	-01		
	S	02		
Drinking	E	01		
	A	01		
	P	09		
	S	-03		
Beer	E	-24	2	*
	A	02		
	P	-14	8	
	S	02		
Self-confidence	E	-14	6	*
	A	-04		
	P	02		
	S	21	3	
Ride with Unsafe Driver	E	-01		
	A	05		
	P	08		
	S	01		
Myself	E	16	4	*
	A	-14	7	
	P	-10		
	S	02		

[1]The multiple correlation based on all 40 dimensions was .70, significant beyond the .001 level.

[2]E=Evaluative, A=Activity, P=Potency, S=Stability.

[3]Decimal Points Omitted.

TABLE 13

RESULTS OF MULTIPLE REGRESSION ANALYSIS TO PREDICT DBC5 FROM 24 DIMENSION SCORES BASED ON SIX SELECTED CONCEPTS, TOTAL GROUP (N=308)

Concept	Dimension[1]	Standardized[2] Coefficients	Multiple R	Significance
Anger	E	14	.67	.001
	A	-04		
	P	-05		
	S	-06		
Seat Belts	E	25		
	A	-01		
	P	12		
	S	02		
Speeding	E	-13		
	A	-11		
	P	-11		
	S	-04		
Beer	E	-24		
	A	03		
	P	-08		
	S	02		
Self-confidence	E	-13		
	A	-06		
	P	04		
	S	21		
Myself	E	18		
	A	-15		
	P	-12		
	S	01		

[1]E=Evaluative, A=Activity, P=Potency, S=Stability.

[2]Decimal Points Omitted.

TABLE 14

RESULTS OF MULTIPLE REGRESSION ANALYSIS TO PREDICT DBC5
FROM 10 SELECTED DIMENSIONS, TOTAL GROUP (N=308)

Concept	Dimension	Standardized[1] Coefficients	Multiple R	Significance
Anger	Evaluative	03	.63	.001
Seat Belts	Evaluative	29		
Speeding	Activity	-15		
Speeding	Potency	-08		
Beer	Evaluative	-27		
Beer	Potency	-10		
Self-confidence	Evaluative	-20		
Self-confidence	Stability	26		
Myself	Evaluative	18		
Myself	Activity	-18		

[1]Decimal Points Omitted.

in Table 13 show a multiple correlation (R) of .67, significant beyond the .001 level. Table 14 shows an R of .63 when only the ten highest ranked dimension scores are used as predictors. Thus, there is only a modest increase in R when 24 instead of 10 dimension scores are used as predictors.

It should be mentioned that the total scores (T) on the same concepts as listed above were also used in a MR analysis to predict DBC5. However, in no case did the value of R reach even .6. Therefore, the total scores were not further analyzed, in part because of the difficulty of interpreting them. Combining Value, Activity, Potency, and Stability leaves one with a construct of questionable meaning.

Males and Females. The same basic steps were followed in analyzing the data for males and females separately. For males, the ten concepts initially selected were **car**, **peer pressure**, **power**, **seat belts**, **speeding**, **beer**, **friends**, **self-confidence**, **myself**, and **the future**. For females, they were **car**, **anger**, **seat belts**, **speeding**, **risk of serious** accident, **drunk driving**, **wine**, **liquor**, **myself**, and **the future**.

Through multiple-regression analysis, the ten concepts for males were reduced to six concepts (24 dimensions), namely **car**, **peer pressure**, **seat belts**, **beer**, **self-confidence**, and **the future**. These twenty-four dimensions were used to predict scores on the DBC5, yielding a multiple correlation of .72. The results are given in Table 15.

The ten highest ranking individual dimensions were also selected and used to predict DBC5 scores. The multiple correlation was .64. The results are shown in Table 16.

For females, the ten concepts were also reduced to six, namely, **car**, **seat belts**, **speeding**, **risk of serious accident**, **liquor**, and **myself**. Table 17 shows the results of a MR analysis using the corresponding 24 dimensions as predictors of DBC5. The multiple correlation was .70. The ten highest ranking individual dimensions yielded a multiple R of .65. The results are given in Table 18.

It is interesting to note the rather marked differences among the six most predictive concepts for the Total Group, Males and Females. The only concept common to all is **seat belts**. For Males and Females, only **car** and **seat belts** are common. It should also be noted that the multiple correlations for Males and Females were somewhat larger (.72 and .70, respectively), than for the Total Group (.67). These observations suggest that separate (male and female) reduced forms of the DBC5 should be used in future research and educational applications.

Attention should also be given to the signs of the standardized coefficients in Tables 12-18. Consider, for example, those in Table 15. A positive sign indicates a positive relationship between a dimension and the DBC5. It is not surprising, therefore, to note that **beer**-Evaluative has a negative sign, whereas **seat belts**-Evaluative has a positive sign, keeping in mind that DBC5 is a measure of cautiousness. Also, Stability in **car**, **self-confidence**, and **the future** are positively related to cautiousness, whereas **self-confidence** is ascribed little value (Evaluative)

TABLE 15

RESULTS OF MULTIPLE REGRESSION ANALYSIS TO PREDICT DBC5 FROM 24 DIMENSION SCORES BASED ON SIX SELETED CONCEPTS, MALES (N=150)

Concept	Dimension[1]	Standardized[2] Coefficients	Multiple R	Significance
Car	E	-14	.72	.001
	A	-07		
	P	-12		
	S	18		
Peer Pressure	E	12		
	A	-04		
	P	23		
	S	-04		
Seat Belts	E	38		
	A	-04		
	P	05		
	S	-06		
Beer	E	-18		
	A	-09		
	P	-12		
	S	01		
Self-confidence	E	-29		
	A	05		
	P	-11		
	S	34		
The Future	E	-06		
	A	-01		
	P	-03		
	S	23		

[1]E=Evaluative, A=Activity, P=Potency, S=Stability.

[2]Decimal Points Omitted.

TABLE 16

RESULTS OF MULTIPLE REGRESSION ANALYSIS TO PREDICT DBC5 FROM 10 SELECTED DIMENSIONS, MALES (N=150)

Concept	Dimension	Standardized[1] Coefficients	Multiple R	Significance
Peer Pressure	Evaluative	18	.64	.001
Peer Pressure	Potency	27		
Seat Belts	Evaluative	26		
Speeding	Activity	-26		
Speeding	Stability	-14		
Self-confidence	Evaluative	-35		
Self-confidence	Potency	-14		
Self-confidence	Stability	39		
Myself	Evaluative	08		
Future	Stability	17		

[1]Decimal Points Omitted.

TABLE 17

RESULTS OF MULTIPLE REGRESSION ANALYSIS TO PREDICT DBC5 FROM 24 DIMENSION SCORES BASED ON SIX SELECTED CONCEPTS, FEMALES (N=156)

Concept	Dimension[1]	Standardized[2] Coefficients	Multiple R	Significance
Car	E	-21	.70	.001
	A	-08		
	P	-09		
	S	-01		
Seat Belts	E	22		
	A	03		
	P	13		
	S	15		
Speeding	E	-19		
	A	-10		
	P	-07		
	S	12		
Risk of Serious Accident	E	15		
	A	-08		
	P	-01		
	S	-03		
Liquor	E	-05		
	A	01		
	P	15		
	S	15		
Myself	E	17		
	A	-26		
	P	05		
	S	09		

[1]E=Evaluative, A=Activity, P=Potency, S=Stability.

[2]Decimal Points Omitted.

TABLE 18

RESULTS OF MULTIPLE REGRESSION ANALYSIS TO PREDICT DBC5 FROM 10 SELECTED DIMENSIONS, FEMALES (N=156)

Concept	Dimension	Standardized[1] Coefficients	Multiple R	Significance
Car	Evaluative	-22	.65	.001
Seat Belts	Evaluative	35		
Speeding	Evaluative	-20		
Risk of Serious Accident	Evaluative	15		
Liquor	Potency	12		
Liquor	Stability	22		
Myself	Evaluative	14		
Myself	Activity	-32		
Myself	Stability	18		
Future	Stability	-13		

[1]Decimal Points Omitted.

among the most cautious males. Furthermore, **peer pressure** has high Potency among the most cautious.

Analyses Using the 6-Item DBC (DBC6) as Criterion

Again the procedures were similar to those described earlier for the 5-item version. For each group (Total Sample, Males and Females), the ten most effective concepts were selected and then further reduced to the six concepts (24 dimensions) having the highest multiple correlations with the DBC6. The ten most effective individual dimensions were also selected for each group. The results are given in Tables 19 and 20 for the Total Sample, Tables 21 and 22 for Males, and Tables 23 and 24 for Females.

Comparison of these tables with Tables 13-18 for the five-item DBC5 shows only minor differences in the multiple correlation coefficients. Those for the six-item DBC6 are slightly higher, possibly because of a slightly larger internal consistency reliability estimate for the six-item version (given elsewhere in this report). The values of the multiple R for DBC5 and DBC6 for the three groups were:

Group	Selected Concepts		Selected Dimensions	
	DBC5	DBC6	DBC5	DBC6
Total	.67	.70	.63	.67
Males	.72	.74	.64	.72
Females	.71	.70	.65	.66

Inspection of Tables 13-24 also reveals some interesting similarities and differences in the concepts that were most effective in predicting self-reported cautiousness in driving behavior. Fourteen of the 28 concepts were included at least once in the multiple regression analyses involving the six selected concepts in Tables 19-24. These 14, as well as the group and DBC version with which they were associated, are:

Concept	5-item DBC5			6-item DBC6		
	Total	Males	Females	Total	Males	Females
Car		X	X			
Peer Pressure		X				
Anger	X					
Seat Belts	X	X	X	X	X	X
Speeding	X		X	X	X	
Risk of Serious Accident			X			X
Drinking					X	
Beer	X	X		X	X	X
Friends					X	X
Liquor			X			
Self-confidence	X	X		X		X
Ride with Unsafe Driver				X	X	
Myself	X		X	X		X
Future		X				

TABLE 19

RESULTS OF MULTIPLE REGRESSION ANALYSIS TO PREDICT DBC6 FROM 24 DIMENSION SCORES BASED ON SIX SELECTED CONCEPTS, TOTAL GROUP (N=270)

Concept	Dimension[1]	Standardized[2] Coefficients	Multiple R	Significance
Seat Belts	E	28	.70	.001
	A	-03		
	P	12		
	S	-04		
Speeding	E	-13		
	A	-15		
	P	-09		
	S	04		
Beer	E	-26		
	A	-01		
	P	-10		
	S	-01		
Self-Confidence	E	-15		
	A	-12		
	P	08		
	S	23		
Ride with Unsafe Driver	E	-09		
	A	03		
	P	06		
	S	02		
Myself	E	20		
	A	-19		
	P	-09		
	S	-01		

[1]E=Evaluative, A=Activity, P=Potency, S=Stability.

[2]Decimal Points Omitted.

TABLE 20

RESULTS OF MULTIPLE REGRESSION ANALYSIS TO PREDICT DBC6 FROM 10 SELECTED DIMENSIONS, TOTAL GROUP (N=270)

Concept	Dimension	Standardized[1] Coefficients	Multiple R	Significance
Car	Activity	-18	.67	.001
Seat Belts	Evaluative	28		
Speeding	Evaluative	-08		
Speeding	Activity	-16		
Beer	Evaluative	-24		
Self-confidence	Evaluative	-22		
Self-confidence	Stability	26		
Ride with Unsafe Driver	Evaluative	-07		
Myself	Evaluative	20		
Myself	Activity	-21		

[1]Decimal Points Omitted.

TABLE 21

RESULTS OF MULTIPLE REGRESSION ANALYSIS TO PREDICT DBC6 FROM 24 DIMENSION SCORES BASED ON SIX SELECTED CONCEPTS, MALES (N=121)

Concept	Dimension[1]	Standardized[2] Coefficients	Multiple R	Significance
Seat Belts	E	34	.74	.001
	A	-03		
	P	08		
	S	-11		
Speeding	E	05		
	A	-25		
	P	-14		
	S	-06		
Drinking	E	-06		
	A	-05		
	P	23		
	S	-05		
Bear	E	-21		
	A	-07		
	P	-31		
	S	01		
Friends	E	-22		
	A	-02		
	P	-04		
	S	22		
Ride with Unsafe Driver	E	-22		
	A	04		
	P	-12		
	S	11		

[1]E=Evaluative, A=Activity, P=Potency, S=Stability.

[2]Decimal Points Omitted.

TABLE 22

RESULTS OF MULTIPLE REGRESSION ANALYSIS TO PREDICT DBC6 FROM 10 SELECTED DIMENSIONS, MALES (N=121)

Concept	Dimension	Standardized[1] Coefficients	Multiple R	Significance
Car	Stability	17	.72	.001
Seat Belts	Evaluative	33		
Speeding	Activity	-31		
Drinking	Potency	21		
Beer	Evaluative	-27		
Beer	Potency	-38		
Friends	Evaluative	-21		
Friends	Stability	19		
Ride with Unsafe Driver	Evaluative	19		
Ride with Unsafe Driver	Stability	16		

[1]Decimal Points Omitted.

TABLE 23

RESULTS OF MULTIPLE REGRESSION ANALYSIS TO PREDICT DBC6 FROM 24 DIMENSION SCORES BASED ON SIX SELECTED CONCEPTS, FEMALES (N=147)

Concept	Dimension[1]	Standardized[2] Coefficients	Multiple R	Significance
Seat Belts	E	36	.71	.001
	A	-04		
	P	09		
	S	-11		
Risk of Serious Accident	E	16		
	A	-14		
	P	05		
	S	02		
Beer	E	-29		
	A	11		
	P	-15		
	S	-01		
Friends	E	-14		
	A	03		
	P	11		
	S	19		
Self-confidence	E	-16		
	A	-23		
	P	29		
	S	29		
Myself	E	15		
	A	-27		
	P	02		
	S	-03		

[1]E=Evaluative, A=Activity, P=Potency, S=Stability.

[2]Decimal Points Omitted.

TABLE 24

RESULTS OF MULTIPLE REGRESSION ANALYSIS TO PREDICT DBC6 FROM 10 SELECTED DIMENSIONS, FEMALES (N=147)

Concept	Dimension	Standardized[1] Coefficients	Multiple R	Significance
Seat Belts	Evaluative	23	.66	.001
Seat Belts	Potency	11		
Risk of Serious Accident	Activity	-12		
Beer	Evaluative	-19		
Drunk Driving	Evaluative	-14		
Friends	Stability	11		
Self-confidence	Activity	-26		
Self-confidence	Potency	23		
Self-confidence	Stability	22		
Myself	Activity	-28		

[1]Decimal Points Omitted.

Note first that only one concept, **seat belts**, appears in all six lists. However, five concepts are common to the Total Group DBC5 and DBC6 lists: **seat belts**, **speeding**, **beer**, **self-confidence**, and **myself**. All of these also appear at least once in the lists for Males and Females on DBC5 and DBC6. Therefore, one might conclude that these five are the most useful for predicting cautiousness in driving behavior.

It is also interesting to note the differences between males and females. For example, **my risk of a serious accident** and **myself** are important only for females, whereas **peer pressure** appears only for males. Furthermore, the concept **car** is important only for predicting DBC5, while **friends** is important only for predicting DBC6.

Summary and Conclusions

An objective of these analyses was to determine whether a reduced version of the SD could measure a construct similar to that measured by the cautiousness score obtained from DBC5 or DBC6. The results reported here strongly suggest that this objective could be achieved with as few as six concepts (24 dimensions) or as few as 10 individual dimensions drawn from several concepts. Multiple correlations in the high 60's and low 70's are respectable for most psychological instruments, especially those in this study.

The results also suggest that separate forms may be desirable for males and females. The multiple Rs, especially for males, were generally larger than for the total group. Furthermore, the relevant concepts for males and females separately were somewhat different from those for the total group. Perhaps further analysis will reveal whether the Rs could stand up if concepts most relevant for the total group were used to predict for males and females separately. If only one form were feasible for both males and females, a 10-concept version for both sexes might be an acceptable compromise if scored differently for males and females. Because of greater face validity, such a form might be preferable in any event. A six-concept form might be judged less acceptable than a 10-concept form simply because of its reduced coverage of seemingly relevant concepts.

Finally, it should be emphasized, in accord with statements in the preceding paragraph, that all the results presented here are empirical. Concepts and dimensions were selected on the basis of statistical evidence only, without regard to content coverage. If greater balance in content is desirable, it would be important to retain at least the five concepts judged to be most useful for prediction--namely, **seat belts**, **speeding**, **beer**, **self-confidence**, and **myself**.

FOCUS GROUP FINDINGS

Our chief finding--an increased understanding of young people's perspectives on automobile accidents--was obtained by listening at great length to young people talk among themselves about probable causes of accidents and possible solutions. We believe that what we heard will be useful in planning future research and education programs. But what we report here cannot fully communicate the experience of the many hours of discussion--the facial expressions, gestures, and general atmosphere of group dynamics within each of the 40 sessions.

The results of the focus group discussions are presented below in three main sections: (1) introductory discussion topics; (2) behaviors related to traffic safety; and (3) additional perspectives related to prevention. Each of these sections also contains collateral case material with implications for research or education.

Introductory Topics

One of the greatest challenges to the focus group moderator is establishing an atmosphere that encourages freedom of expression and facilitates sharing personal opinions and experiences, in this case about several sensitive and emotionally charged topics. Our moderators were able to find a number of non-threatening topics that proved useful for stimulating discussion and establishing a positive psychological climate within the groups without losing their interest. These topics pertained to the social meaning of cars and driving, to young people's opinions about older drivers, and to activities that present fun and excitement. These topics are considered below.

What the Car and Driving Represent

To begin with, the participants were sometimes asked what they thought driving would be like. They said they wanted to drive because "you would be independent and could go wherever you wanted to," or "you would have control," or "you would look cool going to school." One person said, "It's like a statement; it's somewhere between being a kid and almost an adult." Almost all of the participants said they looked forward to getting their driver's license. Some of the advantages they expected to gain were increased independence, fun, excitement, and adult status.

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*The text which follows represents the authors' discussion. Underlined phrases are questions or comments by the moderator. Oral statements or quotations by the participants are in single-spaced text, indented. A double space between blocks of quoted material indicates that another individual in the group is speaking.

Their statements indicated that their parents also had expectations--for example, the chauffeuring of young siblings ("I had two little brothers I had to take to school and other places").

In some cases there was pressure to learn to drive. "My parents wanted me to drive so I wouldn't bug them for rides any more." "Yes, by the time you're 16 it's like, 'Not again, we're not taking you anywhere. We've been taking you places for 16 years.'"

They were asked about their preferences in cars and what the car represents, and the importance of having it.

What is it like having a car?

> You feel a little bit more free when you have your own car. You can actually go places without having anyone drive you.

One male reported that having a car gives young people a chance to express their style; that the type of car you have and its accessories say something about you. Another indicated that "if you put my car down you're putting me down."

Several saw the car as an enhancer of their image or an extension of power.

> I notice the difference between driving the Mustang and the Mazda. You get a lot of looks, especially if you are a girl. I get a lot of looks. But it's the sense of power, it's like, "Get out of my way."

(From another group)

> Having a car gives you a sense of responsibility. You have to take care of the expense of insurance and gas. It is an opportunity to take charge of something and know that you can manage it.

What do these cars do for someone?

> I think they're a real ego trip.
>
> Yes, they are. You just sit in that car and you stop at a light and all these people are just turning and looking at you, people that wouldn't give a hoot if you were driving this little torn-up car. All of a sudden they see this Mercedes, like wow, who's in it?

What kind of cars do you like?

> I like a Mazda RX 7; small, kind of sleeky looking. Not for speed, I don't like a car for how fast it goes because

I don't go that fast. [This is a female talking.] I like it to show that you have a little bit more money. [They laughed.] Well, that's true; I don't like to drive a junk car. And it's small and I'm a small person; I like small things. I like it smaller, comfortable, and sleeky looking.

So a car can in some way be an enhancement?

Oh yes. When you see a nice car going down the street you want to look at it and obviously you are going to look at the person driving it. (Laughter)

(From another group)

Is there anything you think we haven't touched on that is important to the young driver?

I think until you get your own place to live, your car is the next best thing to having a place of your own and that's how I felt. Until just this fall when I had my own apartment, my car was my only place for me. And I think a lot of teenagers feel that way too. If there was some other place where teenagers felt they could go and just do their own thing and not have anybody telling them what to do or how to do it, maybe you wouldn't have to feel so possessive about your car, and need to....I mean, that's where we did all our drinking.

That's where you could express yourself.

Yes, if you wanted to talk to someone you went out in the car. It's like a home.

Well, who would take financial responsibility if, let's say, you had a place somewhere?

You see I don't have a solution.

I didn't feel quite that way because of my room at home. It was understood this was my place and if I don't want to let somebody in, I don't have to. It was very private. My parents were very careful to give me and my sister our own place. It wasn't quite as good. I mean in a car you are totally alone. But I did feel a sense of, "this is my place." With a lot of kids it was just like Mom and Dad can walk in. They decorated the place, so they said what went on. I think if kids were given the right to have privacy in their own home it would help. And that doesn't cost anything.

Most young people (especially males) tended to prefer cars that were expensive, fast, and sporty, although participants (especially females)

indicated that they like economical cars that are reliable and don't break down. In general, they favored front-wheel drive for traction in the winter; it added to their feeling independent. The car was viewed by some as an extension of their own personality, but in any case was highly prized by almost all participants. The high value attached to having a car is not surprising when one hears its advantages expressed by virtually everybody. As will become apparent in later sections, other social and emotional benefits of owning a car and driving that were not expressed under direct questioning emphasize further the social meaning of driving for young adults.

One would think, therefore, that a young person would guard as a treasure the privilege of owning and driving a car. Some young drivers realize it is important that they protect their licenses and cars. But unfortunately many of them do not act responsibly.

Car ownership and driving is one step in the transition from adolescence to adulthood. Carelessness in driving may be one symptom of reluctance to grow up and assume the responsibilities of adulthood. Some ambivalence during this phase of development is understandable. The distinction between perceiving the car as a toy and protecting it for socially responsible pursuits means little to some young drivers. They need guidance in evaluating and appreciating the meaning and worth of private car transportation. They have to learn how they can best "do their own thing" without jeopardizing that other thing--a car--without which they can do little.

Parents and society must face the plain fact that it is necessary for a young person to become not only responsible but also autonomous. The struggle for autonomy is difficult and requires many steps throughout the years of adolescence. Actions taken by parents to help young people establish independence and cope with often difficult problems should be considered more often and more carefully. Granting a young woman the privacy of her own room exemplifies one such action.

Young Drivers' Thoughts Regarding Older Drivers

In many of the sessions one prominent question that was asked in order to promote discussion (which it did) was related to young drivers' perceptions about the worst drivers. To our surprise this topic yielded consistent responses. Time after time the young people spoke of elderly drivers as bad drivers. In some discussions, this appeared to be a "pet peeve" and in others as a defense against what the young perceived to be a criticism of their own driving. Many of them felt that drivers who go below the speed limit and make poor judgments in traffic tend to be senior citizens who on the whole are more dangerous behind the wheel than young drivers who speed. The message from some was that society scrutinizes young drivers because they are young, but overlooks the faults of the older, more established members of society. The following two remarks illustrate some of the complaints about the slow driving of older people:

There are people who will stay in the left lane when

> they shouldn't be, and I hate to stereotype it but a lot of times it's older people who are driving slowly. And give them their due, that's fine, but they should be slipped over in the right lane because that's where slower cars shculd be moving.
>
> Yes, I drive down the highway at a pretty good speed. I do about 70 down there, but in the city I like to do about 40. I don't like these old fogies in the city. They're too slow; they're way too slow.

One participant had doubts about the sensory perceptions of older drivers:

> I think that people over 65 should be given responsive hearing and sight tests.

Specific questions regarding the efficiency of older drivers were not asked in the focus groups, but some participants felt that the declines in sensory perceptions and reflexes associated with the aging process impeded the driving ability of the elderly.

It is interesting to note from a recent study that the older generation tends to view the younger as the worst drivers. Each group, then, points the accusing finger at the other. Despite their differences, however, they have quite a lot in common. For example, they both value highly the independence and mobility conferred by driving; they both are involved in a disproportionately high rate of traffic safety problems; and they are both vulnerable to losing their driving privileges as a result of societal efforts to ensure safe roads.

It would seem, therefore, that the two groups could learn much from each other and be the better for it.

Fun and Excitement

A third topic discussed early as a way to establish rapport with participants and generate positive feelings centered on the things young people did for fun and excitement. Since the participants represented a geographical and occupational cross-section of young drivers, it was not surprising that they expressed interest in a great variety of leisure time activities. Among them were movies, dancing, going to the beach, camping, reading, painting, horseback riding, rock climbing and rappelling, skiing, scuba diving, traveling, and car racing.

Some were excited by risky activities. Others took a calmer view of enjoyment.

> I don't think I'd like to do anything that is semi-dangerous like that [car racing, etc.]. I don't find that exciting any more. I find that too frightening to enjoy. Maybe I'm just a chicken.

Some seemed to think of partying and drinking as good entertainment and did not come up with much else. The availability of interesting things to do ranged from a full schedule of events at a state university, including football and baseball games, concerts, fine art activities, outdoor and hiking clubs, to the "slim pickings" described by military personnel who complain d that there was nothing to do around the base but drink.

Several participants mentioned car cruising as an exciting activity. They called it "wasting gas." The purpose seems to be to drive around and to see and be seen by peers. People like to show off themselves and their cars. It becomes a hazardous activity when the numbers increase and drinking, drugs or speeding are involved.

Do you think that type of activity has anything to do with accidents?

> Oh yes. I saw a couple of accidents. This girl drove into the partition in the road. She was cruising and this other guy was going really fast. He was speeding and he was trying to hit her and she just went up into the partition.

For most people, however, interest in cruising wears off after a certain point.

> In my hometown, they used to cruise Main. But that was the high school age. When you get one or two years past high school, it's still okay, but after two years past high school, it's dumb.
>
> Forget it. Strictly kid stuff.

A young man from Reno, Nevada said he lost interest in cruising after finishing high school. At that time he started to think more about what he was going to do in life, and such things as cruising began to seem pointless. In Arizona, one group discussing cruising described other hazardous driving activities.

> There's a lot of problems when people are showing off because that's when you have accidents. People doing, what are they called, circles?
>
> Donuts.
>
> Donuts in the middle of the street just to show off and then take off, that's when you have a lot of accidents.

One young woman described an incident in which she and some friends scrambled out at an intersection and ran around the car (Chinese fire drill). There was an ambulance behind them.

> We thought for sure that the police caught us. But we noticed that it was an ambulance and we jumped in as soon as we heard the siren and we swerved over to the side. After I did that I realized I shouldn't have done it. We weren't intoxicated, but I can imagine what it would be like if we were intoxicated. I regret doing it because it could have been a really bad situation. A cop would have probably given us a $50 ticket each. There were five of us.

Do you think the other people in the car thought about it? Obviously you thought about it and you made some kind of analysis of it, but do you think they also felt the way you did?

> I know the people in the car. I think some of them would do it again. We were just really high because we were in this car, you know, this brand new car. We had just gotten back from a dance. We weren't intoxicated though. We knew each other quite well; we were very relaxed. We were just having a very good time and we said, 'Hey, let's do this.' We did it in high school and it was okay; little town intersection, you know.

The excitement of high risk driving is appealing to some young people. Lack of money and the inability to find interesting pastimes were mentioned as contributors to boredom and heavy drinking. Thus, while risky driving may seem irrational, young people who drive recklessly are not entirely irrational; but they do have a different model of rationality.

Traffic safety educators should recognize that although many factors influence young people's driving behavior, safety is not always one of the more influential. From a traffic safety educator's perspective, the challenge is to find ways to weave safety goals into the lives of these young people. We must help them understand that under the influence of alcohol, judgment becomes impaired. They would benefit by hearing about the high cost of risk-taking behavior from some of their peers who had to pay for it in one way or another. And there may be some benefit from exploration of exhilarating activities which do not jeopardize the well-being of others.

Behaviors Related to Traffic Safety

Traffic safety problems are caused by many factors, such as vehicular failure, faulty road design, perceptual inabilities and low-grade skills of drivers, unsafe traffic conditions, unsatisfactory laws, and just plain chance. It is clear, however, that an important determinant of accidents and injuries, and one that is potentially amenable to change, is driving behavior. We were particularly interested, therefore, in learning about factors that shape the driving behavior of young people, and if possible, about ways to improve driving habits.

In part by design, and in part through the participants' willingness to discuss certain topics, four behaviors were selected for highlighting: (1) drinking and driving; (2) using seat belts; (3) speeding; and (4) riding as a passenger with an unsafe driver. These behaviors, good or bad, directly influence the odds, up or down, of accident or injury. The opinions, beliefs, and experiences of young people in these four areas have implications for future research and development of educational interventions.

Drinking and Driving

Driving under the influence of alcohol is clearly a key traffic safety problem affecting young people. Even though this could be considered a threatening topic, since it is an illegal behavior which is increasingly looked upon as socially unacceptable, the majority of participants were willing to discuss their views and relate their personal experiences. On the basis of these discussions, a variety of beliefs, opinions, misconceptions, and behavior patterns were identified that demonstrate clearly the need for deeper and wider education about the use and misuse of alcohol.

Our discussions with young people further confirm what national statistics tell us--namely that drinking is viewed as normative behavior in the nation, and yet is a major contribution to traffic accidents. And that many drivers have not yet developed responsible patterns of behavior with regard to alcohol.

Obviously, its adverse effects extend far beyond the implications for traffic safety. Adolescents acquire drinking habits through a complexity of biological, psychological, interpersonal, and sociocultural influences (Valliant, 1982), consideration of which was beyond the scope of this study. We focused on the meaning of responsible use of alcohol. This issue was embodied in many discussions on whether to drive or not after drinking.

Young people's opinions about when they had had too much to drink and drive produced disturbing results. Some participants were candid enough to say that when they are drinking, their judgment is impaired and they don't take into consideration the risks they incur when "driving under the influence." However, the discussions yielded (1) ample evidence of widespread ignorance of the relationship between blood alcohol level and intoxication; (2) numerous examples of inappropriate criteria for choosing to drive after drinking; and (3) indifferent attitudes and misconceptions about the effects of alcohol on judgment and driving behavior.

When questioned about how they know when they've had too much to drink and drive, some people openly admitted that they did not know how to tell.

> That's one thing I don't understand--this legally intoxicate stuff.

I don't know what the legal limit is. I'm 210 pounds... I don't know what the limit is so I can't tell you if I feel within the limit or under the limit.

Well, I don't know, I've never been tested. I know that at least three or four times I've driven when I was too drunk to drive. The other times I knew what I was doing. I don't know where the legal limit is here. How many beers is it supposed to be? Do you know?

More troubling than individuals who admittedly were unable to estimate blood alcohol level were those who erroneously thought they could judge when they had too much to drink.

So how do you tell your limit?

With me it depends. Sometimes if I'm working real hard in the summer and I have one beer, I can feel it then. Then on other nights I can drink a case and can't feel it.

(From another group)

How much could you drink in one hour and still be under the illegal limit?

...a six...with beer it's no problem to drink, but I mean I've had three shots of whiskey and I've been absolutely stupid.

Of great concern were the indicators by which some participants decided not to drive.

How do you tell when you've had a little too much? What would you use as a marker?

I feel if you're getting into the car and you're putting the key into the thing to turn, like if you really can't find that keyhole to get in, then you really shouldn't be getting into the car.

(From another group)

How do you tell if you've had too much to drink and drive?

If I can't even walk.

...if you feel sleepy.

You feel dizzy.

(From another group)

So you feel pretty comfortable if you've had a little to drink, but you're not really drunk. How do you tell when you've had a little too much?

When you start seeing double.

When you can't drive a straight line.

When you're constantly having to look and squint your eyes and everything starts to get blurry, or you feel light-headed, or you start talkin' funny.

Well, you could also tell you've had too much to drink when you're good looking, invisible or ten feet tall and bullet proof.

(From another group)

How do you tell when you've had a little bit too much to drink?

You get them black worleys...you're sitting in that truck and you start spinning. Everybody has gone to a bar or whatever and you can't go out and drink and dance and then not go out and get in your car, but if you're at the point where you're seeing double and getting the black worleys, I think it's time to stop the bus and get out. But, I think everybody's pretty much had a couple beers at the beach or whatever and you gotta drive home. For me, it just makes me a little more cautious, especially watching for officer friendly.

While some frankly reported extreme--sometimes even bizarre--feelings of being "far gone," others relied on their subjective judgment and were confident that they could tell when they were drunk. "You just know," "I've been drinking for a long time. I just know."

Misconceptions about the alcohol content and effects of different kinds of alcoholic beverages also make it difficult to know how much is too much. One male said, "Usually we're drinking light beer now. A few years ago it was worse but we've really calmed down a bit." Some people may believe that light beer is lower in alcohol than regular beer (it may not be) and thus may underestimate the intoxicating effect of light beer. Similar misconceptions may exist regarding the potency of beer as compared to wine or hard liquor. These issues warrant additional consideration and clarification.

Among other poor attitudes or beliefs that probably require corrective attention are overconfidence and lack of perceived susceptibility to danger. The following excerpts from group discussions illustrate the problem.

Don't you think after you've been drinking you're...

I think it's just that the alcohol affects people differently. See, I'll drink and drive...but I know sometimes I get too drunk to drive, I just don't drive. And then the rest of the time I drive. I never have any problem.

(From another group)

How do you tell when you've had too much?

I do not think I've ever had so much to drink that I said I had too much to drive. I'm always driving and I never had an accident. I've never even gotten close. But, I'm so much more careful...

This last sentence exemplifies a rationalization of the driver's conviction that he or she can function under the influence of alcohol.

But as you said, sometimes you wake up the next day and you say, boy how'd I get home?

Yes, then it's only because you forget it. But then you think back and you could remember.

So aren't you worried about that?

Well, I know whenever I drive home. Let's say it's late or whatever. When I'm driving home I always remember. I always know I'm driving and I'm always paying attention real close. And even if I'm way over the alcohol limit, I just pay extra close...really maybe I just get into it more, because I drive a lot. I do a lot of driving. It's like driving is second nature to me. I do it a lot, and even drunk driving, I do that a lot. So it's just like... you should just know how to do it. [P.S. This person indicated later that he had a "perfect clean" record.]

So he thinks he's okay. And it'll be okay probably and you won't become aware until the day you do get pulled over and there's a problem or something happens.

(From another group)

Do you think that drinking might make you overconfident? You might think you can drive better than you really can?

I don't think with driving...you hear about everything that's going on, so you're more cautious about driving.

(From another group)

How would you feel about driving after you had a small amount to drink and you knew you were under the DUI limit?

I think you can tell when you shouldn't be driving. You don't always follow it, because you have that feeling to go.

But you don't always know either. You could say that you think you can.... But I feel that some people they say, 'Oh I can drive,' and you just know that they can't...so I don't think you always know.

Some people tell me I drive better when I've had something to drink.

It's like...once you get into the car maybe you sober up. Some people say that.

If you've had a little bit to drink, do you drive differently?

Probably, yes.

How would it be different?

You try to be more cautious, but you probably aren't.

I think when you're really drunk you try to be more cautious, but when you're just under the DUI limit, well in my case, I get a little bit more...take corners a little sharper.

Have you ever driven when you thought you could drive okay and had second thoughts later?

Most agreed.

To tell you the truth, I do not know which way I came home. I don't remember. I was at this party and next thing you know I'm home. And it's terrible, I was in bed like the next day and gosh, I didn't remember which way I went and that is just horrible. To think that...

Well, how come you did it?

I don't know.

Weren't you worried about having an accident?

No, I wasn't.

(From another group)

<u>If you've just had a little bit to drink, do you think you can drive pretty well?</u>

> You see, when I was talking about stress--worrying about getting a ticket, worrying about crashing--all these worries tense you up and your driving is not as well as when you're relaxed. I'm sure someone that is relaxed and has no worries on their mind can drive a lot better than someone who's under stress. You know when you have a beer or two, a lot of the stress goes away, at least for me it does, and just a little bit improves.

In contrast to the foregoing comments about driving "under the influence," some said that they were sternly warned about this by their parents or they just came to the conclusion themselves that they would never drive after drinking. Some have witnessed or heard about serious or fatal accidents of friends or relatives or have had close calls themselves and decided that it was not worth the risk. Some said that there comes a time when you begin to grow out of this behavior, and most like to think they are beyond that time.

Many think that educational programs and stricter laws may be having an effect on behavior:

> Yes, but only since they've started the campaign to make people more aware of the consequences of drinking and driving, and since they've made the legislation stiffer. You know if you get caught you get a criminal record for drunk driving and that's made people a lot more aware. So as a result, I don't find as many of my friends doing it anymore, or maybe they are just maturing, I don't know.

There appeared to be awareness of some of the options to avoid driving after drinking. Many were familiar with the idea of "designated driver." In their version, however, the designated driver was someone who has been drinking very little rather than nothing at all. In some social circles, it appears to be difficult to find anyone willing to forego drinking for an entire evening.

Another option is "crashing"--that is, staying overnight at the place where you became intoxicated. Many of the participants seem to do this. One woman did say, however, that this was easier for men because the parents of young women are more insistent on having them home. "Contracts for Life" with parents is an idea familiar to most, but many young drivers cannot bring themselves to call their parents. This might be due to embarrassment vis-a-vis their peers or their parents, or both. A few discussants said they had "contracts" with siblings or friends.

It is, of course, encouraging that scores of young people are seeking satisfactory alternatives to drinking and driving. Nevertheless, there are many who drink but have no notion of what it means to be responsible when it comes to drinking and driving. Determining how much is too much may be easy for those who believe in total abstention. But one can find both young people and old for whom drinking and driving is routine. In a sense, the laws that establish the blood alcohol level sanction driving at levels below that limit. Drinking moderately in public and private places and then driving home is in large part accepted behavior. Despite the fact that total abstinence prior to driving may be an ideal goal, it is doubtful that it will be practiced throughout the nation. It becomes important then to help us help ourselves to be reasonable and responsible in our decisions about drinking and driving.

Sound decision-making about drinking and driving requires specific knowledge, which this study suggests is widely lacking among young adults in America. To make sound judgments, one should know how to: determine the alcohol content of various drinks; identify the psychoactive effects of alcohol, particularly with respect to judgment, sensory perception, and motor coordination; estimate blood alcohol level when a given amount is consumed in a given period of time by a male or female of a given weight; distinguish among factors that increase and decrease the rate of alcohol absorption; and describe key aspects of responsible drinking behavior.

It cannot be said that knowledge about the topics above will alone motivate us to act on what we know; but without such knowledge there can be no informed decision making. Misconceptions and overconfidence will probably end in poor decisions.

Seat Belts

The group interview was helpful in identifying fears that erect barriers to the use of seat belts, and in relating the influence of thought patterns and beliefs to perceptions and actions. Examples are presented below.

Many individuals expressed fears and concerns about fastening seat belts. Despite evidence of the advantages of seat belts, many participants said they were afraid of them and told stories about people in accidents who they said would have been injured more severely had they been wearing a seat belt. Concerns were voiced about the ineffectiveness and discomfort of seat belts, and the problems of adjusting them properly. Several participants admitted not taking the time to "buckle up" when driving locally. The fears of five young women from St. Louis were given voice in other locations as well.

> Suppose you go into the water. A lot of people lose all sense of direction and I'm trying to get out of the seat belt and I can't get out...

> Or, if your car is catching fire. I think about this. What if I forget I've got my seat belt on and I'm trying to get out. You're so nervous...
>
> Or what if the seat belt jams?
>
> If you get a big enough jerk too, from maybe a head-on collision, it could snap your neck.
>
> Especially if you were to just plunge into a lake....Water comes up above your windows to the point you can't break the windows [another person said "freak out"]. So here you are fighting with the stupid seat belt to save your life. You could be rolling the window down and swimming out, and here you are fighting, and the sucker jams. Trapped.

These fears were very real to participants despite the facts that accidents involving cars going into the water or catching on fire are relatively rare compared to front and rear end collisions, and that seatbelts rarely jam and do not cause neck injuries.

There were some misconceptions regarding the functions of seat belts. For example, when asked "Do you think seat belts work?" one response suggested a misconception that may need to be addressed.

> I think they're good for the passenger because there's nothing there to stop him. You [the driver] got the steering wheel. You're kind of built into it when you're driving.

In another group there were misconceptions about probability.

> You wouldn't catch me wearing a seat belt.

Why not?

> Because the majority of people I know that were in accidents would have been better off if they didn't have their seat belts on. And since there is a 50/50 chance anyway...besides, it's uncomfortable.

When asked about effectiveness of seat belts, some participants would present an exceptional case to prove that a seat belt would have led to worse rather than better consequences. In short, for them the exception is the rule.

Do you think it's pretty much 50/50 whether seat belts would work?

> Yes, because I know people who got drunk in cars and lived. If they had been stuck in there with a seat belt they would have died.

Even a positive personal experience with seat belts could not convince one person of the probability of their general effectiveness.

> Well, with me, I'm prejudiced, because I got wrecked in a car and if I had my seat belt on it would not have been as bad as it was...it's all chance.

One young man felt that if as a passenger he were to buckle his seat belt, he would be giving the driver a clear message.

What would you be saying to the driver?

> Well, to me, I'm saying I fear for my life, and I hope you drive safely.... I just hope I'm not going to get hurt. So I'm just going to protect myself.

During a discussion in which a young woman said she wore her seat belt when riding with her husband, a group member asked if he was the kind of man "who gets insulted when you put your seat belt on." She said he was. She is not alone. Numbers of people, young and old, feel that to buckle up is to show a lack of trust in the driver and they may resist their inclination to buckle up.

Other participants' reluctance to buckle up seemed to be based on emotions they could not or would not explain.

> I never wore one and I don't like wearing them. I don't know why.

> At night most of the time I put mine on compared to the day. And I don't know why that is. I think maybe it's because I think there's a drunk driver or whatever out at night or something. But when I get in my car at night to go home I always put it on.

I'm a little confused. You were saying that you thought seat belts might not work. So how come you use them at night?

> That's what I don't understand. I don't even know.

> It's more security. It's just in your head.

> At night I feel more comfortable when I do wear it, but I'm not convinced that they help you any. It's just that you get some kind of security at night for them.

Purely emotional explanations may be especially challenging to deal with. One woman bought a seat belt for her dog, but would not wear her own. Another attitude was based on an interesting blend of cognitive and emotional reasoning in relation to children:

I do that with my little brother. When he gets in the car with me I make him put it on. I don't know, I guess I'm a hypocrite or something.

Well, when he is a little older and he says 'What is this, how come I have to wear mine but you don't wear yours?', what are you going to do?

I think when he's in the car...I wore mine too. And I try to wear it when he's around. But when he's not around, I don't wear mine very much, except at night.

I'm really interested but a little confused by what you're saying.

I know. It's crazy.

What I heard you saying was, I'm really not convinced these things work.

Right.

But then I'll use it when my little brother is there because I want to be a good model for him. And I'll wear it at night, because it makes me feel more secure. Is that it?

I know. It's crazy. I don't think it's the driving. I just feel safer. And my brother, I guess it's because, I don't know, I guess in a way I feel that they are okay. But I get things going through my mind. What if we get in an accident and I didn't have him wear it and something happened to him. I don't think I could live with that.... I guess I don't want to take the risk with him. Because he wasn't wearing it I would feel so guilty.

But you said before if you were wearing it something might happen that wouldn't have happened otherwise, right?

Yes. Well, I think, well, I'd blame all those people who say seat belts are good for you... I'm weird I guess. I never really thought about it.

Several drivers said they wore their seat belts for highway driving, particularly if they or someone close to them had been in a serious accident. However, fastening seat belts for short rides was not a common practice.

The way I am in and out of my car it would be very difficult to train myself to wear a seat belt.

I think on the highway they should be used but I also think that in the city it's sort of--it's almost a waste

> of time to have to get in and take a couple of seconds to snap it, take a couple of seconds to unsnap it, walk into a store for five minutes, turn around, do the same thing. It's a waste of time, it's sort of uncomfortable and it doesn't seem to be necessary.
>
> But you are not going 55, 60 mph in the city. That's why I wear mine, because of the speed involved.

When convinced of the greater likelihood of an accident close to home, most would probably agree that a few seconds to buckle a seat belt is not a "waste of time." The challenge, of course, is to make it a habit. To that end, suggested public service messages by radio during the hours when young people are listening to music in their cars are helpful.

Some respondents thought discomfort to be sufficient reason for nonuse.

> They're so uncomfortable to wear. Being so short my head's going across here. And I'll be wearing mine under my arm. And a lot of good that will do you. But if I wear it up here it's going to choke me to death.

(From another group)

> I don't like wearing one because being tall, it rubs against my neck.

(From another group)

> Some of the women in my family have a hard time wearing seat belts because they are big on top.

Discomfort was mentioned by both short and tall individuals, and by some women with large breasts. But technology could probably provide a low-cost solution to that problem.

The reactions to seat belts were not all negative.

What do you think? I haven't heard from you about seat belts.

> I think most of these things [exceptional cases] would probably never happen or would be once in a great while. I don't wear my belt, because it's too uncomfortable for me. But I think in most accidents which aren't major, it probably would help.

Responses in focus groups could be added to others to determine the extent of these feelings in larger populations. If the foregoing examples of fears, misconceptions, and feelings are widely held, a variety of correctional problems are very much in order. In some cases, educational

programs can help young people to overcome their fears and concerns, and to discard misconceptions; and can help train them to deal with awkward social situations regarding use of seat belts.

Given the fears, concerns, and all the other dim views of seat belt use, it is not surprising that support for the mandatory seat belt law was less than unanimous. Although there was clear opposition to the law by some young people, most of them did support mandatory restraints for children. There were, of course, numerous supporters of the law for adults as well.

The primary rationale set forth by opponents of the mandatory seat belt law was that using or not using a seat belt was a personal choice that had possible adverse effects for oneself.

What do you think about the mandatory seat belt law?

> I hate it. I mean I can understand wearing your seat belt and that it's a good idea, but I don't like somebody telling me I have to if I don't want to. I can understand putting your children in a seat belt, because they don't know any better. But, as an adult I can decide whether I want to wear it or not.
>
> I think a lot of people are concerned, especially growing up in our time, with the government's decision to implement a law like that on people. I think people are already thinking...there is too much government intervention. Who are they to say t at we have to wear our seat belts. It's our safety, you know, and that's sort of the way I feel. I think it's safe in some instances, but even if the law comes out, I'm not going to wear mine. But for kids, I think it's great....

(From another group)

What do you think about this mandatory seat belt law?

> I think it's stupid....
>
> So do I.
>
> I think it's good.
>
> (First person) ...because if this is truly a free country you should have a choice whether to wear a seat belt or a helmet when you're riding a motorcycle. It's your life and nobody else's. Seat belts do save your life, but one lady got trapped in a car because of a seat belt and she burned to death, and if she hadn't had a seat belt on she would have gotten out of the car.

(From another group)

I think it's a crime just to have it a law, because it proves that isn't truly a free country.

(From another group)

The reason why I think it is stupid is that, what if you get into a car wreck, you know, and your car catches on fire and you can't get out fast enough and you burn alive. See, because if your hands and stuff get pinned in the car and there's no way out you can get it undone. ... But if it ain't around you, you might have a better chance if you get into a car wrekc and your car catches on fire.

What do the rest of you think about that?

I think that it is true.

Yes.

Where did you come up with that idea?

That's what I was just thinking when he was talking about this...because my mom's car caught on fire underneath the hood once. I was just thinking about that and I figure, well, if your car catches on fire and you can't get out fast enough, the car blows up. Well, you might as well just say bye-bye to your life because you won't be alive when it blows up.

Why couldn't you just take the seat belt off and get out?

Like I said, your hands could get pinned. Or the seat belt could be stuck.

So why do you think they're going to pass this law?

(Pinned person) To try to save a lot more lives in a car accident.

Do you think it will work?

Yes, as long as the car can't catch on fire. I think you should just leave it like it is now. You should just let the people decide whether they want to keep them on or off, because it's their own life.

(From another group)

To stimulate discussion, the moderator directed a question to a supporter of the seat belt law.

How come you can support the idea of telling someone else to wear a seat belt?

Why do we support not drinking and driving?

Wearing your seat belt only affects you. It doesn't affect anybody else but yourself, whereas drinking and driving affects other people.

But the purpose of laws in a society is to protect society, and since you are a member, the laws are trying to protect you. That's why they mandate wearing seat belts.

If I got in an accident and I'm not wearing my seat belt the only one it's going to hurt is me, unless I hit somebody else.

What do you think about the mandatory seat belt law?

I was in an accident. I was babysitting for the weekend and had the people's car and he said to me, 'Don't worry about hooking up the baby seat.' The baby was 18 months. He said, 'I just hold him between my legs when I drive.' Just before I got in the car I thought, this isn't my child, this isn't my car. I hooked up the seat and put him in--a last minute thought--and we were in an accident. I was thrown with such force and I did have my seat belt on and it was tight, but I was still thrown with force and the baby was too. He would have been crushed between me and the wheel, and that was when the law was in practice. So it does help.

(From another group)

Who said they thought it was a good idea?

I did. I think people who weren't going to wear them, who aren't really law abiding, it'll save them, it'll save thousands. Maybe there are cases where somebody will get killed, but I think that it will save lives.

Sure, but don't you think it's a personal choice decision?

It probably is, but I don't get involved in it, because it doesn't bug me. It bugs some people, but I'm just saying for me. I don't think I'd tell anybody to put it on.

On the whole, few people recognized that not using a seat belt could affect others both inside and outside one's vehicle. The fact that seat

belts could assist a driver to maintain control of a car appeared to be overlooked. The excerpts above illustrate variability of social responsibility. Legislation governing personal health behaviors is controversial, and is a topic that would be worthwhile for young people to discuss. Throughout history a good deal of health legislation has been ineffective because people were not persuaded that it was in their best interest.

Education about the functions and effectiveness of seat belts could help change misconceptions, and overcome fears that may impede greater use.

Speed Limits and Speeding

Many young drivers like to speed. They find it enjoyable, exciting; and it is a way to cope with stress due to anger, frustration, and boredom. They are impatient, and when short of time, they try to make it up by driving fast. Respondents tended to agree that although some young women like to speed and race, men like it even more--which is a finding consistent with some other results of this study. Some young men reported having driven their cars as fast as 125 miles per hours. A common remark was that they like to "see what their car can do." Generally, the participants expressed the view that speed limits were set too low.

What do you think about speed limits?

In Canada some of the remarks were:

> Too low.
>
> Something there to break.
>
> No matter what the speed limit is, people tend to exceed it by about 10 kph.
>
> I don't think it is a very good sign, but I am frustrated not to go over the speed limit. I find it frustrating not to pass other drivers. I'm a very impatient driver. Well, you said this is confidential. When I'm on the highway if it's clear, it's not uncommon for me to get up to around 120 kph. If I'm below 120 kph I'm starting to get impatient already and frustrated about going that slowly.

In the United States:

> No way. I don't think anybody really does the [55 mph] speed limit. They drive either above or below it.
>
> Divided highways are really safe. They were designed for people to drive fast on them.

Sixty-five feels comfortable to me.

Respondents distinguished between the driver who goes too fast and is careless and the one who goes over the speed limit but is in control of the car. Many participants felt the slow driver to be as much of a danger as the speeder. Some participants, primarily males, described how speeding and racing were a way of life for them. The reaction among the females was more mixed.

> I drive fast. I go around saying I always take my turns in third, and, unfortunately, I do a lot. It's a situation where you don't endanger anyone, or I don't think I'm endangering anyone; but when you sit back and think about it you probably are--even if you're just going 10 (kph) over, because in the city things happen so quick you don't realize it. It's almost like you're challenging yourself: let's see how good a driver I am, let's see how quick I can stop, and all that. It's silly but a lot of people do that. That's how a lot of accidents happen.

For some, the thrill of racing multiplied the excitement of speeding.

> You get a lot of guys my age out there on the QE. I drive to Grimsby a lot, and they do the speed limit, aye, but I like to go a little faster. And you go; and these guys are sitting there and they know they are bugging you, aye. So you get beside them and they take a look at your car, right, and there's a bunch of young guys in there and they're saying, 'Come on, race him, race him,' and you just go. I have a 77 Cougar and I built it up myself, aye, and it will move. I'm always getting raced, aye. I don't know it's kind of a problem all the time. That's why most of the time I speed on the highway, just flying by everybody.

Do you feel that racing other drivers has ever jeopardized your safety in any way?

> No. No, I have't had any problems.

> It does jeopardize people though. It's, you know, I'm not putting you down guy or anything but you've got to be an idiot to be racing. Even on the Queen E it's traffic all the time anyway.

> No, this is usually late at night, aye? I go out to the bars out there....

In a group in Seattle, one young man described how he would constantly speed and race other drivers.

When you drive this fast, are you late for work or something?

> No, it's a high. I get a high off of driving fast. See, I know, since I travel I-5 all the time, I know basically where the police sit, okay. I take chances a lot. I shouldn't say this but sometimes I get in good moods, she knows that [motioning towards a friend sitting next to him], and I can travel up to 90, 95 and it only takes me 10 minutes to get home from here. But I'm really conscious and aware, and I'm always looking around. I've never gotten into an accident on the freeway, or a ticket or anything, because I know where they sit. When I'm by myself I usually find someone to race on the freeway when I'm going that fast.

Who do you look for? Who is a likely partner when you do this?

> It could be anybody. I dragged this old guy once. He was in this four-door and it was a Cavalier, right, type 10 or something and he came up on my rear and wow, you know, I moved over and he went zipping on. So I said, hey, and I floored it and went on by and we dragged all the way for 20 miles and I whipped his butt, but it was fun. It was really fun. I've dragged several people--girls...

Another man in the same group, referring to his 18-year-old fiancee, said that she urges him to drive faster.

> She'll race anybody. She'll race you [motioning to the participant above]. She'll get going. She always has to blow their doors off. Like I'll stay behind a car, I'll move into my turning lane or whatever, you know, instead of going all the way up there and then jumping in. But she'll do that. I don't feel right jumping in and cutting people like that. Hopefully she'll get into this when she gets older. I don't know, it just scares the heck out of me. When she gets mad then she just drives faster.

(From another group)

Do you think you have a tendency to drive faster alone or when there is someone in the car with you?

> Some people get their kicks seeing how much nerve they have, to see if they can jolt their passengers. I had this one guy do that to me. It scared me to death. I thought he was going to kill us. I think he was just showing off to us that he could handle his car but he really had us quite scared because it was an old car, an old Pinto with bald tires and everything.

To put it simply, some of our young respondents liked to speed; some did not. One young woman, complaining about people tailgating her when she

drives the speed limit, said, "If I don't want to speed, I won't speed. It's against the law."

A few participants questioned why cars are made to go so fast when speeding is dangerous. One woman said automobile manufacturers "are only teasing the public." Sports cars and high-powered cars are reportedly driven faster than other cars, which is not surprising. Some young drivers may need help to evaluate their own circumstances and requirements, and to realize that automobile manufacturers, motivated by the prospect of profits, create seductive advertisements which work at crosspurposes to their well-being.

There may always be drivers who speed and who will be hard to reach on any level. Some seem resistant to changing their speeding behavior even in the face of a threat of loss of license. Perhaps the only way to influence them would be through social disincentives--if, for example, more of their contemporaries become less enchanted with speeding. For some, the perception that they can drive fast safely is a sign that they are actually good drivers. Moving fast can be an exhilarating experience: witness the many people who enjoy skiing, sky diving, and auto racing.

Other possible benefits of speeding include showing off to peers, competing successfully and "winning," and coping with emotions such as anger, frustration, and boredom. Young people need to learn alternative ways of achieving the sensations and benefits of speeding without being threats to others.

Several of the quotes in this section tell us that, for some, driving at excessively high speeds does not necessarily mean driving unsafely. "But I'm really aware and I'm always looking around." The fact that in most cases speeding does not result in adverse consequences contributes to the difficulty of convincing people to modify their actions, especially when the appeals rely heavily on fear and focus on negative consequences. Repeated risk-taking without arrest or accident can only increase the likelihood that the message will be disregarded.

Risk-Taking as Passengers

Young people are subject to many hazards. Taking rides with unsafe drivers is one of them. Risk-taking as a passenger generally means entering the vehicle of an intoxicated, and therefore unsafe, driver. The discussions yielded a variety of responses to this topic. A few of the participants said they would not get into a car with anyone who had been drinking or who otherwise drives recklessly. Some indicated that they had been caught off guard and accepted rides which they shouldn't have; they frequently said they planned not to let this happen again. But, as is well known, intentions are not always acted upon.

Has anyone else had an experience with driving that made an impact on them and maybe you now drive a little differently as a result?

We went to the Bruce Springsteen concert and I went with my roommate and some of our friends. And right before the concert she took a lot of shots of Jack Daniels which made me scared. She was driving. Unfortunately the rest of us had been drinking too and supposedly she was going to drive and she wasn't going to drink. But right before she took off she did the whiskey. So we go okay, we go ahead and get in the car and go to the concert with her. We were real lucky because we got there, no problem. And during the concert she was drinking, and after the concert she was drinking. And we got in the car and she was okay, but when we got on the side road she just took off for some reason. She was upset about something and she just took off in the back roads where they pick up trash in these alleys. She just took off in those and she'd go in the alleys where you're not supposed to drive and she'd be crossing a road where traffic normally travels but there's no stop signs or anything. She'd go straight across the normal road in the alley to another alley which is setting yourself up to being hit. And after that I would never get in a car with anyone who had been drinking and driving because that just scared me to death, and I was so glad when I got out, I really was.

Were there people in the car less intoxicated than the driver?

A little bit but it was her car. She had a really bad temper, and if you had said something she would have hit you as soon as give you the keys. So essentially we just all sat back and prayed that we would get out of the situation okay.

Does she have a bad temper when she is not intoxicated?

Not nearly as bad, no. I mean she keeps it under control. She wouldn't hit anybody. But drinking she would hit someone.

That is a pretty scary situation.

It was also very much a learning situation for me too because it was the first time I had been in a car with someone who had been drinking and driving.

(From another group)

I remember my sister and I had this friend, and he was six feet, six inches and he weighed 250 pounds; my sister is about my size, and he was drinking during the movie and she wouldn't let him drive home and she was at one point wrestling with this guy, trying to get the keys away from

him. 'Oh no I'm going to drive, I'm going to drive.' It was so funny to watch this little person, 'No, damn it, you're not going to drive.' And it got ugly because he started the car and just started driving and she was half out of the car. It worked out okay but I was real scared. Well, what are we going to do, you know? We were in the middle of a drive-in, late at night.

You say it worked out all right. Did she drive with him in the car?

No. Another friend, we had some people, another load of friends, and they came back to see what was going on and one of them was a man and he started saying, 'No, Kurt, you're not going to drive.' And he became very assertive and between them they got the keys away from him and my sister drove. So...like in high school I remember not knowing what to do because the peer pressure, you don't what to say no, I'm going to call my Mom, you know, and go home. I didn't know what to do in that situation.

Have any of you been in a situation in which you were going home with someone who had too much to drink?

I went on a trip to New Hampshire and we went to Vermont where it's legal to go to the bars, I'm just of age. And we went there. I didn't drink, I just danced all night. And everybody left. They were going to some other place for pizza. I wasn't hungry and I had met some other people. We were dancing, so I wanted to stay there. And I was stuck going home with my sister-in-law's sister and her boyfriend and they had both been drinking. But I didn't know how much. I didn't think they were drunk because they put on a good act. We got on the freeway and they were still drinking and I'm getting really nervous. And he is going speeding down the road and he got pulled over and got a DWI. And I think I was more upset at myself than he was upset for getting caught. And I knew we were going to get caught. I knew there was a cop. I mean, he was in front of us, he pulled over to the side and let us go in front of him, got behind us and pulled us over. And to this day I don't care if Bill's had even a sip of alcohol, I will not get in the car with him.

Others astutely observed that if they had been drinking, their judgment would have been impaired. And although they would not normally take these kinds of risks, under the influence of alcohol the risk was not perceived, or if perceived was not acted upon.

Would you take a ride with a driver who had what you considered too much to drink?

> If I was sober, no. My girlfriend and I sometimes had too much to drink, and we finally got to the stage where she would just give me her keys as soon as we got out of the car before we went in anywhere. But she caused quite a scene in a bar one time when I told her I would not get in the car with her. And everyone just looked at her and said you are stupid, and she handed them over right then and there. If I have been drinking I don't really think about it. I get in the car and I'm just glad I'm not driving, and that's all that I care about. But I would never, if I was sober, get in the car with someone who's been drinking, no.

How about the rest of you? Would you take a ride with someone who...

> Yes, I would, but not if I was sober.

How many drinks do you think it takes before, let's say it affects your judgment to the point where you will ride with someone you would not ride with when you are sober?

> Well, if I had drunk the same as they had and felt that I was fine, then maybe I'd think they were okay, even if they weren't.

And there we have again illustrated the need for education about alcohol. This respondent apparently does not recognize that the degree of driving impairment caused by drinking is determined by many factors--for example, body size, tolerance, contents of the stomach, among others.

Some participants knew no clear guidelines for deciding when and when not to ride with someone else, and could do no more than admit that their judgment was not good after drinking. The designated driver system was not clear to some, in that they said they would look around toward the end of the evening to see who was still sober and ask that person to drive. Others thought designated drivers did not have to abstain, but simply drink less than passengers.

Some respondents had been passengers with unsafe drivers out of necessity. It was sad to hear that they took rides because they saw no other alternative: "I had no other way of getting home." A woman who lacked confience as a driver said she would rather have her friend drive in spite of the fact that she had been drinking because "drunk she is a better driver than I am when sober."

Often the most troubling responses were from those who seemed unconcerned about taking rides with unsafe drivers, because they trusted their friends to have adequate judgment.

And where would you draw the line? Let's say you were going to ride with someone you knew had been drinking. Where would you draw the line between riding or not riding?

> It depends on the person entirely. If it was someone I didn't know I would think twice before I would go with him if he had anything to drink. But the guys around here...I know most of them and most of them I'd trust. I think I'd pretty much trust their judgment about whether they want to drive. Usually they are going to be driving their own car and so even if they are inebriated I think they are going to decide whether or not they want to drive their own car.

It is not surprising that before deciding to be a passenger, some individuals will use their trust in the driver as a major criterion. This may seem reasonable, but, upon closer examination, it is not. Trustworthiness has nothing to do with the way alcohol influences driving judgment. Too often responsible people behave irresponsibly under the influence of alcohol.

And so we have another issue to address in an educational program: young drivers need to think about the risks of accepting a ride with an unsafe driver and to familiarize themselves with potentially difficult situations and possible ways out. Other research suggests that in spite of the influence of alcohol individuals might be more inclined to follow a plan they had decided upon beforehand. Young drivers who operate on the "trust principle" need to learn more about their responsibility both to themselves and to their friends who have drunk too much.

On the other hand, it appears from the discussions that the norm is shifting somewhat from riding with persons regardless of their condition to the expectation that unfit drivers will surrender their keys to someone else who will drive or hold the keys for safekeeping.

There was some talk about "Contracts for Life," an arrangement by which a family member (more often siblings than parents) promises, if called, to pick someone up, with no questions asked until the next day. However, young adults show some reluctance to calling parents. Moreover, some respondents stated that their parents were not receptive to the idea of being called. Parents too can use some counseling.

Perspectives on Prevention

As we stated at the beginning of this report, our attention was fixed on young drivers themselves. The topics were distilled from the flow of their discussions and represented their views of the causes of traffic accidents and possible solutions to the problems. Their views are presented in six separate but related topics.

First are the participants' responses to questioning about the causes of accidents among young people. Second, their explanations as to why some young people are cautious drivers and some not. Third, suggestions of subjects to be included in traffic safety educational programs and strategies for reaching the right audience with the right messages.

Fourth, ideas for planning prevention programs. Fifth, influences on learning good driver habits and social practices with regard to use of an automobile. Sixth, and finally, discussion of a key attitude--concern for others--which can help to improve the safety of all drivers.

Causes of Accidents

There were a variety of responses to questions about the main causes of accidents. The practice of drinking and driving was frequently cited, but among the many other reasons were:

Ignorance...of road conditions and speed limits
Speeding
Mind wandering
Unawareness of own limitations
Fatigue
Haste
Inattention
Panic
Carelessness
Impatience

The responses "haste" and "impatience" point to such discourteous behaviors as tailgating and failure to yield right of way. In some groups, extensive probing was required to elicit drinking and driving as a determinant of accidents. Collectively, the responses suggest that young people are aware of many important determinants of accidents, but that drinking as a risk factor needs more attention than it is getting.

The responses also point to the need for research to assess young people's perceptions about the influence of other drugs, such as marijuana, on driving ability. And the need to correct misconceptions is clear.

How do you think smoking a joint would affect your driving?

> ...See I can drive stoned, no problem. But I won't drink and drive. It's like if I'm high [on marijuana] it's not like I don't have control of my body and my head's not funny.

The effects of marijuana on tracking ability, and on time and spatial perceptions are well documented. The discussions uncovered a need to explore the degree to which young people are aware of this cognitive-behavioral effect of marijuana on driving.

The driving problems of young people are sometimes related to their emotions. Respondents indicated that how they felt could have an effect on how they drove. Participants talked about the impatience of young drivers and their tendency to show off. These shortcomings were usually attributed to high school students, as if those talking had outgrown them.

Some did admit that they still had these tendencies.

> I think kids that first get their license are really impatient. They don't have the time to be bothered to wait for people to cross the road. You know, instead of following the speed limit they got to go faster and they try to pass six cars at once, you know, just rammy, pushy.

Do any of you find that your moods affect the way you drive?

> I think a car itself gives you a feeling of a lot of power, you know. If you feel aggressive, you'll drive aggressive. If you feel kind of, let everybody pass you by, then you'll drive that way. And I think other people influence how you drive also. If I see someone pass me I know I'm the type of person who will try to get past them, you know what I mean? [Laughter] I don't know what it is, it gives you a real sense of power 'cause you can go so fast.

(From another group)

> When you're pissed off you are going to be more aggressive. When you drive, you'll think "Get out of my way!"
>
> I tend to go faster when I'm pretty mad--a lot faster.
>
> I don't drive faster but I don't pay as much attention as I should.

(From another group)

> Definitely. I find myself, if I'm mad, I'm more apt to drive fast. If I'm mad or I'm upset or I'm late for work or something like that, there's nothing I can do about it but I find myself driving faster than I would normally drive if I were just calm.
>
> Being behind the wheel is a way to release energy too. Like he says, the speed is a way of releasing energy.

In contrast to the drivers who seem bold because of their impatience or aggressiveness, some drivers expressed nervousness and fear in driving situations.

Do most of you feel confident as drivers?

> It scares me trying to be a defensive driver 'cause I... trying to be so careful watching out for the other guy and he's not watching out for me.

After describing an accident she had been in as a result of her brother's reckless driving, one woman said:

> From then on I really didn't care about driving and I just don't like speed, you know. I drive kind of slow because it scared me so bad and it kind of sticks in my mind. Don't go over the speed limit and watch your speed, especially around cars. It scares me to death.

Another person reported that his driving had been affected by his having been hit from behind more than once.

> At times when I am stopping for a light I glance at the mirror to see how fast the guy is coming from behind. I look, and I'm almost on top of the guy in front of me. I think I find myself looking a little too much.

One woman said she lacked confidence, had been at fault in two accidents, and that other drivers made her nervous because she likes to go by the rules but many of them don't. In another group, a student referring to the bar traffic around her campus said:

> It's very frightening. You go out on a Friday night and ninety people are trying to kill you.

It is evident that young drivers require assistance in learning to cope with emotional states that affect their driving performance. Persons in this age group may be experiencing the stress of entering significant new stages in life. Training to help them contend with stress in constructive ways seems indicated, the kind of training that will enable them to identify the feelings that interfere with the task of driving. One participant said you have to learn to leave conflicting issues out and just concentrate on driving. It would be interesting to compare on a simulator the driving performance of someone who had been induced to feel angry with someone in a calm emotional state or to study self-comparisons between driving when agitated and when not. Role playing and focus group discussions are other techniques for exploring ways to cope with troublesome emotional states. Some have to learn alternative ways to vent their feelings or expend their energies rather than through hazardous driving. Others need to acquire more confidence in themselves as good, defensive drivers.

There is a need for prevention programs on the common causes of accidents of young people. Irresponsible drinking and use of other drugs such as marijuana are major areas of concern. We have to determine the degree to which young people recognize the effects of drugs on driving and we have to correct misconceptions.

The emotions of young drivers can cause irrational or unsafe behavior. Young drivers have described how anger, fear, and sense of power or reactions to pressure or stress can adversely affect their

driving. They need assistance in finding ways to aim the emotions that worsen their driving skills. All of the foregoing topics would provide considerable content for an education program in safety for the young driver.

Why Some Young People Are Cautious Drivers

When asked why some people are more cautious drivers than others, respondents pointed to the importance of social responsibility as a personal attribute.

> A lot of people are just inconsiderate. They don't care.
>
> Some people are more responsible.
>
> Some people care. Some people don't think and don't care about anyone else on the road.

When asked why some people are more responsible than others, several participants suggested that being given responsibility during upbringing as well as ability to learn from the mistakes of others were two possible reasons. The need for some to "learn for themselves" and an inadequate sense of susceptibility to adverse consequences may explain, in part, the distinction between more and less cautious drivers. Disincentives associated with responsible driving (i.e., no rewards and possible peer ridicule), inability to separate acceptable behavior in a car from acceptable behavior in other social contexts (such as sports), and the novelty of risk-taking behavior are other explanations offered by young people as possible determinants of less cautious driving behavior.

What makes some young people more responsible?

> Upbringing. You just don't learn responsibility unless you've been given it.

Sometimes you say you know it's wrong, drinking and driving, but you still do it.

> Yes. I still do it. There's a lot of things you shouldn't do, but you still have to experience them youself to know that you shouldn't do it...then you get hurt. Then you realize they were right. I'm no exception.

But with drinking and driving that one time can really...

> Yes, that's true. But you don't think about that when you're young.

Do you think you'll have to get caught drinking and driving before you'll change?

Well, you always think it'll never happen to you.

There's a lot of bright people that...have never been through it, that won't go through it.

Why is that?

I guess they're brighter.

They learn from other people's mistakes.

And other people don't learn from other people's mistakes, like me.

It seemed apparent that for some young people being socially responsible implied social disincentives.

What is it that makes some people your age more responsible?

Because they don't have fun.

Alternatively, acting in an irresponsible manner may confer valued social benefits.

I think some people don't listen because they just want to be different. They want to stand out and be in the limelight.

In many social contexts, such as school, work, and sports, young people are encouraged to be competitive and ambitious; and it may be difficult to control these predispositions when behind the wheel.

Well, why do you think that some people are really cautious, they're really responsible, they'll never drink and drive, they'll never speed, they'll never take risks? Why is that?

It's their nature because some people are just naturally ambitious and others are more cautious.

Some explanations for irresponsible driving behavior were the novelty of risk and lack of understanding by the young of the potential consequences of their actions.

Why do they do that (drive unsafely)?

Because of the new experience. They have freedom, they can do what they want.

Then after a while it dies out.

Yes, and his friends get into accidents and things like

that and you realize the consequences. I can tell you, until you know the consequences personally, I don't think it has much effect at all.

Understanding of the key factors that determine driving behavior, and particularly those factors that are amenable to change, has eluded traffic safety researchers and educators for many years. While some risk factors, such as age, sex, and risk-taking attitudes have been identified, there appears to be considerable variability regarding psychosocial influences on driving. Some implications for prevention that can be suggested from the focus group discussions on driver cautiousness are outlined below.

First, the need of some young people to "learn for themselves" about the consequences of their behavior appears to be a key point for intervention. This is confirmed in discussion elsewhere about experiences that led to modifications in driving behavior--accidents, near misses, and traffic violations. Prevention programs that communicate, and possibly simulate, the possible consequences of irresponsible driving may assist inexperienced young people to recognize the responsibility associated with driving. Beliefs about susceptibility to danger are not easily dealt with. If the relative risks in terms of miles driven are used as a basis for estimating risks to individuals, one might believe in low susceptibility. If enough people deny having a fear of adverse consequences, there may be a limit to the utility of fear campaigns to promote and, more importantly, to maintain change. Prominant social consequences may be more influential than potential risks. Prevention program planners must realize that there are not only social disincentives to drive responsibly, but that there are perceived social benefits, such as showing off, feeling excitement or "working off" frustration and anger, derived from risk driving behavior. Strategies that minimize disincentives and point out alternatives for achieving social status and for coping may help young people to learn to be more responsible.

Because driving behavior may be an extension of general lifestyle tendencies, it may be extremely difficult to modify. To complicate matters further, the tendencies that are often disadvantageous in driving, such as aggressiveness, competitiveness, risk-taking, and quickness, are valued and rewarded in sports and, too often, also in worklife and school. These tendencies are reinforced by many informal social sanctions like being admired as a sports hero or for being successful in business. Why some individuals are and others are not able to shift their behavioral tendencies in different social contexts, including driving, needs further exploration.

Topics Young Drivers Would Stress--And How

As young drivers have ideas about the causes of their traffic safety problems, they also have something to say about solutions. These are discussed in terms of topics to stress in prevention programs and ways to get messages across.

Is there anything in particular that you think should be taken

into consideration if you were going to put together a program for young drivers and the objective of the program is to try to cut down the number of serious accidents?

> Teaching them to drink responsibly. That's the most important thing.
>
> Yes, because everybody's going to drink and get behind the wheel some time.
>
> That's right.

That "everybody's going to drink and get behind the wheel some time" was not a unanimous opinion of the participants but one shared by many of them. The topic of responsible drinking would include strategies such as use of a designated driver, or taking a taxi or staying at a friend's house if one had been drinking enough to bring them (or their driver) over the legal DUI limit. These strategies were discussed at greater length in the section on Drinking and Driving.

Although they considered drinking and driving to be of major importance, several mentioned that use of other drugs either alone or in combination with alcohol should also be addressed.

> High school kids do a lot of drugs and they drink and then they drive.
>
> Usually when there is pot smoking there is alcohol with it, usually. That's the way it is with my friends... people think they are aware but they're not when they smoke pot and drive. A lot of accidents relate to pot, you just don't hear about it. And a lot of kids are drunk drivers, a lot of kids. It's nothing new; it's been happening for years and years. I don't know, educators are essentially basing things on alcohol. It seems like they should go to the pot aspect, too. Because I know a lot of addicts of pot, and it's just the area, and what you do.

In another group on the topic of socializing, one male said:

> Oh, all my friends drink a lot, well I shouldn't say that, but at University a lot of people drink. Most of my friends drink, and it includes doing drugs and the whole bit, and I don't do drugs either. But invariably when you say party that's what you've got. I remember we had a University party for one of our lab assistants. It was his birthday. There were just 35 of us. Everyone was worried that no one else would bring drugs, but 27 of the 35 people ended up having a stash on them for the party.

Stash of what?

> Pot and [hash] oil and other junk like that. You know, like I say, that's fine. I'm not going to say it's wrong. It's wrong for me to do it so I don't do it...
>
> It's wrong according to the law.
>
> ...according to the law too. My friends know how I am, and I don't have to say anything.

Several in this group said they have seen people taking drugs along with alcohol and that it is not uncommon for them to drive afterward. It was also mentioned that some use drugs and alcohol to get a greater high without the risk of detection of high blood alcohol level.

To probe for additional topics, the moderator asked the group what issues they would consider most important in planning a program to lower the high accident rate of young drivers. Their answers related primarily to skill in defensive driving and giving individual attention to the task of driving. They stressed the need for supervised practice driving. The answer to one question pointed to another factor they thought crucial to safety:

Do you think appealing to the young driver's competitiveness would help the safety record?

> No. I think it has more to do with experience. Until they gain a certain amount of experience it's not all in control.

It was also said that young drivers have a difficult time avoiding distractions. The practice of cruising ("taking in" the surrounding scene) is a prime example of a popular distraction. According to one young man, women become distracted while checking on their makeup and men lose attention while searching for or lighting cigarettes. Loud music can be distracting and so can worries:

> Your mind gets distracted, like when you are having tests. You'll be driving and you think about it.

In discussing the tendency to become distracted while in a bad mood, one person said:

> You can't drive when you're feeling bad. You have to forget about what happened back in the house, or that you're late for work. Just drive your car. Don't think of whatever happened before that.

It is intersting to note that no one mentioned speeding or seat belts as subjects to stress in a corrective program. This in itself is very

revealing of the difficulties to be expected in trying to reach the young on these two topics.

Another topic covered in gathering young people's opinions about prevention was ways to "get through" to them. The unfortunate fact is that many did not learn until they had a serious accident or near-miss frightening enough to have an impact upon their behavior.

> Yes, we learned by trial and error. We've all made mistakes, so it would be good to teach them before.
>
> Yes, but that's the hardest thing to do because people learn by their mistakes. Young drivers learn by their mistakes...

The toll of learning by trial and error in some aspects of traffic safety is high, and it is in everyone's interest to capitalize on vicarious learning instead. As Bandura (1977a) has stated in discussing social learning theory, it is within our capability to learn by others' experience. Identification with one or more people involved in an event seems to be a major factor in the facilitation of vicarious learning. Hearing about a serious injury or death of a classmate or community member has a profound effect. Evidently--and this was mentioend by one young man--one has to be affected emotionally in order for a traffic incident or safety message to have a great impact. Programs arising from local concerns produce stronger identification and response than can be expected from statewide reports or national statistics.

Young people do not like to feel that they are being lectured, and may not respond well to authority figures.

Who should deliver that message?

> Someone who was in an accident, not parents; kids like to rebel against parents.

(From another group)

> It would be no good coming from the teachers.
>
> They are constantly fighting against the teacher. The more the teacher wants, the less the students give.
>
> You've got to bring somebody in.

(From another group)

> They may not want to listen to you, but people that age are influenced by social values.
>
> Peers.

If it's the thing to do, they'll do it. You know, if it's not cool to put on your seat belt, you're not putting your seat belt on.

In a couple of the groups, objections were raised to the use of gory films if they were shown just before going out to practice driving. The following exchange contains another caveat regarding films.

What are some of the best ways to get across to young people so that they don't close their ears and say, 'Go away and leave me alone'?

I think it terms of the in-class training I found the films quite effective, but some of them were older films and the commentator tended to sermonize and I noticed that the other people reacted just the way I did. You tend to discount it. They were so outdated, I mean, and this very strong kind of moral tone came through. So I think that they could have the films more up to date and maybe more clinical in a way so that it was just a calm presentation to the class, because the facts speak for themselves. You don't need somebody sermonizing: 'Well we can learn from this not to...' because that tends to discredit the whole ...especially if you are on the defensive about having somebody preach to you.

The media were viewed as an effective way to reach young drivers.

I am wondering if you have any ideas about getting across information about safe driving to young people? Are there any good ways to do this?

I think maybe, but I don't know for sure if a lot of the television shows would work, if the seat belt ideas were just automatically put in. If a situation having nothing to do with the movie or plot, just showed a person getting in and automatically putting a seat belt on, that would be subconsciously put into people's minds and I think they would notice.

I do have to say Stevie Wonder had a song recently called "Don't Drink and Drive," and it was really a good song and it got people to think.

They should find out what really is appealing to the young American or to everybody really, not just the young people. There are subconscious ways to get that across other than demanding that you learn this. Young people especially are going to rebel against what is being pushed on them.

Especially by adults.

> I know they have a thing on TV, "That's one to grow on." They use a lot of the young child actors and they talk about seat belts and other things aside from that and I think those are really good, those little short commercials, and I think that's really a good thing.

They think radio, in particular, should broadcast public service announcements about drinking and driving and other hazardous driving practices. They say that the best time to schedule these is when young people are getting ready to go out or are out in the evening riding in their cars.

The participants also said the following made impressions on them as appealing ways to get across to young people:

--Alcohol-free proms and campaigns around the holidays.

--Peers as speakers telling about their experiences, accidents, tickets, etc.

--Use of written contracts among students and "contracts for life" with parents and siblings.

--Stricter laws.

Several participants said that programs in which young people could discuss their traffic safety problems were appealing as an effective way to develop solutions. In discussing fast driving, one female said she looks for police so she can avoid tickets. She said she had gone to classes for speeders a couple of times and felt they had not been helpful to her.

> I think this, some sort of program like this, a small group where you can talk about driving and things that you've encountered and what you do in different situations, or even why psychologically you do it, you know, is much better than having someone sit there and lecture you on driving and things like that.

As the reader knows by now, the moderators of our focus group discussions did not provide information or make judgments about what the young drivers said. In distilling young drivers' opinions about ways they can be reached, we learned that they are affected by things that they can identify with personally, their emotions are a very large factor in the learning process, they do not want to be "told what to do," and therefore do not relate to lectures or sermons, and they would like to take an active part in the process of solving their own problems.

This information, the value of which lies in the fact that it was offered by the participants themselves, should be given serious consideration in any interventions designed for young adults.

Change in Driving Behavior

Most of the young people acknowledge susceptibility to involvement in an accident. Many said that fear of being in an accident was their greatest fear about driving. The predominant view was that if they were in an accident it would be the other person's fault.

> I'm not worried about being the cause of it, because I know I'm a good driver. I'm worried about someone else being the cause, and because I'm 18 years old I would be stuck with the blame.

Despite what appeared to be a fairly high level of perceived susceptibility to accidents, when probed further they most frequently associated a change in behavior with negative consequences. Asked if they could recall anything that changed their driving behavior, the participants, males and females in all locations, responded unequivocally: being in an accident, having a near miss, personally knowing someone in a serious accident or receiving tickets. This consistency in responses suggests that this finding, more than others, could probably pertain to many other young people.

> It was a little under a year ago I started driving. I got my license six months after I turned 16. I was coming home from a friend's house...and I knocked a '79 Le Mans into a tree.... I didn't drive for about nine months after that. I didn't want to drive. I didn't feel competent.... I started driving again, but everybody I've driven with since then says I'm a much better driver.

What do you do differently now?

> I'm more aware of what's going on around me than I was before.... Maybe less irresponsible behind the wheel.

> In high school I had a friend that got into a car accident and died and so that changed all of my friends and everyone that knew her...all their ideas about driving.

So how did that change you?

> I think I'm just a lot more cautious and I started wearing my seat belt in high school them.

> It was right before a game. You know, you flirt with the guys as you're riding along. Well, we decided to take an off ramp. It was raining and we skidded and my friend ended up breaking her arm...no one had their seat belts on.... It just made me realize I've got five girls with

me and I could.... It made me realize that a lot more could have happened, and I had responsibility for my friends and how could of I have dealt with that.

(From another group)

What made you change?

Well. I mean a guy that I know that had that accident nearly killed my best friend, and I was driving along the highway and I saw the car turned over and the windows were all blown out and everything, and there was like body bags around the car and I mean really, it just shook me up. It turned out that she was okay, and she had like flown out of the car, and her boyfriend Robert was drunk. He got out of the car and luckily pulled her off the highway before she got run over. And, just after that it's been like it's just too much of a chance that you could hurt somebody.

As illustrated in several groups, driving fast is one way to impress friends. In addition, the physical experience of speed is exhilirating and appealing. The benefits derived from racing or excessive speeding appear to carry different values by different people, and may be useful to consider when attempting to tailor programs to individual's needs.

Can you tell me a story or anything that stands out in your mind that affected the way you drive?

I was driving too fast. I was showing off for a friend and I was dodging in between cars...and this diesel truck just suddenly appeared right in front of me... and I hit the back of it. Took out my front windshield. Didn't do any body damage but it was enough to get glass all over me and my passengers.... I didn't care if I was hurt, it was my passenger.

(From another group)

Has anything affected the way you drive?

Being in an accident. I was with a few of my friends. We went to a party. And afterwards it was getting dark and it was broken up and everyone was leaving. This guy had a new car he had just worked on for the past three years, a Mustang. And a bunch of my friends, we, a lot of my friends, drive really fast cars, mostly older cars. And they took off and we took off and we were racing around through the residential streets and got on to a main street and this guy was ahead of us.

He was winning the race. But he got up over this hill and around this curve and when we got to the top he had slid and hit the meridian, the strip in the middle, and rolled over his car. And I had never seen an accident like that. You know you might see it on the Dukes of Hazard or something; but I thought the guy was dead. We stopped. It was really weird to see that happen, you know, I'd never seen a car actually roll over till then. He rolled it four times, but he got out. He was okay. But his car was totaled.... I'll still drive fast, but I won't drive reckless like that.

Do you still race a little now and then?

Yes.

I think everybody does, every once in a while.

Why do they do that?

To show off.

Any other way to show off?

Driving drunk.

(From another group)

Can you think of anything that has changed the way you drive?

Two traffic tickets within a year's time; that's certainly changed it. I used to love to get up to 80, 90 miles an hour going down the highway. Just because I love the feeling of air rushing through the windows, just going that speed. Got two tickets, can't do that no more.

How long will that be for?

Well, it's one of those things where I'm starting to settle down now, and you can't do that. It's time to grow up. It's time to keep it within the speed limit. I've developed the habit now of watching that speed....

I was into racing until I got married. Then once you get married you lose all that ambition.... I had to slow down. I had to be cautious.

The consistency in responses regarding factors that influenced driving behavior tells us that individuals have to experience a "real life" understanding of the potentially harmful consequences of bad driving. Few traffic safety programs make use of simulations to

communicate the possible consequences of erroneous personal decisions about driving. The actual accident experience, the psychological shock, physical injuries, and the all-too-often, debilitating effects of accidents may be difficult to simulate realistically. Discussions with young victims of auto accidents is a learning strategy that may assist young people to realize what can happen.

Society and Peers as Influences on Driving

Participants indicated, as we had expected, that they learned to drive from parents, relatives, on their own, in private driving schools, and in high school driver education classes. The extent of their driving experience by age 18 varied widely. Those who had been raised on farms had several years of early experience in driving farm equipment or trucks. Several events stuck out about learning how to drive. The answer to the following question is one example.

Is there anything that stands out in your mind as being particularly helpful when you were learning?

> Well, just being on the farm, nobody around you, no pressure from other cars on the road or anything. You didn't have to keep your head constantly looking at everything because what are you going to hit in the field? If you made a mistake, you went off to the side there. You are still in the field, not in a ditch or anything.

Others had had little or no driving experience. A young woman from Norfolk, Virginia, stated, "I had only driven my mother's car once before I had Driver Ed. We got into the car in Driver Ed and I didn't know what I was doing." Among those who completed the driving courses in high school, the nature, scope, and quality of programs varied considerably, as did level of student satisfaction. In some cases, only classroom instruction was provided; in other cases, cursory behind-the-wheel experiences were included. Yet some participants reported fairly extensive behind-the-wheel instruction.

Both negative and favorable comments about driver education were reported.

Have any of you had experiences with driving that you feel have made a real impact on you, the way you drive?

> Taking Young Drivers of Canada. It's a hell of a driving course. I got more out of that than I could have from my parents. There are things that are in that course that just stick in your mind and always will.

What were some of the particular things that stick out in your mind as very helpful?

> Ten and two [two hands on the steering wheel in the ten and two o'clock positions]; looking in the rear view mirror every five to eight seconds; shifting into neutral on ice; the two-second rule [distance away from the car in front of you as measured by objects on the side of the road and the time it takes you to reach the same point the other car has passed]; know what is around you at all times so you know which way to go if you have to avoid a collision.

In contrast, one student attending school in Arizona said that the gory films they would show "every Friday" had a negative effect.

> They just terrify you and then take you out there and show you the ropes but they never say, 'It's possible to have control and to be responsible.' I don't recall ever hearing that.

One woman who was nervous about driving because she had been in an accident with her father behind the wheel said:

> I tried it [driver education] in school and they were showing films about accidents, bad accidents; what can happen if you are a dangerous driver. I just dropped out of that because it scared me even more. And I came here [Job Corps, Tulsa] and that just changed my mind about it. And I can say with his [her teacher] patience it helped me a lot. If it weren't for him I would still be calling people up to ask for rides.

A portion of our group expressed a need to gain confidence by learning specific skills and through a positive teaching approach which makes them feel they can become good drivers. They all thought that the hours they spent in on-the-road training were valuable and they recommended as much of that kind of practice as possible.

In general, they thought getting the driver's license was much too easy, in relation to both the written and the driving parts of the examinations. They revealed that in some places it was possible with a certificate from an approved driving course to get a license without examination.

> <u>You say because you took the class you didn't have to take a test for the license?</u>
>
> Right. They give you a little card and you just walk in and show it to them. They take your picture, and check your eyes, and you walk out the door.
>
> My God!
>
> Is that here?

> Yes.
>
> Oh, my God.
>
> I took driver ed here and I had to take the test; take the guy for a cruise around the block, and park and everything.
>
> They said that if we went out with our teacher, that was considered good enough.
>
> I didn't have to take the driving test with the state either. As long as you had your hours in class, but we had tests. Half the people flunked it the first time around. It was real hard.

Participants seemed to believe that a harder licensing test and closer monitoring raised the level of driving skill. Some thought the provisional license for new drivers was a good idea. One female in Ontario (Canada) said that during the two-year provisional period there was careful monitoring for infractions. Another female, a newcomer to Seattle, said:

> When I got my Washington driver's license I felt good. I felt I could drive now because the test was harder. I was of the caliber of the people who drove in Washington. Where when I had my Oregon driver's license I felt I had taken a test that wasn't anything. [For one thing she wasn't required to parallel park in the Oregon test.]

The participants were saying in effect that the period of learning and licensing for the young driver is critical. It is the point at which knowledge, skill, and safety consciousness should be instilled and certified. Attempts to economize by abbrevi[illegible] any of these processes can produce licensed but unqualified drivers. Another equally serious issue is that indifference toward driver training and licensing creates an impression that good driving is not deemed important by society. If this is the case--and some would argue convincingly that it is--does it seem reasonable to expect young people to take the driving task seriously?

They enter driver education courses at very different levels of driving experience, knowledge, and social responsibility. If these differences were diagnosed at the outset, adjustments in courses of education could increase the effectiveness of the learning process. The nature, scope, and quality of driving instruction varies considerably, if we are to believe the reports of our young participants. But the negative reports should not be viewed as condemnation of driver education programs. In contrast, almost all participants endorsed the idea of sound driver education. Thus the urgency to improve its quality and availability.

Although young people may receive driving instruction from parents or high school teachers, their social views of driving are influenced by

friends and public attitudes. Some young women are impressed by reckless male drivers and may even encourage them to drive wantonly. One young woman in California told of the excitement of riding with her boyfriend when he was racing.

> You hear the tires breaking loose, you hear the engine rev, you're seeing, you hear...it just tends to grow on you after awhile.... That always impressed me...I like fast cars.

Participants in an all-female focus group in St. Louis admitted that women do encourage risky driving by males. As one young woman put it, "They're going to do it to catch your eye and sure enough they do."

A male National Guardsman in the Midwest commented that competitiveness is expressed in driving. If you are passed and left in the dust, as a man you may feel obliged to compete. In many other pursuits of life, such as school, work or sports, competition is encouraged and rewarded; competitiveness can become an inclination that is difficult to leave out of the automobile. Several groups mentioned the force of peer pressure in suggesting to males the value of being competitive and irresponsible behind the wheel.

Pressures are felt by some young men from what they view as societal expectations. In an all-male group in Southern California, respondents were asked if females were more responsible drivers than males.

> Yes, that is their role. They are expected to do that. And you do what is expected. I mean you're expected to floor it at a stop sign. More than not you're going to. I mean girls aren't known for driving a Ferrari and flooring it. It's not expected of them so why should they?

He went on to indicate that if expectations are not fulfilled, friends will "talk about you" and say you are "weak" or "scared."

In an all-female group in California, when asked if drinking and driving was common among people they knew, one woman responded, "I think guys do it more than girls." Another followed, "They think they're immortal." When asked why, two women replied, "It's the way they were brought up" and "It's the way society makes them." When asked how they would change these conditions, four persons said:

> Well, from the day they are born you do it differently. You don't make them have to do that.
>
> You make them out to be awesome and strong. Nothing hurts them, they can handle anything.
>
> The way they're brought up it's almost like you drink as much as you can.

It's from peer pressure.

In another all-female group in St. Louis, similar views were expressed. When respondents were asked, "Do you think that sometimes after you've had a little too much to drink you might become a little bit overconfident and think you can drive?", one opinion was:

> I think guys are that way. I think more guys drive when they're drunk. I think girls have more control about that and I think girls are more able to say, 'I'm drunk and I can't drive.' And guys are going to say, 'Hey, I'm not drunk.'

She explained that the problem was due to "...their male egos." When asked why they are like that, her response was concise: "Insecure!"

It was interesting that when asked about their impressions of males vs. females as drivers, both groups made approximately the same kinds of observations.

Do you think there is a difference between the way males and females drive?

> I think males tend to drive more aggressively.
>
> They tend to get upset with other drivers easier. If I had a high performance car I would be tempted to use it, whereas I don't think a girl really would.

(From another group)

> Guys always have fast cars. Even when I was in high school a lot of guys had fast cars. Girls had smaller cars or didn't drive.

The males took credit for knowing more about the mechanics of their cars. In Canada, one male said:

> I think there's a special relationship between "man and machine." There's always...[laughter]...well, there is. But it's true. Guys find it fascinating to work with machinery including their cars, whereas a girl may not, you know, overall. So to go out or just speed around or to show off is typical. They spend so much time dealing with the car and to get it to perform at a certain level and everything. But I'd rather trust someone going fast that knows how to handle a car than someone that's very timid in a car, where they don't have that special bond between [here even he chuckled] machine and themselves.

A couple of young women in this group argued that they did not think it was necessary to be highly familiar with auto mechanics to be a competent driver. Although some females said they speeded and drove aggressively, the predominant view was summed up by one:

> I think girls are more conscious of the consequences of something happening. They'd rather sit there and follow the rules and be calm, whereas the guy will take more of a risk than a girl would.

The discussions described above confirm what the participants revealed in the connotative meaning questionnaires--peers often influence young people to drive unsafely. Furthermore, an unwillingness to give in to these pressures may have important adverse consequences including--but not limited to--being rejected by the peer group, compromising the ability or opportunities to impress members of the opposite sex, and having to find alternative ways to channel emotions such as frustration, anger, and boredom. Driver education programs should therefore focus not only on content related to safety and the physical task of driving. Our findings lead us to conclude that effective programs will also focus on training in social skills to resist negative peer pressure. Such programs have proved useful in innoculating young people against peer pressure with respect to cigarette smoking and other drugs, and should receive attention in driver education.

Our findings also tell us that ways should be found to channel the powerful influence of peer pressure in a positive direction--toward the acquisition of good driving habits.

Social values and accepted rules of conduct within individual social groups and the larger society shape the ways new behaviors are learned and determine how difficult it will be for existing behavior patterns to be modified. Although emphasis has been placed upon the young driver's peer group, significant older groups and social institutions also exert powerful influences. Case material presented in a later section shows that, with regard to driving safety, some parents serve as poor role models for their children. The influence of the media, particularly television, was also cited by some as contributing to traffic safety problems of the young. Many television shows, as well as movies and popular rock music, glamorize risky driving in a way that recalls how John Wayne, Humphrey Bogart, Lauren Bacall, and Edward G. Robinson, among many others, glamorized cigarette smoking during the 1940's and 1950's.

Therefore efforts to improve the safety performance of young drivers should not focus exclusively on young people themselves and neglect the larger social influences that affect adolescents. Prevention programs should also be directed at parents and members of society, at the policies of social institutions such as the media, and at increasing young people's access to quality driver education.

Concern for Others

A sense of social responsibility was mentioned as a strong positive influence. For example, in a discussion about drinking and driving, one young woman expressed concern about the risk of hurting an innocent victim.

> I don't think it's right. I won't drink and drive at all.... I've never done it. I won't do it.

How come?

> It's not so much about me getting into a wreck and killing myself. That's my decision. But I don't think it's right to hurt anybody else. I just don't think it's right. If somebody else is going to do it, whatever, but I won't do it.

In some instances, even though a great concern was expressed for others, that concern was not manifested in responsible driving practices. This may be due, in part, to denial about the chances of injuring someone else and repression of unpleasant thoughts. Consider the exchange between the moderator and a young woman from the Midwest.

Do you think that you'll drive any differently ten years from now?

> I probably will.... I drive slow if those kids are in the car.

Because...

> I'm concerned for them.

So you're more concerned for them than you are for you?

> Yes, well, I figure that I couldn't live with myself if I hurt another human being, but I could live with myself if I hurt myself.

Do you ever think about the little kids that might be in the other cars on the road?

> Yes, that's something I do need to think about, but I don't, because I don't see them.

(From another group)

> I know something. Recently my sister just had a baby and when I had the baby in the car and when I was driving it, the first couple of times, I was just a nervous wreck, having the responsibility of a baby in the car, but I'm getting better now.

(Another person) Why?

I don't know. Why should it be any different than having a friend or your parents. But I don't know, it really made me nervous because it's a new life or something.

Others commented that, unlike adults, babies were not able to protect themselves. Some mentioned the bumper stickers and signs "baby on board" emphasizing that special care had to be taken when near that car.

An excerpt from one group illustrates how concern for others can result in voluntarily placing oneself in a risky situation. The group was discussing how to deal with a situation in which the driver was intoxicated and the person had to make a decision about whether or not to be a passenger.

Have you ever thought you shouldn't get in?

But then if you don't get in, it's as if you're scared for them, so you want to go with them. But then you're scared for yourself too. So it's kind of like if you don't go and they get into an accident, then you think, 'Gosh, maybe I could have stopped it.' But then if you do go, you think, 'Well, I was so stupid.'... I think I would definitely go, because I'd be worried all night.

The extent to which concern is felt for others on the road and within one's own vehicle also came up in discussions. It is unclear whether this trait is mainly a reflection of general tendencies in human relations or varies with respect to driving specifically.

In any event, concern for others is demonstrated by the way people drive differently if there is a child in the car. The value which people attached to childhood and the sacredness they seem to feel about it might be an appropriate discussion topic for young adults as they reflect on their driving practices in relation to the safety of children.

Despite the possible benefits that high concern for others may have on driving behavior, there were also examples of how concern for another may result in exposing one's self to danger. No one should ride with an intoxicated driver. Everyone should find ways to avoid it, even when concerned about what might happen to a lone driver. Everyone should acquire the art of persuading an intoxicated individual not to drive. In some circumstances, these abilities are difficult to practice with any success. But role playing, which prepares people for what to expect and suggests alternative ways to deal with such situations, may enable some to make better decisions. We must learn how to extend our concern for children to others in other cars on the road.

Conclusions and Implications

Perhaps the most definitive conclusion we have drawn from the results of this study is that while young people can be grouped by age, there are many individual differences among the 18-22 year olds. They represent a wide range of driving experience, knowledge, attitudes, capabilities and risk-taking, among other things. If there is to be any improvement in their driving behavior, where needed, they probably have to be dealt with less as a group and more as individuals than is currently the case.

One example of differences within 18-22 year olds is revealed in the findings that compared responses of females and males. The focus group discussions, the data sheet on driving, and the semantic differential results support what other researchers have found--driving problems are more prevalent among males than females. In our study, males reported engaging in risky driving practices more frequently than females, and consistently reflected poorer attitudes from a safety perspective. These results suggest that the driving safety performance of males is, in general, more problematic and perhaps more resistant to change than that of females. But the results also suggest two other conclusions in this regard: (1) females may, at times, contribute to and reinforce the problem behavior of men, and (2) there is a subgroup of women who appear to be as unsafe and irresponsible as males behind the wheel. What may be important to focus on in terms of diagnosing and dealing with driving problems may relate more to what young people believe and do, rather than on their sex. If certain attributes--such as aggressiveness, competitiveness, masculinity, machismo, etc.--that have been traditionally associated with the male role are involved in unsafe driving, it could be a mistake to focus too heavily on males and less so on females, since it appears that females are adopting what have been traditionally male social roles. For example, cigarette smoking is increasing among women, while declining among young men. It seems plausible that a similar trend could occur relevant to unsafe driving. There is another reason it would seem imprudent to overemphasize unsafe driving as a male problem: if females are better drivers, we should reinforce this behavior rather than focus excessively on those who are creating the problems. Our attempt to individualize education about driving might consider sex or gender as one of several factors in selecting the most appropriate learning experiences for the given individual.

Driving is very important to most young people for achievement of their goals. Safety is a secondary consideration. The goals include, but are not limited to: establishing independence; traveling to and from places of work or school and going places with friends; obtaining privacy; meeting new people; establishing a sense of identity; coping with or expressing emotions; achieving social status; and making the transition from youth to adulthood.

Traffic safety and driver education programs intended to favorably influence the performance of young drivers have emphasized safety as an end in itself, which from the perspective of the young is not the only or

most important goal. Therefore, it would seem wise to take a new look at safety from a new angle.

Although as adults we may view risky driving behavior by young drivers as irrational, the results of this study produced convincing evidence that risky driving behavior can, for young people, provide valuable social rewards. It can be a source of fun and excitement, and a way to escape from boredom. Several young people complained about lack of social activities. Many newly licensed drivers, particularly males, clearly enjoy the thrill of racing other drivers or driving at excessive speeds. Risky driving is also a means to show off in public and to achieve social status with a peer group. To many young drivers it is more to be admired than deplored. Trying for social status and getting attention is not restricted to men only. Excerpts from the discussions show that females encourage and reinforce risky driving by males by praising or otherwise rewarding them for it.

Another perceived benefit of risky driving is that for some it provides a way of coping with or expressing pent-up emotions such as anger, frustration, insecurity, and feelings of rejection, or of demonstrating a sense of competence. It may also represent independence and maturity.

Young people cannot always be expected to repress their emotional needs. Well-planned intervention programs can assist them to channel emotions and express their needs in constructive ways. To young drivers their behavior is not irrational. It is, however, being motivated by a rationale different from that of adults. Safe driving, from the perspective of young drivers, may have few social or other rewards, other than the avoidance of punishment or injury. Our participants thought there should be rewards for performing well in addition to punishment for doing poorly. Insurance incentives and other indications of recognition for responsible driving behavior warrant consideration.

Throughout this study, participant suggestions were numerous. Most of them were responses to direct questions. Other suggestions were extracted and synthesized from the flow of talk.

Some of the suggestions included strategies that have been tried and found wanting, such as fear tactics. But several others seemed innovative and worth looking into. One such suggestion involved greater attempts to reach young people through music and radio. This seems reasonable considering the adverse effects that have been attributed to rock music, such as increasing use of illicit drugs. Public service announcements and other educational messages are not always listened to or remembered: they often go "in one ear and out the other." Messages broadcast through popular music have been tried recently, and appear to have been well received. For example, Stevie Wonder released a rock video against drinking and driving. This medium may indeed prove useful in modifying young people's perceptions about acceptable behavior and therefore be helpful in promoting safety conscious traffic behavior.

Another suggestion, one which drew considerable support, was the use of focus group discussions as a means to help young drivers become more aware of their unsafe actions and of ways to overcome them. Unlike typical educational interventions, the focus groups provided a forum for sharing views and experiences, confronting dilemmas and discussing alternatives in a non-threatening environment.

The moderators concentrated on facilitating interaction among the participants, keeping the group on track, providing transitions, summarizing, and generally promoting favorable group dynamics. They tried to avoid the role of expert, professional, information disseminator, or teacher. For most participants, the discussion group was their first appreciable opportunity to discuss the problems, challenges, and opportunities of driving, and reflect on their own attitudes, opinions, and behaviors. They applauded the seldom offered chance to explore traffic safety problems with their peers rather than to hear "sermons" from others.

The participants generally expressed support for driver education. Some commented favorably on the quality of the course they took and its positive impact on their driving. Others complained about the lack of competence of the instructor or the overemphasis on classroom instruction combined with insufficient attention to behind-the-wheel experience. Participants tended to view driver education as a way of acquiring the mechanical skills of driving more than as an appreciation of attitudes and values conducive to responsible driving.

Socialization about driving seemed to occur to a great extent through informal channels--specifically, parents, older siblings, peers, and media (including television, movies, and music). Thus, in addition to going through formal educational channels, it is advisable to make informal efforts to reach youth with safety programs.

A large number of young drivers lack the knowledge that can improve their chances for making responsible decisions about driving. Specific beliefs, attitudes, and values that may be influencing driving habits were also identified through indirect questions posed by the moderator in more casual discussion. Stories related by participants about experiences that influenced their driving behavior went into other possible avenues for intervention, but obviously such a line of questioning could not be pursued to any firm conclusions.

Among the many misconceptions that appear to be prevalent among young drivers, those that cause the greatest concern have to do with alcohol, marijuana, and seat belts. The effects of different blood alcohol levels on perception, on sensory motor control, and on decision making were unknown to most participants. Few were able to identify sound criteria they could apply in deciding if they had had too much to drink and drive. They knew next to nothing about blood alcohol level, and little about the potency of various alcoholic beverages. Added to the lack of knowledge about the psychoactive effects of alcohol was a demonstrated

misunderstanding by some participants about the influence of marijuana on driving. A variety of myths about seat belts also emerged. Efforts should be made to determine how widespread lack of knowledge in these areas is and, where appropriate, to correct insufficiencies.

Knowledge is sometimes important in motivating individuals to behave in certain ways. But for many individuals the health-related problem is not that they do not know what they should do. The problem is that they do not do what they know they should. Attitudes, beliefs, and values are strong motivators. (These factors, discussed in the section on results, are not reviewed again here.) The results suggest the need for research on the relationship between selected attitudes, beliefs and values, and driving habits.

As measured by the semantic differential technique, attitudes toward certain concepts that were strongly related to driving behaviors were: (1) **peer pressure**, (2) **anger**, (3) **seat belts**, (4) **speeding**, (5) **risk of serious accident**, (6) **drinking**, (7) **beer**, (8) **self-confidence**, (9) **riding with an unsafe driver**, and (10) **myself**. Research to check these findings and determine the plausibility of a causal relationship between selected attitudes and driving behavior seems to be in order.

Young people's attitude toward and definition of safe driving also deserve examination in research. The overwhelming majority (98%) of study participants rated themselves as safe drivers. Yet, these same persons admitted practicing driving habits that would not be considered safe. How this apparent disparity can be reconciled, and the implications of reconciliation seem worthy of further study.

Beliefs that would have been expected to emerge did surface in several discussions. For example, perceived susceptibility to being involved in an accident was clearly different among the respondents and in some cases appeared to be an influential factor in driving behavior. Perceived severity of the consequences of poor decision making also appeared to vary widely among the group and seemed to affect some people in terms of what they did or did not do. Most apparent was the perceived potential of seat belts to reduce the severity of injuries in accidents. Systematic investigation of beliefs using the various models for health behavior changes as a framework would be worthy of study.

For many years, behavioral scientists and educators have recognized the potential influence of values on health-related behaviors. The group discussions revealed that values related to concern for others, specifically the value that some place on the sacredness of childhood, may affect driving behavior. To some participants, concern is even a key factor. This aspect of social responsibility, however, may be difficult to work on, but efforts (1) to identify youth who take a dim view of social responsibility, and (2) to devise remedial programs are worthy, at least, of preliminary study.

Many young people place a special value on the sacredness of childhood, and their greatest fear is of harming a child in an auto accident. If children are in their car, they drive extra carefully and take safety precautions not customary for them, such as using their seat belts. Unfortunately, concern for children often is not generalized into driving cautiously to protect children in other cars, and this matter needs attention. It may be advantageous for driver improvement programs to capitalize on this special feeling of young people for children.

Traffic safety professionals should be aware that their own values and ways of viewing the world can be very different from those of age 18-22. Without this realization, the professionals can overemphasize their prime concern--**Safety**--to the neglect of the agenda of those they are trying to influence. Furthermore, for a number of reasons, the approach of professionals who stress safety exclusively may be questionable. First, if a young driver always wears a seat belt, never drives after drinking, does not speed or take other risks, there is no **assurance** that he or she will not be in a serious or fatal accident. Second, many individuals suffer the "it can't happen to me" affliction, which can result in dealing with safety messages by denying them. Third, many unsafe driving practices appear to be rooted in emotional rather than in cognitive causes, and appeals to the latter will be of limited effectiveness. Fourth, safety rationales break down when a driver is considering performing a risk action "just this one time." Fifth, many of the unsafe practices warned against have been performed repeatedly without adverse effects, thus damaging the credibility of the message.

The implication of this awareness is the need to approach young driver improvement programs from the perspective of the young drivers themselves, including:

1. focusing on their values and goals;

2. recognizing the possible social attractiveness of unsafe driving as perceived by young people;

3. identifying and dealing with the emotional causes of unsafe driving;

4. assisting young people to find ways other than unsafe driving to achieve their personal goals--and to learn the skills necessary to accomplish this.

A model is needed for what safety professionals wish young drivers to be and do, and some way to show how they measure up to the standards of that model. And methods and appropriate materials are required for helping them deal with shortcomings. Our findings in this study prompt us to set forth for young people some attributes of good driving. These are: (1) motivation to drive in a way that will maximize the benefits of driving and minimize the potential for harm to self and others; (2) ability to act on this motivation; (3) practicing responsible behaviors habitually; and (4) advocating this behavior to other young drivers.

The motivation to drive in a way that maximizes the benefits and the potential for harm is influenced, we believe, by the knowledge, attitudes, beliefs, and values discussed in the body of this report. These factors are not reviewed again here. One factc however, that seems especially important and is lacking among too many young drivers was an adequate sense of social responsibility. To promote a stronger sense of responsibility, however, may require intensive attention. But we believe that the beneficial effects of greater social responsibility among young drivers would be substantial.

Ability to act on motivation is directly influenced by acquired driving skills as well as requisite perceptual abilities and motor coordination. With adequate training and practice the majority of youth are capable of developing both. Will power to resist peer pressure to drive dangerously is another matter, one which does not appear to have received adequate attention in driver education programs.

According to our model, youth should not only know what to do and not to do with respect to driving and why they should or should not do these things; they must also habitually engage in safe driving performance. This means to avoid: driving while under the influence of alcohol and other psychoactive drugs, risk-taking, racing, tailgating, riding with an unsafe driver, and driving when tired or emotionally upset. It means to fasten seat belts, observe speed limits, treat other drivers courteously, and generally, to follow traffic regulations.

Finally, our model young driver would be an advocate for responsible driving by his or her peers. Adopting an advocacy role would not only confer benefits to others, but would help reinforce and maintain one's own motivations, abilities, and actions. Advocacy could be expressed in formal ways through involvement in local groups related to traffic safety, such as the AAA club, or informally through school activities or interactions with peers.

We repeat, there are many individual differences among young drivers with respect to the qualities outlined above. Current educational programs appear to be highly standardized, unresponsive to the individual needs of young drivers, assuming that these are recognized. We believe that diagnostic tools that would assist educators to channel young people into appropriate learning experiences, and that could be used by young drivers themselves to recongize and reflect upon their driving styles, would be a contribution to driver improvement efforts.

This study, we like to think, has been a start in that direction.

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APPENDIX A

DRIVER STUDY

The purpose of this study is to find out how people feel about driving. We think young people, whether new or experienced drivers, are in a good position to help us understand the real problems in traffic safety and to suggest practical solutions, and we are counting on you to help us with this by doing three things:

1. Completing a word rating form;
2. Completing a short form about your driving;
3. Participating in a discussion about driving and accidents.

Your responses will be kept completely confidential.

Thank you very much for your help.

WORD RATING FORM

INSTRUCTIONS:

We are interested in first impressions and associations certain words or phrases may bring to your mind, and are asking you to rate 28 of these on a 7-position scale like the following:

Suppose the word is "AUTOMOBILE"---if you feel that on the scale "QUIET...NOISY," "AUTOMOBILE" is very closely associated with "NOISY," you would mark an (X) as follows:

AUTOMOBILE

QUIET ( ) ( ) ( ) ( ) ( ) ( ) (X) NOISY

On the other hand, if you feel that "AUTOMOBILE" is slightly associated with "QUIET," you would mark an (X) as follows:

QUIET ( ) ( ) (X) ( ) ( ) ( ) ( ) NOISY

If "AUTOMOBILE" does not seem to you to be associated more with one end of the scale than with the other, you would mark an (X) as follows:

QUIET ( ) ( ) ( ) (X) ( ) ( ) ( ) NOISY

There are no right or wrong answers. The meaning that a particular word or phrase has for you may be appropriately described by an (X) in any one of the 7 spaces on each of the scales. Please work as rapidly as you can. Often a vague general impression will be all you have to go on.

Please check to be sure that you have completed all scales on all 28 pages.

THANK YOU FOR YOUR HELP.

CAR

STABLE	( )	( )	( )	( )	( )	( )	( )	CHANGEABLE
OLD	( )	( )	( )	( )	( )	( )	( )	YOUNG
SOFT	( )	( )	( )	( )	( )	( )	( )	HARD
PLEASANT	( )	( )	( )	( )	( )	( )	( )	UNPLEASANT
BAD	( )	( )	( )	( )	( )	( )	( )	GOOD
FAST	( )	( )	( )	( )	( )	( )	( )	SLOW
EXCITABLE	( )	( )	( )	( )	( )	( )	( )	CALM
THICK	( )	( )	( )	( )	( )	( )	( )	THIN
ALIVE	( )	( )	( )	( )	( )	( )	( )	DEAD
LARGE	( )	( )	( )	( )	( )	( )	( )	SMALL
FOOLISH	( )	( )	( )	( )	( )	( )	( )	WISE
LOW	( )	( )	( )	( )	( )	( )	( )	HIGH
OPEN	( )	( )	( )	( )	( )	( )	( )	CLOSED
CARELESS	( )	( )	( )	( )	( )	( )	( )	CAREFUL
SAFE	( )	( )	( )	( )	( )	( )	( )	UNSAFE
SURE	( )	( )	( )	( )	( )	( )	( )	UNCERTAIN

DRIVING

STABLE	( )	( )	( )	( )	( )	( )	( )	CHANGEABLE
OLD	( )	( )	( )	( )	( )	( )	( )	YOUNG
SOFT	( )	( )	( )	( )	( )	( )	( )	HARD
PLEASANT	( )	( )	( )	( )	( )	( )	( )	UNPLEASANT
BAD	( )	( )	( )	( )	( )	( )	( )	GOOD
FAST	( )	( )	( )	( )	( )	( )	( )	SLOW
EXCITABLE	( )	( )	( )	( )	( )	( )	( )	CALM
THICK	( )	( )	( )	( )	( )	( )	( )	THIN
ALIVE	( )	( )	( )	( )	( )	( )	( )	DEAD
LARGE	( )	( )	( )	( )	( )	( )	( )	SMALL
FOOLISH	( )	( )	( )	( )	( )	( )	( )	WISE
LOW	( )	( )	( )	( )	( )	( )	( )	HIGH
OPEN	( )	( )	( )	( )	( )	( )	( )	CLOSED
CARELESS	( )	( )	( )	( )	( )	( )	( )	CAREFUL
SAFE	( )	( )	( )	( )	( )	( )	( )	UNSAFE
SURE	( )	( )	( )	( )	( )	( )	( )	UNCERTAIN

RISK TAKING

STABLE	( )	( )	( )	( )	( )	( )	( )	CHANGEABLE
OLD	( )	( )	( )	( )	( )	( )	( )	YOUNG
SOFT	( )	( )	( )	( )	( )	( )	( )	HARD
PLEASANT	( )	( )	( )	( )	( )	( )	( )	UNPLEASANT
BAD	( )	( )	( )	( )	( )	( )	( )	GOOD
FAST	( )	( )	( )	( )	( )	( )	( )	SLOW
EXCITABLE	( )	( )	( )	( )	( )	( )	( )	CALM
THICK	( )	( )	( )	( )	( )	( )	( )	THIN
ALIVE	( )	( )	( )	( )	( )	( )	( )	DEAD
LARGE	( )	( )	( )	( )	( )	( )	( )	SMALL
FOOLISH	( )	( )	( )	( )	( )	( )	( )	WISE
LOW	( )	( )	( )	( )	( )	( )	( )	HIGH
OPEN	( )	( )	( )	( )	( )	( )	( )	CLOSED
CARELESS	( )	( )	( )	( )	( )	( )	( )	CAREFUL
SAFE	( )	( )	( )	( )	( )	( )	( )	UNSAFE
SURE	( )	( )	( )	( )	( )	( )	( )	UNCERTAIN

ERIC

PEER PRESSURE

STABLE	( )	( )	( )	( )	( )	( )	( )	CHANGEABLE
OLD	( )	( )	( )	( )	( )	( )	( )	YOUNG
SOFT	( )	( )	( )	( )	( )	( )	( )	HARD
PLEASANT	( )	( )	( )	( )	( )	( )	( )	UNPLEASANT
BAD	( )	( )	( )	( )	( )	( )	( )	GOOD
FAST	( )	( )	( )	( )	( )	( )	( )	SLOW
EXCITABLE	( )	( )	( )	( )	( )	( )	( )	CALM
THICK	( )	( )	( )	( )	( )	( )	( )	THIN
ALIVE	( )	( )	( )	( )	( )	( )	( )	DEAD
LARGE	( )	( )	( )	( )	( )	( )	( )	SMALL
FOOLISH	( )	( )	( )	( )	( )	( )	( )	WISE
LOW	( )	( )	( )	( )	)	( )	( )	HIGH
OPEN	( )	( )	( )	( )	( )	( )	( )	CLOSED
CARELESS	( )	( )	( )	( )	( )	( )	( )	CAREFUL
SAFE	( )	( )	( )	( )	( )	( )	( )	UNSAFE
SURE	( )	( )	( )	( )	( )	( )	( )	UNCERTAIN

ANGER

STABLE	( )	( )	( )	( )	( )	( )	( )	CHANGEABLE
OLD	( )	( )	( )	( )	( )	( )	( )	YOUNG
SOFT	( )	( )	( )	( )	( )	( )	( )	HARD
PLEASANT	( )	( )	( )	( )	( )	( )	( )	UNPLEASANT
BAD	( )	( )	( )	( )	( )	( )	( )	GOOD
FAST	( )	( )	( )	( )	( )	( )	( )	SLOW
EXCITABLE	( )	( )	( )	( )	( )	( )	( )	CALM
THICK	( )	( )	( )	( )	( )	( )	( )	THIN
ALIVE	( )	( )	( )	( )	( )	( )	( )	DEAD
LARGE	( )	( )	( )	( )	( )	( )	( )	SMALL
FOOLISH	( )	( )	( )	( )	( )	( )	( )	WISE
LOW	( )	( )	( )	( )	( )	( )	( )	HIGH
OPEN	( )	( )	( )	( )	( )	( )	( )	CLOSED
CARELESS	( )	( )	( )	( )	( )	( )	( )	CAREFUL
SAFE	( )	( )	( )	( )	( )	( )	( )	UNSAFE
SURE	( )	( )	( )	( )	( )	( )	( )	UNCERTAIN

POWER

STABLE	( )	( )	( )	( )	( )	( )	( )	CHANGEABLE
OLD	( )	( )	( )	( )	( )	( )	( )	YOUNG
SOFT	( )	( )	( )	( )	( )	( )	( )	HARD
PLEASANT	( )	( )	( )	( )	( )	( )	( )	UNPLEASANT
BAD	( )	( )	( )	( )	( )	( )	( )	GOOD
FAST	( )	( )	( )	( )	( )	( )	( )	SLOW
EXCITABLE	( )	( )	( )	( )	( )	( )	( )	CALM
THICK	( )	( )	( )	( )	( )	( )	( )	THIN
ALIVE	( )	( )	( )	( )	( )	( )	( )	DEAD
LARGE	( )	( )	( )	( )	( )	( )	( )	SMALL
FOOLISH	( )	( )	( )	( )	( )	( )	( )	WISE
LOW	( )	( )	( )	( )	( )	( )	( )	HIGH
OPEN	( )	( )	( )	( )	( )	( )	( )	CLOSED
CARELESS	( )	( )	( )	( )	( )	( )	( )	CAREFUL
SAFE	( )	( )	( )	( )	( )	( )	( )	UNSAFE
SURE	( )	( )	( )	( )	( )	( )	( )	UNCERTAIN

PARTYING

STABLE	( )	( )	( )	( )	( )	( )	( )	CHANGEABLE
OLD	( )	( )	( )	( )	( )	( )	( )	YOUNG
SOFT	( )	( )	( )	( )	( )	( )	( )	HARD
PLEASANT	( )	( )	( )	( )	( )	( )	( )	UNPLEASANT
BAD	( )	( )	( )	( )	( )	( )	( )	GOOD
FAST	( )	( )	( )	( )	( )	( )	( )	SLOW
EXCITABLE	( )	( )	( )	( )	( )	( )	( )	CALM
THICK	( )	( )	( )	( )	( )	( )	( )	THIN
ALIVE	( )	( )	( )	( )	( )	( )	( )	DEAD
LARGE	( )	( )	( )	( )	( )	( )	( )	SMALL
FOOLISH	( )	( )	( )	( )	( )	( )	( )	WISE
LOW	( )	( )	( )	( )	( )	( )	( )	HIGH
OPEN	( )	( )	( )	( )	( )	( )	( )	CLOSED
CARELESS	( )	( )	( )	( )	( )	( )	( )	CAREFUL
SAFE	( )	( )	( )	( )	( )	( )	( )	UNSAFE
SURE	( )	( )	( )	( )	( )	( )	( )	UNCERTAIN

SEAT BELTS

STABLE	( )	( )	( )	( )	( )	( )	( )	CHANGEABLE
OLD	( )	( )	( )	( )	( )	( )	( )	YOUNG
SOFT	( )	( )	( )	( )	( )	( )	( )	HARD
PLEASANT	( )	( )	( )	( )	( )	( )	( )	UNPLEASANT
BAD	( )	( )	( )	( )	( )	( )	( )	GOOD
FAST	( )	( )	( )	( )	( )	( )	( )	SLOW
EXCITABLE	( )	( )	( )	( )	( )	( )	( )	CALM
THICK	( )	( )	( )	( )	( )	( )	( )	THIN
ALIVE	( )	( )	( )	( )	( )	( )	( )	DEAD
LARGE	( )	( )	( )	( )	( )	( )	( )	SMALL
FOOLISH	( )	( )	( )	( )	( )	( )	( )	WISE
LOW	( )	( )	( )	( )	( )	( )	( )	HIGH
OPEN	( )	( )	( )	( )	( )	( )	( )	CLOSED
CARELESS	( )	( )	( )	( )	( )	( )	( )	CAREFUL
SAFE	( )	( )	( )	( )	( )	( )	( )	UNSAFE
SURE	( )	( )	( )	( )	( )	( )	( )	UNCERTAIN

SPEEDING

STABLE	( )	( )	( )	( )	( )	( )	( )	CHANGEABLE
OLD	( )	( )	( )	( )	( )	( )	( )	YOUNG
SOFT	( )	( )	( )	( )	( )	( )	( )	HARD
PLEASANT	( )	( )	( )	( )	( )	( )	( )	UNPLEASANT
BAD	( )	( )	( )	( )	( )	( )	( )	GOOD
FAST	( )	( )	( )	( )	( )	( )	( )	SLOW
EXCITABLE	( )	( )	( )	( )	( )	( )	( )	CALM
THICK	( )	( )	( )	( )	( )	( )	( )	THIN
ALIVE	( )	( )	( )	( )	( )	( )	( )	DEAD
LARGE	( )	( )	( )	( )	( )	( )	( )	SMALL
FOOLISH	( )	( )	( )	( )	( )	( )	( )	WISE
LOW	( )	( )	( )	( )	( )	( )	( )	HIGH
OPEN	( )	( )	( )	( )	( )	( )	( )	CLOSED
CARELESS	( )	( )	( )	( )	( )	( )	( )	CAREFUL
SAFE	( )	( )	( )	( )	( )	( )	( )	UNSAFE
SURE	( )	( )	( )	( )	( )	( )	( )	UNCERTAIN

POLICE

STABLE	( )	( )	( )	( )	( )	( )	( )	CHANGEABLE
OLD	( )	( )	( )	( )	( )	( )	( )	YOUNG
SOFT	( )	( )	( )	( )	( )	( )	( )	HARD
PLEASANT	( )	( )	( )	( )	( )	( )	( )	UNPLEASANT
BAD	( )	( )	( )	( )	( )	( )	( )	GOOD
FAST	( )	( )	( )	( )	( )	( )	( )	SLOW
EXCITABLE	( )	( )	( )	( )	( )	( )	( )	CALM
THICK	( )	( )	( )	( )	( )	( )	( )	THIN
ALIVE	( )	( )	( )	( )	( )	( )	( )	DEAD
LARGE	( )	( )	( )	( )	( )	( )	( )	SMALL
FOOLISH	( )	( )	( )	( )	( )	( )	( )	WISE
LOW	( )	( )	( )	( )	( )	( )	( )	HIGH
OPEN	( )	( )	( )	( )	( )	( )	( )	CLOSED
CARELESS	( )	( )	( )	( )	( )	( )	( )	CAREFUL
SAFE	( )	( )	( )	( )	( )	( )	( )	UNSAFE
SURE	( )	( )	( )	( )	( )	( )	( )	UNCERTAIN

MY RISK OF A SERIOUS AUTOMOBILE ACCIDENT

STABLE	( )	( )	( )	( )	( )	( )	( )	CHANGEABLE
OLD	( )	( )	( )	( )	( )	( )	( )	YOUNG
SOFT	( )	( )	( )	( )	( )	( )	( )	HARD
PLEASANT	( )	( )	( )	( )	( )	( )	( )	UNPLEASANT
BAD	( )	( )	( )	( )	( )	( )	( )	GOOD
FAST	( )	( )	( )	( )	( )	( )	( )	SLOW
EXCITABLE	( )	( )	( )	( )	( )	( )	( )	CALM
THICK	( )	( )	( )	( )	( )	( )	( )	THIN
ALIVE	( )	( )	( )	( )	( )	( )	( )	DEAD
LARGE	( )	( )	( )	( )	( )	( )	( )	SMALL
FOOLISH	( )	( )	( )	( )	( )	( )	( )	WISE
LOW	( )	( )	( )	( )	( )	( )	( )	HIGH
OPEN	( )	( )	( )	( )	( )	( )	( )	CLOSED
CARELESS	( )	( )	( )	( )	( )	( )	( )	CAREFUL
SAFE	( )	( )	( )	( )	( )	( )	( )	UNSAFE
SURE	( )	( )	( )	( )	( )	( )	( )	UNCERTAIN

DRINKING

STABLE	( )	( )	( )	( )	( )	( )	( )	CHANGEABLE
OLD	( )	( )	( )	( )	( )	( )	( )	YOUNG
SOFT	( )	( )	( )	( )	( )	( )	( )	HARD
PLEASANT	( )	( )	( )	( )	( )	( )	( )	UNPLEASANT
BAD	( )	( )	( )	( )	( )	( )	( )	GOOD
FAST	( )	( )	( )	( )	( )	( )	( )	SLOW
EXCITABLE	( )	( )	( )	( )	( )	( )	( )	CALM
THICK	( )	( )	( )	( )	( )	( )	( )	THIN
ALIVE	( )	( )	( )	( )	( )	( )	( )	DEAD
LARGE	( )	( )	( )	( )	( )	( )	( )	SMALL
FOOLISH	( )	( )	( )	( )	( )	( )	( )	WISE
LOW	( )	( )	( )	( )	( )	( )	(	HIGH
OPEN	( )	( )	( )	( )	( )	( )	( )	CLOSED
CARELESS	( )	( )	( )	( )	( )	( )	( )	CAREFUL
SAFE	( )	( )	( )	( )	( )	( )	( )	UNSAFE
SURE	( )	( )	( )	( )	( )	( )	( )	UNCERTAIN

SAFE DRIVING

STABLE	( )	( )	( )	( )	( )	( )	( )	CHANGEABLE
OLD	( )	( )	( )	( )	( )	( )	( )	YOUNG
SOFT	( )	( )	( )	( )	( )	( )	( )	HARD
PLEASANT	( )	( )	( )	( )	( )	( )	( )	UNPLEASANT
BAD	( )	( )	( )	( )	( )	( )	( )	GOOD
FAST	( )	( )	( )	( )	( )	( )	( )	SLOW
EXCITABLE	( )	( )	( )	( )	( )	( )	( )	CALM
THICK	( )	( )	( )	( )	( )	( )	( )	THIN
ALIVE	( )	( )	( )	( )	( )	( )	( )	DEAD
LARGE	( )	( )	( )	( )	( )	( )	( )	SMALL
FOOLISH	( )	( )	( )	( )	( )	( )	( )	WISE
LOW	( )	( )	( )	( )	( )	( )	( )	HIGH
OPEN	( )	( )	( )	( )	( )	( )	( )	CLOSED
CARELESS	( )	( )	( )	( )	( )	( )	( )	CAREFUL
SAFE	( )	( )	( )	( )	( )	( )	( )	UNSAFE
SURE	( )	( )	( )	( )	( )	( )	( )	UNCERTAIN

BEER

STABLE	( )	( )	( )	( )	( )	( )	( )	CHANGEABLE
OLD	( )	( )	( )	( )	( )	( )	( )	YOUNG
SOFT	( )	( )	( )	( )	( )	( )	( )	HARD
PLEASANT	( )	( )	( )	( )	( )	( )	( )	UNPLEASANT
BAD	( )	( )	( )	( )	( )	( )	( )	GOOD
FAST	( )	( )	( )	( )	( )	( )	( )	SLOW
EXCITABLE	( )	( )	( )	( )	( )	( )	( )	CALM
THICK	( )	( )	( )	( )	( )	( )	( )	THIN
ALIVE	( )	( )	( )	( )	( )	( )	( )	DEAD
LARGE	( )	( )	( )	( )	( )	( )	( )	SMALL
FOOLISH	( )	( )	( )	( )	( )	( )	( )	WISE
LOW	( )	( )	( )	( )	( )	( )	( )	HIGH
OPEN	( )	( )	( )	( )	( )	( )	( )	CLOSED
CARELESS	( )	( )	( )	( )	( )	( )	( )	CAREFUL
SAFE	( )	( )	( )	( )	( )	( )	( )	UNSAFE
SURE	( )	( )	( )	( )	( )	( )	( )	UNCERTAIN

DRINKING AND DRIVING

STABLE	( )	( )	( )	( )	( )	( )	( )	CHANGEABLE
OLD	( )	( )	( )	( )	( )	( )	( )	YOUNG
SOFT	( )	( )	( )	( )	( )	( )	( )	HARD
PLEASANT	( )	( )	( )	( )	( )	( )	( )	UNPLEASANT
BAD	( )	( )	( )	( )	( )	( )	( )	GOOD
FAST	( )	( )	( )	( )	( )	( )	( )	SLOW
EXCITABLE	( )	( )	( )	( )	( )	( )	( )	CALM
THICK	( )	( )	( )	( )	( )	( )	( )	THIN
ALIVE	( )	( )	( )	( )	( )	( )	( )	DEAD
LARGE	( )	( )	( )	( )	( )	( )	( )	SMALL
FOOLISH	( )	( )	( )	( )	( )	( )	( )	WISE
LOW	( )	( )	( )	( )	( )	( )	( )	HIGH
OPEN	( )	( )	( )	( )	( )	( )	( )	CLOSED
CARELESS	( )	( )	( )	( )	( )	( )	( )	CAREFUL
SAFE	( )	( )	( )	( )	( )	( )	( )	UNSAFE
SURE	( )	( )	( )	( )	( )	( )	( )	UNCERTAIN

SELF-CONTROL

STABLE	( )	( )	( )	( )	( )	( )	( )	CHANGEABLE
OLD	( )	( )	( )	( )	( )	( )	( )	YOUNG
SOFT	( )	( )	( )	( )	( )	( )	( )	HARD
PLEASANT	( )	( )	( )	( )	( )	( )	( )	UNPLEASANT
BAD	( )	( )	( )	( )	( )	( )	( )	GOOD
FAST	( )	( )	( )	( )	( )	( )	( )	SLOW
EXCITABLE	( )	( )	( )	( )	( )	( )	( )	CALM
THICK	( )	( )	( )	( )	( )	( )	( )	THIN
ALIVE	( )	( )	( )	( )	( )	( )	( )	DEAD
LARGE	( )	( )	( )	( )	( )	( )	( )	SMALL
FOOLISH	( )	( )	( )	( )	( )	( )	( )	WISE
LOW	( )	( )	( )	( )	( )	( )	( )	HIGH
OPEN	( )	( )	( )	( )	( )	( )	( )	CLOSED
CARELESS	( )	( )	( )	( )	( )	( )	( )	CAREFUL
SAFE	( )	( )	( )	( )	( )	( )	( )	UNSAFE
SURE	( )	( )	( )	( )	( )	( )	( )	UNCERTAIN

TWENTY-ONE YEAR OLD DRINKING AGE

STABLE	( )	( )	( )	( )	( )	( )	( )	CHANGEABLE
OLD	( )	( )	( )	( )	( )	( )	( )	YOUNG
SOFT	( )	( )	( )	( )	( )	( )	( )	HARD
PLEASANT	( )	( )	( )	( )	( )	( )	( )	UNPLEASANT
BAD	( )	( )	( )	( )	( )	( )	( )	GOOD
FAST	( )	( )	( )	( )	( )	( )	( )	SLOW
EXCITABLE	( )	( )	( )	( )	( )	( )	( )	CALM
THICK	( )	( )	( )	( )	( )	( )	( )	THIN
ALIVE	( )	( )	( )	( )	( )	( )	( )	DEAD
LARGE	( )	( )	( )	( )	( )	( )	( )	SMALL
FOOLISH	( )	( )	( )	( )	( )	( )	( )	WISE
LOW	( )	( )	( )	( )	( )	( )	( )	HIGH
OPEN	( )	( )	( )	( )	( )	( )	( )	CLOSED
CARELESS	( )	( )	( )	( )	( )	( )	( )	CAREFUL
SAFE	( )	( )	( )	( )	( )	( )	( )	UNSAFE
SURE	( )	( )	( )	( )	( )	( )	( )	UNCERTAIN

YOUNG DRIVER

STABLE	( )	( )	( )	( )	( )	( )	( )	CHANGEABLE
OLD	( )	( )	( )	( )	( )	( )	( )	YOUNG
SOFT	( )	( )	( )	( )	( )	( )	( )	HARD
PLEASANT	( )	( )	( )	( )	( )	( )	( )	UNPLEASANT
BAD	( )	( )	( )	( )	( )	( )	( )	GOOD
FAST	( )	( )	( )	( )	( )	( )	( )	SLOW
EXCITABLE	( )	( )	( )	( )	( )	( )	( )	CALM
THICK	( )	( )	( )	( )	( )	( )	( )	THIN
ALIVE	( )	( )	( )	( )	( )	( )	( )	DEAD
LARGE	( )	( )	( )	( )	( )	( )	( )	SMALL
FOOLISH	( )	( )	( )	( )	( )	( )	( )	WISE
LOW	( )	( )	( )	( )	( )	( )	( )	HIGH
OPEN	( )	( )	( )	( )	( )	( )	( )	CLOSED
CARELESS	( )	( )	( )	( )	( )	( )	( )	CAREFUL
SAFE	( )	( )	( )	( )	( )	( )	( )	UNSAFE
SURE	( )	( )	( )	( )	( )	( )	( )	UNCERTAIN

WINE

STABLE	( )	( )	( )	( )	( )	( )	( )	CHANGEABLE
OLD	( )	( )	( )	( )	( )	( )	( )	YOUNG
SOFT	( )	( )	( )	( )	( )	( )	( )	HARD
PLEASANT	( )	( )	( )	( )	( )	( )	( )	UNPLEASANT
BAD	( )	( )	( )	( )	( )	( )	( )	GOOD
FAST	( )	( )	( )	( )	( )	( )	( )	SLOW
EXCITABLE	( )	( )	( )	( )	( )	( )	( )	CALM
THICK	( )	( )	( )	( )	( )	( )	( )	THIN
ALIVE	( )	( )	( )	( )	( )	( )	( )	DEAD
LARGE	( )	( )	( )	( )	( )	( )	( )	SMALL
FOOLISH	( )	( )	( )	( )	( )	( )	( )	WISE
LOW	( )	( )	( )	( )	( )	( )	( )	HIGH
OPEN	( )	( )	( )	( )	( )	( )	( )	CLOSED
CARELESS	( )	( )	( )	( )	( )	( )	( )	CAREFUL
SAFE	( )	( )	( )	( )	( )	( )	( )	UNSAFE
SURE	( )	( )	( )	( )	( )	( )	( )	UNCERTAIN

FRIENDS

STABLE	( )	( )	( )	( )	( )	( )	( )	CHANGEABLE
OLD	( )	( )	( )	( )	( )	( )	( )	YOUNG
SOFT	( )	( )	( )	( )	( )	( )	( )	HARD
PLEASANT	( )	( )	( )	( )	( )	( )	( )	UNPLEASANT
BAD	( )	( )	( )	( )	( )	( )	( )	GOOD
FAST	( )	( )	( )	( )	( )	( )	( )	SLOW
EXCITABLE	( )	( )	( )	( )	( )	( )	( )	CALM
THICK	( )	( )	( )	( )	( )	( )	( )	THIN
ALIVE	( )	( )	( )	( )	( )	( )	( )	DEAD
LARGE	( )	( )	( )	( )	( )	( )	( )	SMALL
FOOLISH	( )	( )	( )	( )	( )	( )	( )	WISE
LOW	( )	( )	( )	( )	( )	( )	( )	HIGH
OPEN	( )	( )	( )	( )	( )	( )	( )	CLOSED
CARELESS	( )	( )	( )	( )	( )	( )	( )	CAREFUL
SAFE	( )	( )	( )	( )	( )	( )	( )	UNSAFE
SURE	( )	( )	( )	( )	( )	( )	( )	UNCERTAIN

PARENT

STABLE	( )	( )	( )	( )	( )	( )	( )	CHANGEABLE
OLD	( )	( )	( )	( )	( )	( )	( )	YOUNG
SOFT	( )	( )	( )	( )	( )	( )	( )	HARD
PLEASANT	( )	( )	( )	( )	( )	( )	( )	UNPLEASANT
BAD	( )	( )	( )	( )	( )	( )	( )	GOOD
FAST	( )	( )	( )	( )	( )	( )	( )	SLOW
EXCITABLE	( )	( )	( )	( )	( )	( )	( )	CALM
THICK	( )	( )	( )	( )	( )	( )	( )	THIN
ALIVE	( )	( )	( )	( )	( )	( )	( )	DEAD
LARGE	( )	( )	( )	( )	( )	( )	( )	SMALL
FOOLISH	( )	( )	( )	( )	( )	( )	( )	WISE
LOW	( )	( )	( )	( )	( )	( )	( )	HIGH
OPEN	( )	( )	( )	( )	( )	( )	( )	CLOSED
CARELESS	( )	( )	( )	( )	( )	( )	( )	CAREFUL
SAFE	( )	( )	( )	( )	( )	( )	( )	UNSAFE
SURE	( )	( )	( )	( )	( )	( )	( )	UNCERTAIN

HARD LIQUOR

STABLE	( )	( )	( )	( )	( )	( )	( )	CHANGEABLE
OLD	( )	( )	( )	( )	( )	( )	( )	YOUNG
SOFT	( )	( )	( )	( )	( )	( )	( )	HARD
PLEASANT	( )	( )	( )	( )	( )	( )	( )	UNPLEASANT
BAD	( )	( )	( )	( )	( )	( )	( )	GOOD
FAST	( )	( )	( )	( )	( )	( )	( )	SLOW
EXCITABLE	( )	( )	( )	( )	( )	( )	( )	CALM
THICK	( )	( )	( )	( )	( )	( )	( )	THIN
ALIVE	( )	( )	( )	( )	( )	( )	( )	DEAD
LARGE	( )	( )	( )	( )	( )	( )	( )	SMALL
FOOLISH	( )	( )	( )	( )	( )	( )	( )	WISE
LOW	( )	( )	( )	( )	( )	( )	( )	HIGH
OPEN	( )	( )	( )	( )	( )	( )	( )	CLOSED
CARELESS	( )	( )	( )	( )	( )	( )	( )	CAREFUL
SAFE	( )	( )	( )	( )	( )	( )	( )	UNSAFE
SURE	( )	( )	( )	( )	( )	( )	( )	UNCERTAIN

FREEDOM

STABLE	( )	( )	( )	( )	( )	( )	( )	CHANGEABLE
OLD	( )	( )	( )	( )	( )	( )	( )	YOUNG
SOFT	( )	( )	( )	( )	( )	( )	( )	HARD
PLEASANT	( )	( )	( )	( )	( )	( )	( )	UNPLEASANT
BAD	( )	( )	( )	( )	( )	( )	( )	GOOD
FAST	( )	( )	( )	( )	( )	( )	( )	SLOW
EXCITABLE	( )	( )	( )	( )	( )	( )	( )	CALM
THICK	( )	( )	( )	( )	( )	( )	( )	THIN
ALIVE	( )	( )	( )	( )	( )	( )	( )	DEAD
LARGE	( )	( )	( )	( )	( )	( )	( )	SMALL
FOOLISH	( )	( )	( )	( )	( )	( )	( )	WISE
LOW	( )	( )	( )	( )	( )	( )	( )	HIGH
OPEN	( )	( )	( )	( )	( )	( )	( )	CLOSED
CARELESS	( )	( )	( )	( )	( )	( )	( )	CAREFUL
SAFE	( )	( )	( )	( )	( )	( )	( )	NSAFE
SURE	( )	( )	( )	( )	( )	( )	( )	UNCERTAIN

DRUGS

STABLE	( )	( )	( )	( )	( )	( )	( )	CHANGEABLE
OLD	( )	( )	( )	( )	( )	( )	( )	YOUNG
SOFT	( )	( )	( )	( )	( )	( )	( )	HARD
PLEASANT	( )	( )	( )	( )	( )	( )	( )	UNPLEASANT
BAD	( )	( )	( )	( )	( )	( )	( )	GOOD
FAST	( )	( )	( )	( )	( )	( )	( )	SLOW
EXCITABLE	( )	( )	( )	( )	( )	( )	( )	CALM
THICK	( )	( )	( )	( )	( )	( )	( )	THIN
ALIVE	( )	( )	( )	( )	( )	( )	( )	DEAD
LARGE	( )	( )	( )	( )	( )	( )	( )	SMALL
FOOLISH	( )	( )	( )	( )	( )	( )	( )	WISE
LOW	( )	( )	( )	( )	( )	( )	( )	HIGH
OPEN	( )	( )	( )	( )	( )	( )	( )	CLOSED
CARELESS	( )	( )	( )	( )	( )	( )	( )	CAREFUL
SAFE	( )	( )	( )	( )	( )	( )	( )	UNSAFE
SURE	( )	( )	( )	( )	( )	( )	( )	UNCERTAIN

SELF-CONFIDENCE

STABLE	( )	( )	( )	( )	( )	( )	( )	CHANGEABLE
OLD	( )	( )	( )	( )	( )	( )	( )	YOUNG
SOFT	( )	( )	( )	( )	( )	( )	( )	HARD
PLEASANT	( )	( )	( )	( )	( )	( )	( )	UNPLEASANT
BAD	( )	( )	( )	( )	( )	( )	( )	GOOD
FAST	( )	( )	( )	( )	( )	( )	( )	SLOW
EXCITABLE	( )	( )	( )	( )	( )	( )	( )	CALM
THICK	( )	( )	( )	( )	( )	( )	( )	THIN
ALIVE	( )	( )	( )	( )	( )	( )	( )	DEAD
LARGE	( )	( )	( )	( )	( )	( )	( )	SMALL
FOOLISH	( )	( )	( )	( )	( )	( )	( )	WISE
LOW	( )	( )	( )	( )	( )	( )	( )	HIGH
OPEN	( )	( )	( )	( )	( )	( )	( )	CLOSED
CARELESS	( )	( )	( )	( )	( )	( )	( )	CAREFUL
SAFE	( )	( )	( )	( )	( )	( )	( )	UNSAFE
SURE	( )	( )	( )	( )	( )	( )	( )	UNCERTAIN

RIDING WITH AN UNSAFE DRIVER

STABLE	( )	( )	( )	( )	( )	( )	( )	CHANGEABLE
OLD	( )	( )	( )	( )	( )	( )	( )	YOUNG
SOFT	( )	( )	( )	( )	( )	( )	( )	HARD
PLEASANT	( )	( )	( )	( )	( )	( )	( )	UNPLEASANT
BAD	( )	( )	( )	( )	( )	( )	( )	GOOD
FAST	( )	( )	( )	( )	( )	( )	( )	SLOW
EXCITABLE	( )	( )	( )	( )	( )	( )	( )	CALM
THICK	( )	( )	( )	( )	( )	( )	( )	THIN
ALIVE	( )	( )	( )	( )	( )	( )	( )	DEAD
LARGE	( )	( )	( )	( )	( )	( )	( )	SMALL
FOOLISH	( )	( )	( )	( )	( )	( )	( )	WISE
LOW	( )	( )	( )	( )	( )	( )	( )	HIGH
OPEN	( )	( )	( )	( )	( )	( )	( )	CLOSED
CARELESS	( )	( )	( )	( )	( )	( )	( )	CAREFUL
SAFE	( )	( )	( )	( )	( )	( )	( )	UNSAFE
SURE	( )	( )	( )	( )	( )	( )	( )	UNCERTAIN

MYSELF

STABLE	( )	( )	( )	( )	( )	( )	( )	CHANGEABLE
OLD	( )	( )	( )	( )	( )	( )	( )	YOUNG
SOFT	( )	( )	( )	( )	( )	( )	( )	HARD
PLEASANT	( )	( )	( )	( )	( )	( )	( )	UNPLEASANT
BAD	( )	( )	( )	( )	( )	( )	( )	GOOD
FAST	( )	( )	( )	( )	( )	( )	( )	SLOW
EXCITABLE	( )	( )	( )	( )	( )	( )	( )	CALM
THICK	( )	( )	( )	( )	( )	( )	( )	THIN
ALIVE	( )	( )	( )	( )	( )	( )	( )	DEAD
LARGE	( )	( )	( )	( )	( )	( )	( )	SMALL
FOOLISH	( )	( )	( )	( )	( )	( )	( )	WISE
LOW	( )	( )	( )	( )	( )	( )	( )	HIGH
OPEN	( )	( )	( )	( )	( )	( )	( )	CLOSED
CARELESS	( )	( )	( )	( )	( )	( )	( )	CAREFUL
SAFE	( )	( )	( )	( )	( )	( )	( )	UNSAFE
SURE	( )	( )	( )	( )	( )	( )	( )	UNCERTAIN

THE FUTURE

STABLE	( )	( )	( )	( )	( )	( )	( )	CHANGEABLE
OLD	( )	( )	( )	( )	( )	( )	( )	YOUNG
SOFT	( )	( )	( )	( )	( )	( )	( )	HARD
PLEASANT	( )	( )	( )	( )	( )	( )	( )	UNPLEASANT
BAD	( )	( )	( )	( )	( )	( )	( )	GOOD
FAST	( )	( )	( )	( )	( )	( )	( )	SLOW
EXCITABLE	( )	( )	( )	( )	( )	( )	( )	CALM
THICK	( )	( )	( )	( )	( )	( )	( )	THIN
ALIVE	( )	( )	( )	( )	( )	( )	( )	DEAD
LARGE	( )	( )	( )	( )	( )	( )	( )	SMALL
FOOLISH	( )	( )	( )	( )	( )	( )	( )	WISE
LOW	( )	( )	( )	( )	( )	( )	( )	HIGH
OPEN	( )	( )	( )	( )	( )	( )	( )	CLOSED
CARELESS	( )	( )	( )	( )	( )	( )	( )	CAREFUL
SAFE	( )	( )	( )	( )	( )	( )	( )	UNSAFE
SURE	( )	( )	( )	( )	( )	( )	( )	UNCERTAIN

APPENDIX B
Data Sheet on Driving

Sex: M F (please circle one) Age: _____ years _____ months

For how long have you been licensed to drive? _____ years _____ months

About how much time each day do you spend driving? _____ hours each day

At what time of the day or night do you do most of your driving?_____

_____

Where do you mainly drive to and from?_____

_____

Whom are you usually with (if anyone) when driving?_____

_____

Which of the following best describes how you rate yourself as a driver?
(Circle one)
a) Extremely Safe
b) Very Safe
c) Safe
d) Unsafe
e) Very Unsafe
f) Extremely Unsafe

Which of the following best describes your outlook about your future?
(Circle one)
a) Extremely Optimistic
b) Very Optimistic
c) Optimistic
d) Pessimistic
e) Very Pessimistic
f) Extremely Pessimistic

For the following items please place an "X" in the column that best describes you.

	Always	Daily or Almost Everyday	Weekly or Almost Every Week	Monthly or Almost Every Month	Rarely	Never
Take risks when driving	_____	_____	_____	_____	_____	_____
Race with other drivers	_____	_____	_____	_____	_____	_____
Wear my seat belt	_____	_____	_____	_____	_____	_____
Drive while intoxicated	_____	_____	_____	_____	_____	_____
Drive 10 miles over speed limit	_____	_____	_____	_____	_____	_____
Drive after drinking a couple of beers or other alcoholic drinks w/in an hour	_____	_____	_____	_____	_____	_____

APPENDIX C

FOCUS GROUP DISCUSSION GUIDE
(Questions are not necessarily asked in sequential order)

Warm-Up: How long have you been driving?

1. What did you think driving would be like when you were a kid?
   - 1.1 Is that how it is?
   - 1.2 What first made you want a driver's license?
   - 1.3 How do you feel when you get behind the wheel of a car?
2. What is it about being able to get around on your own that is important?
   - 2.1 How would your life change if you didn't have a driver's license?
3. What would be the ideal car? What would it say about you?
   - 3.1 What kind of car do you drive?
   - 3.2 What do you like about it?
   - 3.2 What do you dislike about it?
   - 3.3 If you were going to buy a car, what kind of things would be important to you?
   - 3.4 If you were a car designer, what features would you put in a car?
4. How did you learn to drive?
   - 4.1 Were you ever in a driver education course?
   - 4.2 Did the course have any influence on your driving?
   - 4.3 What was the nature of this influence?
   - 4.4 How could the course have been improved?

5. Are there any exciting but dangerous activities that you enjoy?

   5.1 What are these activities?

   5.2 What is it about these activities that you enjoy?

   5.3 Can you achieve this enjoyment driving or riding in a car?

   5.4 How?

   5.5 What can you tell me about the good feelings you get from driving?

   5.6 Anything else give you these feelings?

6. How do you feel as a driver? Are you always that way? When do you feel different?

   6.1 Do you ever feel uneasy or lack confidence when driving?

   6.2 Could you give examples of either or both?

   6.3 When are you at your worst?

7. Are there any negatives of owning and driving car?

   7.1 What are the things that come to mind?

   7.2 What are your greatest fears or concerns about driving?

   7.3 Are most people your age concerned about these things?

   7.4 What are the causes of these problems?

   7.5 How do you feel about driving on freeways?

   7.6 Do you worry about being in an accident?

   7.7 Do you worry about losing your driver's license?

8. Do these concerns cause you to do anything special?

   8.1 If so, what special things do you do?

   8.2 Why do you do these things?

   8.3 When did you first start doing these things?

   8.4 What made you want to do these things?

9. What is it about some drivers that makes you most comfortable as a passenger?

   9.1 What about most uncomfortable?

   9.2 What do you think really determines what makes someone a good driver?

10. What does partying mean to your life?

   10.1 What is your favorite way to party?

   10.2 How important is this to you?

   10.3 What is your idea of a good time on weekends?

   10.4 What do you do when you really want to relax?

11. How about drinking...What does it mean to you?

   11.1 How do you know when you've had too much?

   11.2 When do you usually drink?

   11.3 What do you usually drink?

   11.4 Whom do you usually drink with?

   11.5 Where do you usually drink?

12. How would you feel about driving a short distance after you had a little to drink, if you knew you were under the DWI limit and could not be arrested?

   12.1 If you drink, how do you determine when you've reached the legal DWI limit?

   12.2 Let's say you knew you were slightly over the DWI limit, how would you feel about driving?

   12.3 Suppose you were way over the limit?

   12.4 How do you think some people manage to drive home when they've had too much to drink?

12.5 How do you feel about the 21-year-old drinking age law?

12.6 Has this law changed your drinking in any way?

12.7 How do you feel about police roadblocks to check for people who are DWI?

12.8 Do you feel these roadblocks will be effective in discouraging DWI?

12.9 Ever been stopped? How did you feel?

13. What would be the best way to improve people's driving?

13.1 What are the chances this would work?

13.2 Why might it work?

13.3 Why might it fail?

ABOUT THE AUTHORS

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