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ROAD RAGE: WHERE IS IT COMING FROM?

A Project
Presented to the
Faculty of
California State University,
San Bernardino

In Partial Fulfillment
of the Requirements for the Degree
Master of Social Work

by
Steven Leigh Pennington

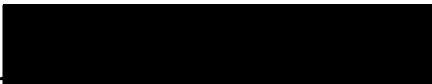
June 2002

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Approved by:


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ABSTRACT

Violence has long been an increasing problem in America. Recently there has been an increase of violence on our nation's roadways. This form of violence, termed road rage, is also occurring worldwide. Given that this social problem can turn deadly, study into the factors that can contribute to this behavior is warranted. This particular study examined factors which included the distance driven by the driver of 5 and 50 miles, the factors of perceived lack of time by the driver, the age of the driver, the gender of the driver, the length of time drivers had their licenses and risky driving, and the amount of miles driven per day and risky driving. Four 42-item surveys were used to assess the 88 participants' responses. The participants were all licensed drivers over the age of 18. Additionally, the respondents were attending two local area traffic schools. There were several significant findings. First, the younger the driver, the more likely the driver is to use risky driving behaviors. Secondly, drivers who have driven 5 miles are more likely to resort to road rage than drivers who have driven 50 miles. Also, the length of time a person has had a license, and the amount of miles driven per day was significantly correlated with risky driving.

ACKNOWLEDGMENTS

It is with great appreciation to the following individuals for making this study a reality: Michael Sayegh, Owner of All Seasons and All Star Driving School; Steve Hartranft, Owner of Upland Area Traffic School; Kathy Ryan Hartranft, Owner of Upland Area Traffic School; and especially Steve Nitch, Faculty Supervisor.

DEDICATION

This entire project is dedicated to my wife,
Cristina, who, without her immense support, I could not
have completed the social work program and this project.

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CHAPTER ONE

INTRODUCTION

Problem Statement

The worldwide epidemic of road rage is causing widespread destruction and death (James, 1997; Stevens, 1994). Road rage is commonly defined as a societal condition where motorists lose their temper in reaction to a traffic disturbance (Dickinson, 1997). In most cases, the traffic situations encountered are typical of today's normal driving conditions and higher traffic volumes (Dickinson, 1997). If this is true, and if road rage can be triggered by "normal" driving conditions, then one may ask, "What specific variables are at work?" This is a very good question and one worth studying further. This relatively new phenomenon is worthy of scientific study since it has become a major social problem (AAA Foundation for Traffic Safety, 1996). State legislatures need to be concerned as well as the general public. Since it is an increasing problem, much can be gained by studying the underlying causes of road rage behavior.

Some common road rage behaviors a motorist might display include running red lights and stop signs, using obscene gestures, throwing objects at others on the road

or speeding and weaving in and out of traffic. Other possibilities include cutting off other motorists, deliberately pulling in front of another vehicle and slowing down or even hitting the brakes. Additionally, road rage can be displayed by driving in the breakdown lanes, verbally yelling obscenities or other uncivilized words or phrases at others on the road. Also, closing ranks to deny someone entering their lane because they are frustrated or upset, tailgating, honking, chasing another vehicle in anger, and using a vehicle to retaliate by dangerous or threatening maneuvers have all been included as aggressive driving behaviors (James, 1997).

Problem Focus

With a more concrete understanding of what contributes to this negative behavior, more effective methods of controlling it can be developed in both micro and macro social work practice. Social workers can develop effective intervention treatments in their practice. In addition, social workers can be involved in introducing legislation to help control road rage behavior. In terms of money, such as insurance claims related to road rage and fines imposed on aggressive drivers, millions of dollars could be saved every year. Another link concerning

road rage is that of criminal behavior. Assault with a deadly weapon is a charge facing road ragers who use their vehicles in anger to assault others. Additionally, by implementing effective controls, many lives could be saved. Not only could lives be saved, but injuries related to road rage could be reduced as well.

An overview of some of the specific problems, needs, and issues that might be addressed in this study include developing effective interventions for individuals who are prone to road rage. This might include techniques for relieving stress, anger management, and other cognitive-behavior approaches on the micro level. Also, by identifying early signs of road rage, problems associated with road rage behavior could help to prevent it from escalating. On the macro level, mandating minimum requirements to address road rage in drivers' education classes and traffic schools should be implemented. An example of the minimum requirements would be to address more socially acceptable options to road rage behavior. Also, stress management could be included the classes since stress has been linked to aggressive driving. In the textbook used by hundreds of drivers' education schools, chapter three discusses how emotions affect one's ability to drive.

Stress has an effect on emotions, and thereby can affect a driver's ability to concentrate and process information (Kenel, 2000). There are currently no mandatory requirements in the State of California to address the problem of road rage in these classes. This is a valid reason for conducting this study at this point in time.

Therefore, my research question was, "Which factors contribute more to road rage behavior, time or distance traveled?" It was also possible that both are important and have an interactive effect. This study especially focused on those contributing independent variables.

CHAPTER TWO

LITERATURE REVIEW

Conflict Theory

In order to begin to understand some of the major components of road rage, it would be helpful to begin with the concept of conflict theory. Conflict theorists look at life as a struggle. To them, each person, group, and nation strive for what they can get. In the end we all struggle to gain control over scarce resources. To the conflict theorists, competition underlies all of social life. Four general, yet basic points of conflict theory will be highlighted, then some specific aspects of this theory, as seen by some conflict theorists, will be discussed. Number one, each social resource produces a potential conflict, between those who have it and those who do not (Collins, 1993). There are various resources and potentials for social conflicts. These resources can be categorized as: a) economic or material conditions, b) power resources, such as positions within control networks, and c) status or cultural resources, which Collins defines as, "control over social rituals producing group solidarity and group symbolism" (Collins, 1993,

p. 289). All of these resources can lead to conflict between the "haves" and the "have-nots".

In addition to social resources, another major point of conflict theory deals with how potential conflicting interests can become intense, to the extent that they are mobilized, and relative to the mobilization of opposing interests (Collins, 1993). According to Collins, several things can mobilize interests. He grouped them into two areas. One area includes emotional and moral interests. People have the potential for conflict based on their emotions at any given time. Also, they may choose to act or not to act on their emotions based on their moral standards. These moral standards could include how they choose to act based on what they think is morally the right way to behave. The second ingredient that can mobilize interests involves material resources for organizing. These resources enable a group or individual to carry on their fight for their interests. Collins believes that these resources include resources for communication, transportation, and money. Additionally, the number of persons who are mobilized, and in some cases, their physical strength, need to be considered as well (Collins, 1993).

Mobilization can lead to other conflicts too; therefore, conflict engenders subsequent conflict. A process occurs in which the mobilization of interests on one side of a conflict tends to lead to countermobilization of the opposing side. In his article, Collins (1993) mentions that the linking of mobilization and countermobilization is an emotional process.

They emphasize how arousals of shame and rage recycle through opposing loops and produce "interminable conflicts" (Collins, 1993). It can be understood that conflict increases the prevalence of a common emotional mood (in this case, fear or anger), which in turn enhances the focus of attention upon a single subject, the enemy (Collins, 1993). When this happens, people lose the capacity to see the larger context. Perceptions become increasingly selective. Each side sees mainly the worst of its perceived enemies. Highly mobilized conflicts tend to turn into an exchange of atrocities (Collins, 1993). That type of exchange can be related to the eye-for-an-eye, or tit-for-tat form of retaliation. These conflicts can become violent. In recent years, these types of exchanges have been displayed on the roads by drivers. One example was of the 70-year-old senior citizen who became angered by another motorist, and began throwing his medicine

bottles at him. The senior citizen was displaying a form of road rage.

Violence in America is nothing new. In the history of this country, violence has had a significant role in shaping America's future. Today, however, violence has reached epidemic proportions and is the leading cause of death in the United States (Stevens, 1994). In fact, homicide and suicide account for more than one-third of the country's violent deaths, which include car crashes and other accidents (Stevens, 1994). Violence can and does occur nearly everywhere from an individual's home to the roadways of the world (James, 1997; Stevens, 1994). Because violence is considered aggressive behavior, it would be prudent to examine some of the motivations that contribute to this anti-social behavior. Stress may motivate violent behavior.

The Contributions of Stress

Stress can be either positive or negative. The negative stress, or distress, is normally what influences negative behavior. People cope with stress in many ways. Some of these coping strategies are effective for the individual and are accepted by society. Other coping mechanisms are not accepted by society, and can be

destructive to the individual who uses them as well as to others. Some accepted coping strategies include hobbies, exercising, and relaxing. Stress tends to build up in an individual if there are no ways to vent this build up. Sometimes people use anti-social behavior to try to cope with stress. These non-acceptable types of mechanisms include things like revenge, rape, murder, and assault. It is possible to view these as a form of coping. However they are not sociably acceptable. A person could possibly resort to these coping strategies due to an extreme lack of acceptable coping skills. One study explored some of the connections between stress, offending against traffic laws, and accident rates. The study found that stress, both on and off the road, was positively associated with offending among both males and females (Simon & Corbett, 1996). Simon and Corbett used a postal questionnaire completed by 422 drivers: 54% were males, 47% under age 25 years old. Although females overall offended less than males, they had more stress than males regardless of their level of offending (Simon & Corbett, 1996). Some people seem to cope with stress very well, while others do not.

To shed some light on why some people cope better than others do, a study examined temporal aspects of stress, and attempted to answer the question, "which

stress matters" (Bar-Tal, Cohen-Mansfield, & Golander, 1998)? In their study, there were 38 males and 41 females. The participants completed a short demographic questionnaire, a stress questionnaire as pertaining to the past (defined as the previous year), present, and future, and a psychological distress questionnaire. This study suggests that past stressors affect the appraisal, or perception, of present stressors only indirectly, through its effect on the appraisal of future stressors. To put it another way, what a person has experienced in the past can affect what they expect to experience in the future. An example might be if a person experiences intense stress from taking written tests, that same person would expect to feel extreme stress when taking a written drivers examination. More importantly, the researchers discovered that the appraisal of present stressors affects psychological distress directly (Bar-Tal et al., 1998).

It must be understood that stress affects people depending upon their perception of the stress. In other words, if a person really does not care about a situation, they will not feel stressed out about it. On the other hand, people who perceive a situation as important to them will more likely feel stressed about it and take some action to relieve the stress. Relating the study by

Bar-Tal et al. (1998), if people see a situation as stressful, they might see it affecting their future, no matter how short term, in a negative way. The more intensely the individual perceives the stress, the more intense their response will be in most cases. So it can be deduced that present stressors can potentially influence or motivate intense, even violent or aggressive behavior. The intense behavior can then be directed in an anti-social way. Since aggressive behavior has been mentioned, clarification concerning what the word aggressive means is warranted.

Webster's dictionary defines the word aggressive as pushing, obtrusively energetic, especially in pursuing particular goals. Being aggressive implies a disposition to dominate often in disregard of others' rights. This definition makes it clear that anti-social behavior would be one of the ways that aggressiveness could manifest itself.

The Components of Aggressive Behavior

Aggressiveness is a displayed behavior that stems from feelings. The role of affect has been the subject of many scientific studies, including the predicting of social behaviors (Lawton, Parker, Manstead,

& Stradling, 1997). An important set of questions was included in their questionnaire. The questions included a 13-point measure of inward irritability, outward irritability, and anxiety. That study, concerning affect and road traffic violations, revealed a key point: that deliberate violations of the Highway Code occurred partially because of the feelings of the drivers at the time of the violations. In addition, another factor they studied consisted of violations of generally accepted driving norms, and all of those involved some form of aggression. This aggression was broken down into three items making up the factor. The items were angry-give chase, unofficial racing, and aversion to another road user, indicating hostility (Lawton, Parker, Stradling, & Manstead, 1997). The factor indicated that the violations of driving norms were influenced by aggressive feelings. Each one of these questions was followed by four possible responses. It follows that since some form of aggression, and indeed, hostility towards other road users, is a real choice used by aggressive drivers on the road, that their feelings, or affect, are actively influencing their behavior.

Social Deviance and Aggressiveness in Driving

Another interesting study by the same group of researchers concerning driving violations examined the link between social deviance and driving violations (Lawton, Parker, Stradling, & Manstead, 1997). That study analyzed 830 drivers. Here, two types of social deviance were studied, mild and extreme. The study involved self-reported measures of mild social deviance, aberrant road behavior (violations and errors), and accident involvement. The information was obtained through in-home interviews carried out by trained market researchers, with approximately equal numbers of men and women. Among the questions the researchers asked were a 10-item social motivation questionnaire. That questionnaire was included as the measure of mild social deviance. It was in the form of a 3-point Likert scale with responses ranging from not at all likely to very likely. A high score from the Likert scale indicated extreme deviance. It was found that a relationship between mild social deviance and accident involvement was partly mediated by propensity to commit driving violations, one of the hypotheses in this particular study. Since social deviance is a violation of society's norms, a certain amount of feelings are

influencing the drivers' behaviors when it comes to driving violations (Lawton, Parker, Stradling & Manstead, 1997). Based on the findings of both of these studies, it can be concluded that feelings of hostility can influence social deviance and contribute to aggressive behavior.

Perception is a Key Towards Aggressive Behavior

Although feelings of hostility can influence aggressive behavior, individuals' perceptions of a situation are a contributing factor in determining which behavior they will use. A study examining students' subjective appraisals of driving behavior suggests that undesirable actions would be especially probable when the verifiability of the action was low (Taris, 1998). In other words, if people do not think they will get caught, they will more likely use undesirable actions. Some drivers may be more willing to take this chance if a perceived lack of time is present. In the Taris study, the participants were 48 Dutch university students. They completed a questionnaire in which desirability, controllability, and verifiability of particular actions were systematically manipulated. The participants rated the likelihood of a particular action both for themselves and the average Dutch driver (Taris, 1998). The results

indicate that at times, undesirable actions could include aggressive behavior while driving.

An additional study, which gives further support to the idea that perception influences behavior, looked at social status and aggression (Diekmann, JungBauer-Gans, Krassnig, & Lorenz, 1996). This study used a field experiment to examine the effect of the social status of a frustrated driver on the tendency to react in an aggressive manner. It is common knowledge in sociology that most people identify themselves as middle class. Because this is true, many people will at times erroneously place themselves in a higher socio-economic status. This is especially the case if it enhances self-image. Once an individual can "look down" at other people, it then becomes easier to use aggressive behavior in order to dominate others (Taris, 1998). Using the findings of Diekmann, et al. it appears that the higher the social status of drivers are, the greater the tendencies they have towards responding, out of frustration, in an aggressive manner. Since aggressive behavior can be displayed virtually anytime or anywhere, a relatively new outlet has become the roadway.

Building on what can be considered road rage behavior, a couple of studies focus on decision making and

motivations by drivers on the road. The first study examined factors that drivers use when determining autoroutes to take for their destinations (Pedersen, 1998). The Pedersen study analyzed four factors contributing to route selection. They were safety, interest, purpose, and hindrances. The most interesting findings of this study were that the purpose of the travel and the perceived route hindrances were more important to the respondents than interest or even safety. So they are willing to forgo safety if it will get them there on time. Remembering the importance of a person's perception of a situation and its influence on their behavior (Bar-Tal et al., 1998), recall that if a person perceives a situation as important to them, they will tend to respond with more intense or aggressive behavior in order to relieve the stressful situation. The Pedersen study reinforces this fact.

The Pedersen (1998) study also analyzed the factor of perceived route hindrances. The specific route hindrances used in the study were traffic density and traffic lights. Thus, the perceived ease of traffic flow was important to drivers. This study conducted a factor analysis of ratings by 239 men and women on a route selection rating scale. Each item was rated on a 5-point scale. The ratings ranged

from extremely low importance to extremely high importance. Through many psychological studies, it has become an accepted fact that if the goals of individuals are blocked, their behavior will intensify in attempts to achieve their goals. This is known as the frustration-aggression hypothesis. Route hindrances can be roadblocks towards motorists' destinations as their goal. For example, if a motorist gets behind a slower driver on the road, the motorist could perceive the situation as a hindrance, the slower driver as a block to a goal, and resort to intensive behavior. This idea also relates to the Bar-Tal study findings that present stressors can influence a driver's perception of the future as being stressful. In the example used, the slower driver in the present, affects how the motorist, who is in a hurry to get to a destination, perceives the future. In this case the slower driver would make the motorist late (Bar-Tal et al., 1998). The Bar-Tal and Pedersen studies tend to support each other in this respect (Bar-Tal et al., 1998; Pedersen, 1998).

Another factor studied in the Pedersen study was the purpose of a trip. This factor rated very high on importance in making a route selection. Importance indicates that motorists will make their decisions on the

road with a more intense response to situations. An example of this could be if the purpose of the trip is for important business. And the more important the trip, the more time is of the essence to the driver.

Two of the factors studied, purpose, and hindrances, influence the drivers' perception of their situation. Interest was also a contributing factor to route selection, indicating the relative importance of the situation to the drivers. The more important a situation is perceived to be, the more intense the response. This idea of perceived importance has also been studied further,

Perceived importance contributes to territorial defense (Ruback & Juieng, 1997). In examining territorial behavior, it is important to understand what is meant by this term:

Territorial behavior involves marking, occupying, or defending a location in order to indicate presumed rights to the particular place. The value of a territory usually stems from the fact that it contains desirable resources. Most often, territorial responses are based on a cost-benefit analysis: If the perceived cost of resisting an intruder outweighs the benefit of that territory, flight is likely, but if the benefit outweighs the cost, defense is more probable. (Ruback & Juieng, 1997, p. 821)

The findings of the Ruback and Juieng study indicate that greater levels of intrusion lead to greater territoriality. This particular study drew from other previous studies on levels of intrusion and territoriality, but went even further and studied this phenomenon in parking lots. The Ruback researchers completed three types of studies. In their first study they observed 200 departing cars from parking spaces. In their second study, they used an experiment involving 240 drivers where the level of intrusion and status of intruder were manipulated. In study three, individuals who had parked at a mall were asked about how they thought they might react to intruders. The intruders were other drivers waiting to enter a parking space that was about to be vacated by another motorist. One of their findings was that people sometimes display territorial behavior merely to keep others from possessing the space even when it no longer has any value to them. Additionally, drivers who were leaving parking spaces took longer to leave when someone else wanted the space than when no one else wanted the space.

Additionally, the territoriality in parking lot studies found that the level of intrusion, as perceived by the vacating motorist, contributed to them taking longer

to leave a space. They found that if a driver who was waiting to enter a vacating parking space honked their horn, or flashed their lights to try to get the vacating motorist to hurry up, the vacating motorist would take even longer to leave. This "slower to leave behavior" can be interpreted as a mild form of retaliation or revenge. Also, the level of intensity of the intruding (waiting) motorist increased this slower behavior. Since it has already been established that revenge can be considered anti-social behavior, people defending their perceived territory can resort to aggressiveness ranging from mild to extreme. In this case the behavior was very mild. At this point it is relatively easy to understand the concept of territorial defense, in light of the study just discussed, as it relates to conflict theory. Conflict over territory can be applied to the roadway.

Life on the road is competition for increasingly scarce resources on today's crowded roads. To get ahead competitively can be the goal of the road rager. When this attitude turns into behavior on the road that violates the social values and norms of conforming drivers, conflict is inevitable; it is the conflict between the defensive driver and the road rager. The person with road rage is an aggressive driver. Since aggressive drivers are a real

danger to others as well as themselves, further studies would help to understand better why certain drivers use aggressive driving and engage in road rage behaviors.

One such study researched the causes and manifestations of aggression in car driving (Lowenstein, 1997). That study used a review of research from 1973 to 1994. The study discovered several distinctive characteristics associated with aggressive driving. The following are six of the main ones:

1. Type "A" personality.
2. Life stress at home or work.
3. Quick irritation with other drivers.
4. A tendency to dehumanize other drivers.
5. A feeling of safety within the car environment to express anger and aggression.
6. A tendency toward outward rather than inward expressions of anger.

Lowenstein further recommended possible therapeutic techniques to aid in rehabilitating road ragers. One point to highlight is characteristic number four. The tendency to dehumanize other drivers can be related back to the earlier examination of socio-economic status. Recalling that sometimes people put themselves into a higher socio-economic status in order to "look down" at others,

Lowenstein's study reconfirms this phenomenon by finding the tendency to dehumanize other drivers. Once dehumanized, aggressive behavior-road rage will more likely occur by the rager. These behaviors on the road can be initiated by several situations.

According to Nerenberg, a recognized expert on road rage behavior, and a clinical psychologist who treats people with road rage problems, there are at least five major traffic situations that can spark road rage reactions. They are:

1. Someone endangering us such as cutting in front without signaling.
2. Frustration related to feeling other drivers are slowing us down.
3. Other people breaking the rules.
4. The rage of other drivers directed at us for what they perceive to be our driving errors.
5. Someone taking our parking spaces. (1996, p. 1)

Therefore, the situation at the time can spark a driver to engage in road rage behavior. This conclusion was further strengthened by a study on road rage (Harding, Morgan, Indermaur, Ferrante, & Blagg, 1998). Their conclusion included the distinctive element attributable to the driving experience itself, in other words, the situation as perceived by drivers, influences their behavior.

In conclusion, there have been some gaps in the literature so far. Road rage is a relatively new problem, and has not had much scientific study completed to date. More research into the underlying causes and potential interventions is most appropriate at this time. This study specifically focused on time (the perceived lack of time) and distance traveled, and how these independent variables contribute to road rage. These two factors can be connected to road rage in that the perceived lack of time by the driver could be a type of block to an important goal, arriving on time. Also, the distance traveled could also be a type of hindrance or block in that the further a driver has traveled, the more prone they could be to emotional influences on their driving. And as mentioned, emotions can influence aggressiveness on the road. In this case, these particular variables have not been studied to date; therefore, this study differed from any previous studies so far.

The application of conflict theory guided this study as far as understanding some of the contributing factors to road rage behaviors. Furthermore, functionalism is applicable for the interventions on both micro and macro levels. This was the best theoretical perspective to use for interventions since interventions are good for the

whole of society if they are appropriate and effective. Since road rage is an increasing social problem, this study is contributing to society as a whole with a better understanding of road rage. And with a better understanding of what contributes to road rage behavior, better forms of controls and interventions could be developed.

CHAPTER THREE

METHODS

Study Design

The overall purpose of this study was to explore factors that might contribute to road rage behavior. Specifically, the perceived lack of time and the distance traveled by a driver were the main two independent variables studied. These two variables were manipulated through four specific scenarios, mandating the use of a total of four questionnaires (Appendix A). In addition, certain demographics were also examined such as the age and gender of the driver.

The research method used the four different questionnaires that had some fill-in-the-blank questions, such as, "What is your age?" and "How many miles do you drive on average to work or school each day round trip?" These questions were more quantitative than qualitative. An example of a qualitative-type of fill-in question was, "What is the make and model of the vehicle you normally drive?"

The rationale for choosing the questionnaire included safety for both the respondents and the researcher. Alternative approaches would have jeopardized the safety

of the participants. For instance, active observation of a deliberate provoking situation, such as cutting off a motorist, would have revealed driver reactions to provocation. Also, with the population of drivers that were surveyed, the questionnaire was the most efficient method since it did not take more than 15 to 20 minutes to complete.

The survey also incorporated a five-point Likert-type scale, (see Appendix A) that measured behavior indicative of road rage and dangerous driving. This enabled analysis to determine strong correlations, and weak ones, relating to the variables.

The limitations of this study included the geographical area selected for the participants to be surveyed. Instead of using a large geographical area to survey respondents, the area used was roughly a 25-mile radius from Upland, CA. This is because the researcher and data collectors live within this local area, so access to these resources was relatively easy. However, this could potentially limit the study from accurately generalizing the results to the general population. Because of limitations related to practicality, a larger study was not conducted at this time. Also, people living in congested traffic areas, like greater Los Angeles, might

respond to the questionnaires differently than people living in more rural areas.

Sampling

A convenience sample was used to gather the data. The surveys were distributed in several different classes of adult traffic school students. These classes included two different traffic schools. The reasoning behind using this sample was that those students had already committed some sort of traffic violation; therefore they might be able to relate to road rage behavior more than the average motorist. In addition, the participants were given the same random chance of receiving one of the four questionnaires.

The sampling process was conducted during the winter quarter of 2001. This sample included a total of 88 respondents. The selection criterion was based on the availability of students when the questionnaires were distributed, so the sample was a convenience one.

Data Collection and Instruments

The surveys, (see appendix A), were derived from two previously used surveys. The first survey was the Gage Your Rage Quiz developed for the Nissan Corporation by Diffenbacher at Colorado State University in 1998. The

second survey was from a study by Lawton, Parker, Manstead, and Stradling, (1997) on "The Role of Affect in Predicting Social Behaviors: The Case of Road Traffic Violations."

The survey questions, drawn from previous research, comprised 34 questions used to gauge the tendency toward road rage. Components such as anger, likelihood of being provoked and actual probability of displaying road rage behavior were included in the 34 questions. Additionally, there were 13 demographic questions that asked questions concerning things such as age and gender (See Appendix A).

It was necessary to modify the surveys to adequately test the variables related to the current study. The modifications were relatively minor ones. There were four scenarios added to the questionnaires. These four scenarios were all read by the participants prior to answering the questions. These scenarios differentiated one questionnaire from the other. The scenarios were added in order to test the independent variable of time (perceived lack of time). Also, the scenarios were added to test the other independent variable, distance traveled. The respondents were then asked to rate the degree to which the situations might anger or provoke them.

Procedure

The data was gathered from the questionnaires that were distributed by the researcher. These questionnaires were distributed and collected from two local traffic schools in roughly a 25-mile radius from Upland, CA. In addition, the timetable was the winter quarter of 2001. The specific dates and times of the data collection were based on the availability of the local traffic schools' class dates. Written approval was received from the two local traffic schools.

Protection of Human Subjects

Confidentiality and anonymity of the participants was enforced. Confidentiality was ensured through the use of numbers on the front page of the questionnaires. This provided a means to tie specific responses of individuals to particular sample sources later during the data analysis process. However, no names were ever recorded. Additionally, the informed consent and debriefing statements did not require a signature; rather a mark, such as a check mark and a date were used.

The data was secured by the researcher, and kept in a locked briefcase under control of the researcher. Additionally, it was properly stored in a secured, locked,

room when the researcher was not actively using the data. The only other persons that had access to the data were the supervisor for the project and consultants in the computer lab that assisted with the data analysis.

Operational Definitions, Concepts, and Constructs

For the purposes of this study, road rage was defined as a societal condition where motorists lose their temper in reaction to a traffic disturbance. Questions in the form of Likert-type scales were used to measure anger while driving. Driving behavior was defined as the actions taken by the driver most of the time in given situations. Those behaviors ranged from least risky to very risky. In addition, the factor of age was measured chronologically in years. And, the factors of perceived lack of time and distance traveled were manipulated through the vignettes that participants read prior to answering questions (See Appendix A for the instrument).

The amount of measured road rage was the dependent variable. The construct, or main focus of this study, was the perceived lack of time by a driver, and the distance traveled as stated in specific scenarios given to the participants. The independent variables were operationally

defined. These two constructs were analyzed when the data was collected.

Data Analysis

A relationship between age and gender was analyzed. This form of univariate analysis provided some insight into the demographics that correlated with road rage behavior. In addition, a correlation was conducted between whether the driver had minor children or not, and road rage behavior.

Some levels of measurement were nominal, such as gender. Other measures were ordinal, such as questions dealing with the Likert-type scale.

CHAPTER FOUR

RESULTS

Introduction

There were a total of 88 surveys completed, (N = 88). Of those 88 participants, there were 50 males, equaling 56.8 percent. There were 38 females, equating to 43.2 percent. The age range was from 18 to 81 years old, with a mean of 36.16 years. The median age was 34.50 years. All of the participants were licensed drivers. One respondent did not complete an entire page of the survey, so the data for those questions were not included in the final analysis.

Presentation of the Findings

All of the data were screened for skewness and kurtosis and found to be acceptable.

The choices for the types of roads most often driven included freeways, surface streets, and both equally. Twenty-six respondents reportedly took freeways (26.8 percent) fourteen respondents took surface streets (14.4 percent) and forty eight reportedly took both equally (49.5 percent).

A univariate analysis of variance (ANOVA) was conducted between the four groups of survey respondents to

determine if there were significant main effects for perceived lack of time and distance traveled, and an interaction effect of both perceived lack of time and distance traveled.

The data indicated that there was no significant main effect for perceived lack of time, $F(1,83) = .006$, $p = .94$, partial $\eta^2 = 0$.

There was, however, a significant main effect for distance traveled, $F(1,83) = 8.56$, $p < .05$, partial $\eta^2 = .093$. Participants in the 5-mile condition reported significantly more road rage than those in the 50-mile condition (see Figure 1). Finally, this data indicated

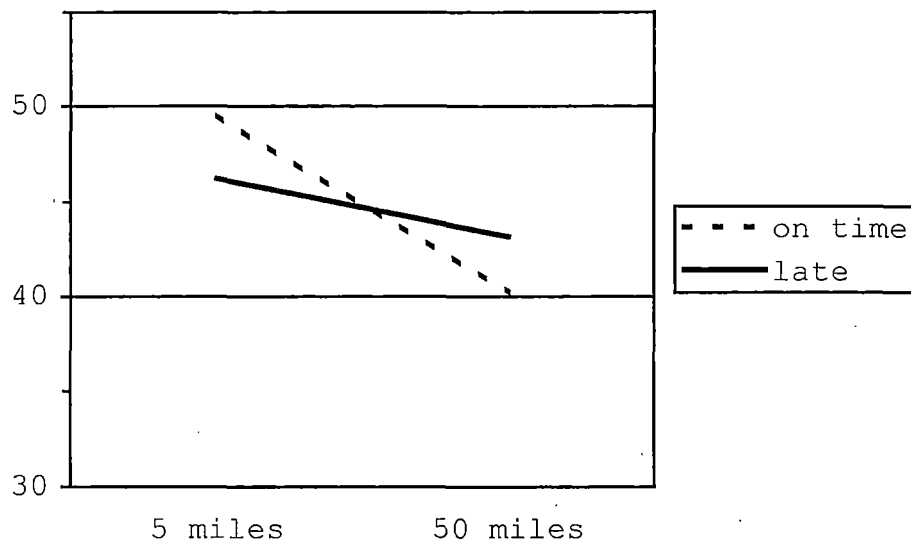


Figure 1. Road Rage

that the interaction effect between perceived lack of time and distance traveled was not significant, $F(1,83) = 2.22$, $p = .14$, partial $\eta^2 = .026$. The mean road rage score for 5 miles was 47.886, and the mean for 50 miles was 41.709.

In the second ANOVA, participant responses to the reckless driving portion of the questionnaire were analyzed. The results revealed no significant main effect for perceived lack of time, $F(1,83) = 1.84$, $p = .179$, partial $\eta^2 = .022$. There also was no main effect for distance traveled, $F(1,83) = 1.10$, $p = .30$, partial $\eta^2 = .013$. And, there was no interaction effect between perceived lack of time and distance traveled on responses to the reckless driving questions, $F(1,83) = .97$, $p = .32$, partial $\eta^2 = .012$ (see Figure 2).

Additionally, there was no significant interaction with perceived lack of time and being late.

A Pearson correlation was conducted between the age of the driver and driving behavior. This finding was significant at the .01 level $r(87) = -.428$, $p < .01$. Therefore, the younger the age of the driver, the higher the scores were on risky driving behavior.

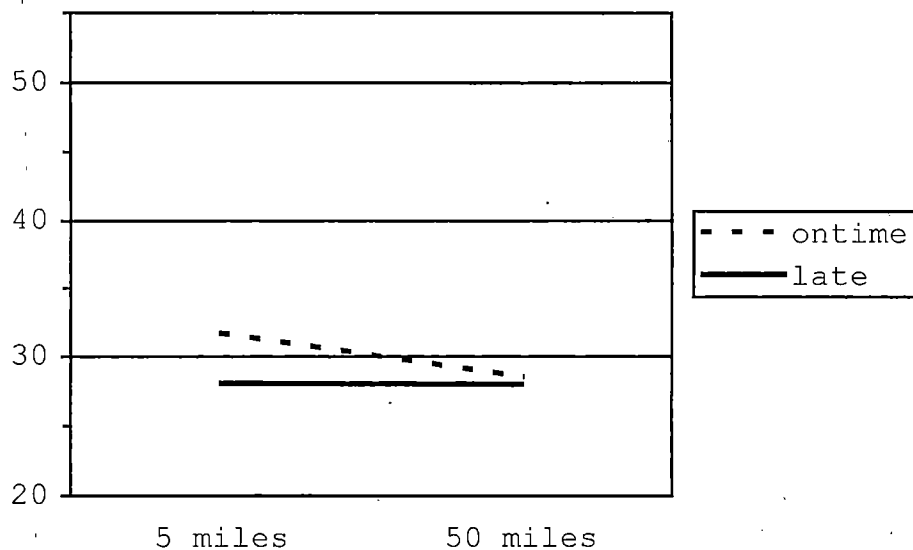


Figure 2. Risky Driving Behavior

A significant negative correlation was revealed between how long drivers have had their license and their responses to the reckless driving questions, $r(84) = -.437$, $p < .05$. this indicates that drivers who have their licenses longer scored lower on the reckless driving portion.

Another significant correlation was found between miles driven per day and responses to the reckless driving questions, $r(84) = .245$, $p < .05$. this indicates that the people who drive more miles per day scored higher on the reckless driving portion of the questionnaire.

Pearson correlations were also conducted between gender and both risky driving behavior and road rage with no significant findings.

Additionally, Pearson correlations were conducted between whether or not the driver had minor children and both risky driving behavior and road rage. Again, no significant findings were discovered.

Summary

The data indicates that the independent variable of perceived lack of time had no effect on the dependent variable of road rage. Conversely, the distance traveled did have a significant difference, as scores were higher when the distance was only 5 miles driven. There was a strong correlation between the age of the driver and risky driving behavior, the longer a driver has had a license and risky driving behavior, and the number of miles driven per day and risky driving behavior. However, there were no significant findings between the driver having minor children and road rage behavior. And, there was no significant difference between the gender of the driver and road rage.

CHAPTER FIVE

DISCUSSION

Introduction

The results of this study supported one hypothesis. That is, that the distance traveled had an effect on road rage behavior. However, the effect was the opposite of what was expected. In another analysis, which looked at the association between the age of the driver and risky driving behavior, the findings indicated a strong correlation.

None of the other analyses revealed any significant findings. However, it is interesting to note that there was no significant correlation between drivers having minor children and those who do not, and their propensity to resort to road rage behavior.

Discussion

One would tend to expect that the longer the distance a driver has traveled, the more they would tend to resort to road rage. This study indicated that if a driver has driven only five miles, they are more apt to resort to road rage as compared to those who had driven a longer distance of 50 miles. One could speculate that it could possibly be that drivers who know they are going to drive

a longer distance are better mentally prepared for a longer trip and various barriers to their goal destination. It could follow that those drivers who are only going relatively short distances are less tolerant of road barriers and expect to arrive at their destination much sooner. In other words, the short distance drivers have less patience, are more prone to anger, and could be in more of a hurry to get to their destination.

The analysis between the amount of time a drivers have had their licenses and risky driving behavior indicates that people who have had their licenses for a longer time report that they are significantly less likely to engage in reckless driving.

Also, the responses to the reckless driving questions and the amount of reported miles driven per day indicate that the greater number of miles driven per day, the more likely the person is to engage in reckless driving behaviors.

In another analysis, looking at the association between the age of the driver and risky driving behavior, the findings had a strong correlation. Therefore, the younger the age of the driver, the more likely they are to display risky driving behaviors. It has been shown, in many previous studies, that younger people are more prone

to risky behavior. Crime statistics have repeatedly indicated that younger people commit the most offenses, and this study's findings further validate these statistics.

Another surprise from this study was that there was no significance between men or women drivers and road rage behavior. The findings of this study contradicts that of previous studies that found that, indeed, men and women do differ significantly in their potential to display road rage behavior. Previous studies indicated that men are more likely to engage in this type of behavior than women. One possible explanation for this study's finding could be that younger men and women are now socialized to be more alike than their traditional roles in the past.

Limitations

The following limitations apply to the project:

1. The demographics of the participants.

Participants of two separate local traffic schools were surveyed. The findings might not be adequate to generalize out to the larger population. Additionally, drivers in southern California may have unique driving behaviors and

may answer the surveys differently than drivers in other parts of the country.

2. There were more men than women surveyed 50 males, and 38 females. Therefore, there the results could be affected when trying to compare these two groups.
3. The instrument itself could have been a limiting factor. The difference between the four instruments was in the scenarios that the respondents had to read and take into consideration as they answered the rest of the questionnaire. It is not clear weather the participants read and applied the scenarios to the questions that followed. There should have been some form of checks and balances incorporated into the survey to indicate that the participants had read and were aware of the scenarios. An example could be, "How late are you on this trip?" or, "How many miles have you driven so far?" This would have helped to ensure that the respondents were actually applying the scenarios to their answers, especially since the scenarios were the only difference between the four questionnaires. It can be speculated that

sometimes people just look at the questionnaires and immediately begin answering the questions. And sometimes respondents may have forgotten that the scenario was very specific, and could have answered the questions based on their overall general behavior and not according to the scenario given.

Recommendations for Social Work Practice, Policy and Research

One possible application for social work on the micro level of interventions could be with local drivers who have road rage. In assessing potential clients, the assessment could include the distance normally traveled on a day-to-day basis.

One application to macro social work could be to introduce legislation to make teaching alternatives to road rage behavior a mandatory part of drivers' training classroom curriculum. By introducing options to road rage early to a new driver, it could prevent a negative pattern of behavior from developing.

Further study could be warranted assessing the factors of the condition of the vehicle driven, as well as incorporating a better questionnaire with checks and

balances to ensure that respondents apply the key scenarios to their answers.

Conclusions

The conclusions extracted from the project follows.

The results of this study supported one hypothesis. That is, that the distance traveled had an effect on road rage behavior. However, the effect was the opposite of what was expected. So, drivers who travel five miles are more likely to resort to road rage than drivers who have driven fifty miles. There was a strong correlation between the age of the driver and driving behavior. Therefore, the data indicates that the younger the driver, the more likely they are to display risky driving behavior.

Additionally, there were significant correlations between the length of time that drivers had their license and reckless driving, and between the amount of miles driven per day and reckless driving. These correlations suggest that drivers with more experience, who limit their daily driving to a reasonable amount of miles, tend to be associated with safer driving.

APPENDIX A
QUESTIONNAIRE

ROAD RAGE SURVEY

Demographics

Please answer the following questions.

1. What is your gender? (Circle one)
1. Male 2. Female
2. What is your age? _____
3. Are you a licensed driver? (Circle one)
1. Yes 2. No
4. How long have you had your drivers license in years? _____ years.
5. What is the year of the vehicle you usually drive? _____
6. What is the make and model (e.g. Ford Explorer, Honda Civic, Dodge Ram, etc.) of the vehicle you normally drive? _____
7. What is the color of the vehicle you normally drive? _____
8. How many miles do you drive on average to work/school each day round trip? _____ miles.
9. How many miles per year do you drive? _____ total miles per year.
10. When you drive, do you generally take: (circle one)
1. Freeways 2. Surface streets 3. Both equally
11. Do you have minor children? (Circle one) Yes No
1. Yes 2. No

Questionnaire #1

Try to imagine yourself in the following situation: You are driving in your car and glance at your watch and see that you are on time for your destination and have already driven 5 miles in heavy traffic. For each of the following questions, try to respond as if the incident described is actually happening to you. Then, by circling a number to the right, indicate the extent to which the incident would anger or provoke you.

Questionnaire #2

Try to imagine yourself in the following situation: You are driving in your car and glance at your watch and see that you are on time for your destination and have already driven 50 miles in heavy traffic. For each of the following questions, try to respond as if the incident described is actually happening to you. Then, by circling a number to the right, indicate the extent to which the incident would anger or provoke you.

Questionnaire #3

Try to imagine yourself in the following situation: You are driving in your car, glance at your watch, and see that you are 20 minutes late to your destination and have already driven 5 miles in heavy traffic. For each of the following questions, try to respond as if the incident described is actually happening to you. Then, by circling a number to the right, indicate the extent to which the incident would anger or provoke you.

Questionnaire #4

Try to imagine yourself in the following situation: You are driving in your car, glance at your watch, and see that you are 20 minutes late for your destination and have already driven 50 miles in heavy traffic. For each of the following questions, try to respond as if the incident described is actually happening to you. Then, by circling a number to the right, indicate the extent to which the incident would anger or provoke you.

		Not at all	A little	Some	Much	Very much
12.	Someone is weaving in and out of traffic.	1	2	3	4	5
13.	A slow vehicle on a mountain road will not pull over and let people by.	1	2	3	4	5
14.	Someone backs right out in front of you without looking.	1	2	3	4	5
15.	You pass a radar speed trap.	1	2	3	4	5
16.	Someone makes an obscene gesture toward you about your driving.	1	2	3	4	5
17.	A police officer pulls you over.	1	2	3	4	5
18.	A truck kicks up sand or gravel on the car you are driving.	1	2	3	4	5
19.	Someone runs a red light or stop sign.	1	2	3	4	5
20.	Someone honks at you about your driving.	1	2	3	4	5
21.	You are driving behind a large truck and cannot see around it.	1	2	3	4	5
22.	A bicyclist is riding in the middle of the lane and slowing traffic.	1	2	3	4	5
23.	You are stuck in a traffic jam.	1	2	3	4	5
24.	Someone speeds up when you try to pass them.	1	2	3	4	5
25.	Someone is slow in parking and holding up traffic.	1	2	3	4	5
26.	Do you enjoy driving?	1	2	3	4	5
27.	How often do you become angered by another driver and give chase with the intention of giving him/her a piece of your mind?	1	2	3	4	5

		Not at all	A little	Some	Much	Very much
28.	How often do you stay in a lane that you know will be closed ahead until the last minute before forcing your way into the other lane?	1	2	3	4	5
29.	How often do you pull out of an intersection or junction so far that the driver with the right of way has to stop and let you out?	1	2	3	4	5
30.	How often do you intentionally run a red light?	1	2	3	4	5
31.	How often do you drive so close to the car in front that it would be difficult to stop in an emergency?	1	2	3	4	5
32.	How often do you sound your horn to indicate your annoyance to another driver?	1	2	3	4	5
33.	How often do you race away from traffic lights with the intention of beating the driver next to you?	1	2	3	4	5
34.	How often do you become angered by a certain type of driver and indicate your hostility by whatever means you can?	1	2	3	4	5
35.	How often do you disregard the speed limit on a residential road?	1	2	3	4	5
36.	How often do you disregard the speed limit on a freeway?	1	2	3	4	5
37.	How likely are you to act aggressively on your frustrations while driving if there are no other passengers in your vehicle?	1	2	3	4	5
38.	How likely are you to act aggressively on your frustrations while driving if there is more than one passenger in your vehicle?	1	2	3	4	5

- | | | Not
at
all | A
little | Some | Much | Very
much |
|-----|--|----------------------|-------------|------------------|--------------|--------------|
| 39. | How likely are you to act aggressively on your frustrations while driving if there are more than two passengers in your vehicle? | 1 | 2 | 3 | 4 | 5 |
| 40. | How likely are you to act aggressively on your frustrations while driving if there are minor children in your vehicle? | 1 | 2 | 3 | 4 | 5 |
| 41. | Do you think you would be less likely to act aggressively on your frustrations while driving if there were minor children in your vehicle?
(Circle one) | | | | | |
| | 1. Yes 2. No 3. Don't know | | | | | |
| 42. | As a driver do you consider yourself: (Circle one) | | | | | |
| | Very
Reckless | Somewhat
reckless | Average | Somewhat
safe | Very
safe | |
| | 1 | 2 | 3 | 4 | 5 | |

Thank you for your time in answering this survey!

References

- Deffenbacher, J. (1998). The gauge your rage quiz. Developed for the Nissan Corporation through Colorado State University. 1-2.
- Lawton, R., Parker, D., Manstead, A., & Stradling, S. (1997). The role of affect in prediction social behaviors: The case of road traffic violations. Journal of Applied Social Psychology, 27(14), 1258-1276.

APPENDIX B
INFORMED CONSENT

INFORMED CONSENT

My name is Steve Pennington. I am currently a student attending California State University in San Bernardino. I am in the process of completing my research project. I will be receiving a Master's Degree in Social Work. This project is being supervised by Steve Nitch Loma Linda University doctoral student with guidance from Dr. Rosemary McCaslin professor of social work at Cal State San Bernardino. My study's focus is on driving behaviors. I would appreciate your response to the following survey. Your responses will contribute to a better understanding of driving behaviors. Although you may stop responding to the survey at any time, without penalty, your answers are needed to all questions in order for me to accurately analyze factors related to driving behaviors. You can be assured that your responses will remain confidential. In addition, you will remain anonymous. There will be some fill in questions and mostly scenarios with possible answers numbered from one to five. The survey should take about 15 minutes to complete. If you have any questions concerning your rights as a participant in this survey, you can contact Dr Rosemary McCaslin, PhD, at the Social Work Department at Cal-State San Bernardino at (909) 880-5501. This research study has been approved by the Department of Social Work Sub-Committee of the Institutional Review Board at California State University, San Bernardino. The results of this research can be obtained through the Pfau Library at Cal State San Bernardino in the summer of 2002. Thank you. Sincerely,
Steven L. Pennington

MSW student, California State University San Bernardino

Informed Consent Form

If you agree to participate in the driving behaviors study please read the following statement, then mark the form with a check mark, date it, and turn it in to the survey collector.

"I understand the nature of the study on driving behaviors and I agree to participate voluntarily. I am at least 18 years of age."

MARK WITH A CHECK IF YOU AGREE _____ Date _____

APPENDIX C
DEBRIEFING STATEMENT

DEBRIEFING STATEMENT

The reasons for conducting this study were to analyze two main factors that might contribute to road rage, the perceived lack of time by the driver, and the distance traveled by the driver. The surveys will aid in analyzing which one of these elements contributes more to road rage behavior. Please do not reveal the nature of the study to other potential participants since that could influence the data that is collected from surveys.

If you have any questions concerning your rights as a participant in this survey, you can contact Dr. Rosemary McCaslin, PhD, at the Social Work Department at Cal-State San Bernardino at (909) 880-5501. The results of this research can be obtained through the Pfau Library at Cal State San Bernardino in the summer of 2002.

Once again, thank you for your time.

REFERENCES

- AAA Foundation for Traffic Safety. (1996). Summary of Aggressive Driving Study. Retrieved October 18, 1997, from <http://www.aaafoundation.org/pdf/roadragePR.PDF>
- Bar-Tal, Y., Cohen-Mansfield, J., & Golaner, H. (1998). Which stress matters? The examination of temporal aspects of stress. The Journal of Psychology, 132(5), 569-576.
- Collins, R. (1993). What does conflict theory predict about America's future? Sociological Perspectives, 36(4), 289-313.
- Dickinson, J. B. (Ed.). (2000). Road rage. Retrieved November 15, 1997, from <http://www.dot.state.ia.us/roadrage.htm>
- Diekmann, A., Jungbauer-Gans, M., Krassnig, H., & Lorenz, S. (1996). Social status and aggression: A field study analyzed by survival analysis. The Journal of Social Psychology, 136(6), 761-768.
- Harding, R., Morgan, F., Indermaur, D., Ferrante, A., & Blagg, H. (1998). Road rage and the epidemiology of violence: something old, something new. Studies on Crime and Crime Prevention, 7(2), 221-238.
- James, L. (1997). Road Rage. Retrieved October 18, 1997, from <http://www.aloha.net/~dyc/articles/testimony.htm>
- Kenel, F. (2000). Responsible diving. Woodland Hills, CA: Glencoe/McGraw-Hill.
- Lawton, R., Parker, D., Manstead, A., & Stradling, S. (1997). The role of affect in prediction social behaviors: The case of road traffic violations. Journal of Applied Social Psychology, 27(14), 1258-1276.
- Lawton, R., Parker, D., Stradling, S., & Manstead, A. (1997). Predicting road traffic accidents: The sole of social deviance and violations. British Journal of Psychology, 88(2), 249-278.

- Lowenstein, L. F. (1997). Research into causes and manifestations of aggression in car driving. Police Journal, 70(3), 263-270.
- Nerenberg, A. P. (1996). Road Rage. Los Angeles, CA: Seed-Thought Publishers.
- Pedersen, D. M. (1998). Factors in route selection. Perception and Motor Skills, 86(3), 999-1006.
- Ruback, B. R., & Juieng, D. (1997). Territorial defense in parking lots: Retaliation against waiting drivers. Journal of Applied Social Psychology, 27(9), 821-834.
- Simon, F., & Corbett, C. (1996). Road traffic offending, stress, age, and accident history among male and female drivers. Ergonomics, 39(5), 757-780.
- Stevens, J. E. (1994). Treating violence as an epidemic-An expanded role for public-health techniques. Technology Review, 97, 22-30.
- Taris, T. W. (1998). Students' subjective appraisals of driving behavior. The Journal of Social Psychology, 138(4), 505-513.