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Recklessness in Context: Individual and Situational Correlates to Aggressive Driving

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Abstract

Traffic related injury and fatality are major health risks in the United States and worldwide. One contributor to road accidents is unsafe and aggressive driving practices. We examined individual and situational aspects of aggressive driving by having 152 undergraduate students complete self-report measures. Aggressive driving was related to personality variables such as hostility, sensation seeking, and competitiveness, as well as to social variables such as driving without passengers and characteristics of the target vehicle (e.g., passengers, age, and status of driver), environmental variables (e.g., type of road, traffic, and weather), and temporal variables (e.g., time pressure and time of day).

Recklessness in Context: Individual and Situational Correlates to Aggressive Driving

Historically, technological advancement has provided people with new ways of hurting themselves and each other. During the late 19th and early 20th centuries, the development and mass marketing of affordable automobiles paved the way for the very modern problems of unsafe and aggressive driving. As early as 1885, the first year of the gasoline engine automobile, inventor Karl Benz was overcome by the speed of his creation and crashed into a brick wall (Panati, 1984). In the subsequent 123 years, both speed and accidents have increased as rapidly as the popularity of the automobile itself.

Today, traffic accidents and deaths constitute a major worldwide health crisis. According to the World Health Organization (WHO), traffic injuries account for about one quarter of global injury related deaths (Peden et al., 2004). The WHO listed road traffic injuries as the ninth leading cause worldwide of disability-adjusted life years lost and estimated that by 2020 accidents will be ranked as the third leading cause, under ischaemic heart disease and unipolar major depression (Peden et al., 2004). In the United States, the National Highway Traffic Safety Administration (NHTSA, 2007) reported that, in 2005, there were 6,159,000 police-reported crashes resulting in 2,699,000 injuries and 43,442 deaths. In addition to the costs in human life and suffering, the NHTSA (2007) estimated that the economic cost for crashes in 2005 was 230.6 billion dollars.

Although traffic accidents have a variety of causes, one contributor is unsafe and aggressive driving behaviors. Our study examined individual and situational variables related to aggressive driving. During the past decade, the bulk of the research examining psychological aspects of aggressive driving has involved self-report measures. Many of these studies conceptualized aggressive driving in terms of hostile emotions behind the wheel (Blanchard, Barton, & Malta, 2000; Deffenbacher, Oetting, & Lynch, 1994; Ellison-Potter, Bell &

Deffenbacher, 2001; Guofeng & Cundao, 2003; Wiesenthal, Hennessy, & Gibson, 2000) or disruptive cognitive states such as driver stress, aggressive thoughts, or coping responses to driving environments (Glendon et al., 1993; Mathews et al., 1998; Mathews, Tsuda, Xin, & Ozeki, 1999). Our study adopted a third approach that emphasized self-reported aggressive driving behavior (Aberg & Rimmo, 1998; Baxter et al, 1990; Houston, Harris, & Norman 2003; Schreer, 2002). Based on this perspective, aggressive driving represents a pattern of unsafe driving behaviors which can be assessed without reference to possible emotional or motivational states. Accordingly, aggressive driving is operationally defined as the reported frequencies of specific driving behaviors. For example, Houston, Harris, and Norman (2003) defined aggressive driving as "a dysfunctional pattern of social behaviors that constitutes a serious threat to public safety" (p. 269). In our study we utilized Houston et al. (2003) Aggressive Driving Behavior Scale which operationalizes aggressive driving as "conflict behaviors" that are clearly directed towards others (e.g., horn honking, rude gestures, accelerating to prevent passing) and "speeding behaviors" (e.g., driving fast, close passing, tailgating) that may not be directed towards a specific target but are still potentially injurious to the driver, other motorists, and pedestrians.

In our study, we adopted several precepts of the "transactional world view" (Altman & Rogoff, 1987; Werner, Brown, & Altman, 2002). Altman and Rogoff (1987) defined the transactional approach as, "the study of the changing relations among psychological and environmental aspects of holistic unities" (p. 24). Aspects include people (social aspects), place (environmental aspects), psychological processes (psychological aspects) and time (temporal aspects). Although our research does not conform to a transactional approach in a number of fundamental ways, we did utilize the four "aspects" of this approach in order to provide a more holistic explanation of aggressive driving (see Figure 1).

The psychological factors in our study consisted of individual difference or personality

variables. As illustrated in Figure 1, these variables included hostility, sensation seeking, competitiveness, and gender. Hostile individuals may be more likely to drive aggressively (Galovski & Blanchard, 2002; Norris, Matthews, & Riad, 2000) in that they are more easily angered while driving (DePasquale, Geller, Clarke, & Littleton, 2001) and this anger increases the probability of aggressive behavior behind the wheel (Deffenbacher, Huff, Lynch, Oetting, & Salvatore, 2000). Sensation seekers may also be more likely to drive aggressively (Arnett, Offer, & Fine, 1997; Dahlen, Martin, Ragan, & Kuhlman, 2005; Jonah, Thiessen, & Au-Yeung, 2001; Matthews et al., 1999; Nell, 2002) in an attempt to alleviate boredom or as a means of thrill and adventure seeking (i.e., aggressive driving is a form of "entertainment"). Competitive individuals may perceive aggressive driving, such as speeding and unsafe passing, as a means to "win" or compete against other drivers (Blanchard et al., 2000; Houston et al., 2003). Finally, with regard to gender, young male drivers are at greater risk for accidents both in the United States (NHTSA, 2007) and worldwide (Peden et al., 2004); one potential cause for accidents is aggressive and unsafe driving. In fact, males report more extreme forms of aggressive driving behavior such as verbal confrontation or throwing objects (Blockey & Hartley, 1995; Hennessy & Wiesenthal, 1999; Simon & Corbett, 1996) and express more positive attitudes towards aggression than females (Knight, Fabes, & Higgins, 1996). However, male and female drivers report comparable levels of mild aggressive driving such as horn honking and tailgating.

In our study we examined two sets of social variables: the presence or absence of passengers in the driver's vehicle and social aspects of the target vehicle (i.e., the vehicle towards which aggression is directed). Preusser, Fergusen, and Williams, (1998) reported that the presence of passengers may increase accident risk for drivers under the age of 24, while Conner, Smith, and McMillan (2003) found that young male drivers with male passengers are more susceptible to social pressures to speed. In contrast to these findings, Shinar and Compton (2004)

observed a more varied sample and found that the presence of passengers was related to decreases in aggressive driving. Still other research by Baxter et al. (1990) indicated that different types of passengers may affect different unsafe driving practices (e.g., older female passengers decreased speeding but also decreased use of turn signals when changing lanes). At this time, it appears that the role of passengers is not a simple one.

With the exception of status, there is very little research on target vehicle variables. With regard to gender, research on other forms of aggression might lead us to expect that aggressive driving would be most likely directed by men toward men (Daly & Wilson, 1988). However, Asbridge, Smart, and Mann (2004) found no gender differences in the targets of road rage. With regard to age and passengers, aggression towards elderly target drivers, or target vehicles containing children as passengers, would violate social norms concerning these age groups. With regard to target vehicle status, Doob and Gross (1968) found that lower status vehicles hesitating at a green light were more likely that higher status vehicles to receive horn honks. However, McGarva and Steiner (2000) failed to find status differences in retaliatory aggression when participants were the target of honking by high or low status vehicles.

Although there are a variety of environmental factors that could increase aggressive behaviors, many of these variables may not be salient to drivers or memorable when drivers self-report aggressive behavior. Heat, for example, has been linked to aggression (Anderson, 1989) and aggressive driving (Kenrick & MacFarlane, 1986) but it may not be realistic to expect drivers to accurately recall whether they used their horns more or less in hot weather. In our study we attempted to assess three environmental conditions that should be salient and memorable to drivers: type of road (residential, commercial, interstate), traffic (light versus heavy) and weather conditions (clear, rain, fog). Given the general literature on crowding, stress, and aggression (Baum & Paulus, 1987), along with specific research on aggressive driving

(Hennessy & Wiesenthal, 1999; Shinar, 1998; Shinar & Compton, 2004), we would expect greater levels of aggressive and unsafe practices in high traffic, high stress conditions. Given the increased traffic, aggression may also be more likely to occur on highway and 4-lane commercial roads as opposed to residential roads. Social norms may also discourage aggressive driving in residential neighborhoods. With regard to weather, Edwards (1999) found that drivers decrease speeds under rainy and misty conditions. Because aggressive driving in inclement weather adds a level of risk to both driver and target, it should be less likely than when the weather is clear.

Temporal variables in our study included time pressure and time of day. The role of traffic congestion in aggressive driving, discussed earlier, may interact with time pressure to increase aggressive driving (Karlberg, Unden, Elofsson, & Krakau, 1998; Shinar, 1998; Shinar, Bourla, & Kaufman, 2004; Shinar & Compton, 2004). This is consistent with the literature on aggression resulting from stress and frustration (Berkowitz, 1989; Geen, 1998). When time pressured, as happens during rush hour, drivers may be frustrated by obstacles preventing them from reaching their destination. When these obstacles turn out to be other drivers, conditions are ripe for aggression. Time of day is linked to rush hour, congestion, and time pressure. In the United States in 2005, the highest number of crashes within a given 3-hour period was 3:00 to 6:00 pm, corresponding to the afternoon rush hour (NHTSA, 2007).

In summary, we have hypothesized that aggressive driving will be related to individual differences as well as to a variety of social, environmental, and temporal variables.

Method

Participants

Our participants were 152 undergraduate students (93 female and 59 male) at a small liberal arts college. Participants ranged in age from 18 to 22 years, with a mean age of 19.70 (*SD* = 1.07). Just over one third (36.7%) of participants reported that most of their driving experience

was on the highway, with the remaining 63.3% reporting more experience with city driving. Length of driving experience ranged from 1 to 8 years (M = 3.76, SD = 1.49).

Measures

We measured aggressive driving using the Aggressive Driving Behavior Scale (Houston, Harris, & Norman, 2003) which includes two subscales: the Conflict Behavior Scale (aggressive behaviors clearly directed towards other drivers) and the Speeding Scale (behaviors of drivers who typically drive at higher speeds).

We administered four personality scales to predict aggressive driving. Hostility was measured using Cook Medley Hostility Scale (Cook & Medley, 1954). Sensation seeking was measured using two subscales from Form V of the Sensation Seeking Scale (Zuckerman, Eysenck, & Esenck, 1978): the Thrill and Adventure Seeking Scale (people who seek out high intensity sensory experiences) and the Boredom Susceptibility Scale (people who have a low tolerance for low sensory situations). Competitiveness was measured using the Revised Competitiveness Index (Houston, Harris, McIntire, & Francis, 2002).

We developed a questionnaire to measure the relationship of situational conditions to two aggressive driving behaviors: horn honking and tailgating. These two behaviors were selected to reflect the two subscales of the Aggressive Driving Behavior Scale (Houston et al., 2003). Conflict Behavior was represented by the Horn Honking item, “honking when another driver does something inappropriate.” The Speeding Scale was represented by the Tailgaiting item, “following a slower car at less than a car length.”

For both Horn Honking and Tailgating items, we asked participants how likely they would be to engage in the behavior under a variety of social, environmental, and temporal conditions using a 7-point scale (1 = “not at all likely” to 7 = “very likely”). Social conditions included Passengers (participant alone or with passengers) as well as aspects of the “target

vehicle" (i.e., the vehicle that is the target of the aggressive acts). Target vehicle conditions included Target Passengers (driver is alone, adult passengers, or juvenile passengers), Target Gender, Target Age (driver is young, middle aged, or elderly), and Target Status as indicated by a vehicle (appears expensive or inexpensive). Environmental conditions included Type of Road (interstate, 4-lane commercial, or 2-lane residential roads), Traffic (light or heavy traffic), and Weather (clear, raining, or foggy). Temporal conditions included Time Pressure (participant is pressed for time or not) and Time of Day (morning, afternoon, or evening).

Results

Analysis of Individual Difference Variables

After participant Gender was dummy coded (Cohen & Cohen, 1983) with female as "0" and male as "1", we used two separate multiple regression analyses with simultaneous entry of Gender and the other individual difference measures to predict the Conflict Behavior and Speeding Scales of the Aggressive Driving Behavior Scale (Houston, et al, 2003). The results from the two analyses are presented in Table 1.

Simple correlations indicated that scores on the Conflict Behavior Scale were positively related to scores on Hostility, Boredom Susceptibility, and Competitiveness, and to being male. However, only Hostility and Boredom Susceptibility remained as significant predictors in the multiple regression analysis. The regression model predicting the Conflict Behavior Scale explained 17% (adjusted R^2) of the variance, $F(5, 145) = 7.04$, $p < .01$.

For the Speeding Scale, simple correlations indicated positive relationships with Hostility, Thrill and Adventure Seeking, Boredom Susceptibility, and Competitiveness. However, only Hostility, Thrill and Adventure Seeking, and Boredom Susceptibility remained as significant predictors in the multiple regression analysis. The regression model predicting the Speeding Scale explained 19% (adjusted R^2) of the variance, $F(5, 145) = 7.99$, $p < .01$.

Analysis of Situational Variables

We analyzed the situational variables using a series of mixed-model analyses of variance. Different situational conditions were the within-subjects factors while Gender of participant was the between-subjects factor. Analyses were conducted separately for Horn Honking and Tailgating items. Means for these analyses are presented in Tables 2 through 5.

Horn Honking means for the Social items are presented in Table 2. A marginal effect for Passengers indicated that participants reported more honking when alone than when others were in the car, $F(1, 144) = 3.83$, $p = .052$. A significant main effect for Target Passengers, $F(2, 288) = 7.81$, $p < .01$, was qualified by an interaction, $F(2, 288) = 6.71$, $p < .01$, with women reporting significantly less honking when children were passengers in the target vehicle. A significant main effect for Target Age indicated that participants were less likely to honk at elderly drivers, $F(2, 290) = 3.54$, $p = .03$. There were no effects for Target Gender and Status.

Tailgating means for the Social items are presented in Table 3. Although participants reported more tailgaiting when alone, this effect was not significant, $F(1, 149) = 3.22$, $p = .075$. There was a significant effect for Target Passengers, with participants reporting less Tailgaiting when children were in the target vehicle $F(2, 296) = 10.73$, $p < .01$. There was also an effect for Target Status with participants reporting greater reluctance to tailgate expensive vehicles $F(1, 149) = 8.35$, $p < .01$. Although there were no situational effects for Target Age and Gender, there was a participant Gender effect for Target Gender, with men reporting higher scores on this question regardless of Target Gender designation, $F(1, 148) = 3.96$, $p = .048$.

Horn Honking and Tailgaiting means for the Environmental items are presented in Table 4. For Horn Honking, a significant effect for Type of Road indicated more honking on smaller roads as opposed to the highway driving, $F(2, 290) = 4.62$, $p = .011$. Participants also reported more honking when Traffic was heavy $F(1, 145) = 11.46$, $p < .01$. The main effect for Traffic

was qualified by an interaction which indicated that increased honking in heavy traffic was particularly pronounced among women, $F(1, 145) = 4.33$, $p = .04$. There were no significant Horn Honking effects for Weather. For Tailgating, there were effects for Type of Road, $F(2, 298) = 16.96$, $p < .01$, Traffic, $F(1, 149) = 18.31$, $p < .01$, and Weather, $F(2, 296) = 59.25$, $p < .01$. Participants reported that they were more likely to Tailgate on smaller roads, in heavier traffic, and when the weather was clear as opposed to rainy or foggy.

Horn Honking and Tailgaiting means for the Temporal items are presented in Table 5. For Horn Honking, a significant main effect for Time Pressure, $F(1, 145) = 97.21$, $p < .01$, was qualified by a marginal interaction effect, $F(1, 145) = 3.82$, $p = .053$. Both men and women reported more honking when pressed for time, but this behavior was somewhat more pronounced among women. A main effect for time of day, $F(2, 290) = 5.45$, $p < .01$, indicated that participants were less likely to honk in the morning. For Tailgating, participants reported that they were more likely to tailgate when pressured for time, $F(1, 148) = 53.14$, $p < .01$, and less likely to tailgate in the morning, $F(2, 294) = 7.30$, $p < .01$.

Discussion

Using a framework drawn from the transactional world view (Altman & Rogoff, 1987; Werner et al., 2002), we tried to account for an array of variables and illustrate the pattern of our results for aggressive driving. This pattern of results is illustrated in Figure 2. Conflict Behavior/Horn Honking was characterized by hostile and easily bored drivers under time pressure while driving alone in heavy traffic on smaller roads during the afternoon or evening. Time pressure and traffic appeared to be somewhat more of an issue for female drivers. Honking was more likely to be directed toward non-elderly targets and, if the driver was female, less likely if there were children in the target vehicle. Speeding/Tailgating was characterized by hostile, easily bored, thrill seekers, driving under time pressure in heavy traffic on smaller roads

during the afternoon or evening. These drivers were more likely to show restraint if the weather was poor, if children were riding in the target vehicle, and if the target vehicle was expensive.

Our study is consistent with some of the previous research while adding some new information to the literature. For example, our findings support literature on the link between aggressive driving and such variables as driver hostility (Galovski & Blanchard, 2002; Norris et al., 2000), sensation seeking (Arnett, Offer, & Fine, 1997; Dahlen et al., 2005**;** Jonah et al., 2001; Nell, 2002; Matthews et al., 1999), competitiveness (Blanchard et al., 2000; Houston et al., 2003), the status of the target vehicle (Doob & Gross, 1968), the presence of passengers in the driver's vehicle (Shinar & Compton, 2004), traffic and time pressure (Hennessy & Wiesenthal, 1999; Shinar, 1998; Shinar & Compton, 2004), and weather conditions (Edwards, 1999). Like Hennessy and Wiesenthal (2001, 2002), we found comparable levels of mild aggression for females and males; unlike previous studies our sample of females were more likely to honk when time pressured and in heavy traffic. Other new findings relate to the age of individuals in the target vehicle (i.e., children passengers and senior drivers inhibit aggression in our sample) and time of day (low aggression in the morning). Also, we unexpectedly found less honking and tailgating on the highway as compared to commercial and residential areas – perhaps drivers are aware of the increased danger of these activities in this location? Research is needed to better understand this finding.

While adding to the literature, our study is not without limitations. For example, our sample was limited to college students in the 18 to 22 year age range. The pattern of results found in this study may not apply older, more experienced drivers. This being said, our undergraduate sample includes the highest risk age group with regard to aggressive and unsafe driving practices (Hemenway & Solnick, 1993; Jonah, 1990; Parker, Reason, Manstead, & Starling, 1995). In the United States, driver involvement in crashes during 2005 was highest for

16-20 year olds followed by 21-24 year olds (NHTSA, 2007). Younger drivers may be at risk because of a lack of experience, but there may also be clusters who are more hostile, higher sensation seekers, more competitive, or lacking in impulse control (Deery & Fildes, 1999).

Like much of the research on aggressive driving, our study may be limited by the use of self-report measures. We advocate the utility of the adopting the transactional framework (if not the approach) to a variety of methodologies in order to gain a better understanding of aggressive driving. The current literature relies extensively on personality scales and retrospective self-report, but there are also studies using driving simulations, natural observation, experience sampling (e.g., diaries, cell-phone interviews from the road), laboratory and field experimentation, and archival data. Because each of these methods has its own strengths and weaknesses, each could make a different contribution to our knowledge of this phenomenon. For example, simulation data might allow us to examine roadway vegetation, an environmental variable that may impact driver stress levels (Cackowski & Nasar, 2003) but that probably could not be accurately remembered in retrospective self-reports. Other environmental variables, such as information on temperature, weather, and road conditions might be better assessed using natural observation, field experimentation, and archival data. In the end, it is doubtful that any single methodology can do a better job of providing a holistic understanding of the phenomenon when compared to a combination of methodologies.

In addition to its potential utility in research, the framework used in our study might prove a valuable applied tool for education, treatment, and prevention. Along with research about the causes of aggressive driving, scholars have been investigating ways prevent these practices among average drivers and therapies to intervene with highly aggressive drivers (see Galovski, Malta, & Blanchard, 2006, for a review). The approach used in our study could provide a framework that would allow individuals to identify the psychological, social, environmental, and

temporal aspects of their own unsafe driving practices. Once identified and understood, driving instructors working with students, or therapists working with clients, could help individual drivers to develop and implement strategies to deal with personal "triggers" without resorting to aggressive behavior.

The National Highway Traffic Safety Administration (Subramanian, 2007) recently reported that, "in 2004, motor vehicle traffic crashes were the leading cause of death for every age 2 through 34" (p. 1). For the first 34 years of life, we are more likely to die in a vehicle crash than of cancer, homicide, suicide, heart disease, accidental poisoning, congenital anomalies, etc. These types of statistics illustrate the critical need for research on driving behavior. If aggressive driving is part of the problem, then a better understanding of this phenomenon must be part of the solution. We hope that as this type of research becomes more common, we will be better able to determine how results can be translated into effective intervention and application.

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Table 1

Correlations and Standardized Beta Coefficients for Aggressive Driving Behavior Subscales

	Conflict Behavior		Speeding	
Predictor Variables	*r*	β	*r*	β
Hostility	.33**	.27**	.33**	.29**
Thrill and Adventure Seeking	.10	.02	.25**	.22**
Boredom Susceptibility	.33**	.23**	.26**	.19*
Competitiveness	.20*	.10	.19*	.11
Gender (0=Female, 1=Male)	.18*	.05	.04	-.15

*$p < .05$. **$p < .01$.

Table 2

Mean Likelihood of Horn Honking for Social Conditions

		Females	Males	Total
Participant's vehicle				
Passengers	Alone in the car	3.59	3.38	3.51
	Passengers in the car	3.97	3.51	3.79
Target's vehicle				
Passengers	Alone	3.34	3.40	3.36
	Adult passengers	3.27	3.27	3.27
	Children passengers	2.78	3.33	2.99
Gender	Female	3.50	3.67	3.56
	Male	3.38	3.78	3.53
Age	Young	3.61	3.73	3.65
	Middle aged	3.46	3.69	3.54
	Elderly	3.20	3.60	3.35
Status	Inexpensive vehicle	3.46	3.51	3.48
	Expensive vehicle	3.35	3.51	3.41

Table 3

Mean Likelihood of Tailgating for Social Conditions

		Females	Males	Total
Participant's vehicle				
Passengers	Alone in the car	3.77	3.95	3.84
	Passengers in the car	3.55	3.67	3.60
Target's vehicle				
Passengers	Alone	3.11	3.40	3.22
	Adult passengers	3.03	3.40	3.17
	Children passengers	2.61	3.10	2.80
Gender	Female	3.13	3.70	3.35
	Male	3.18	3.60	3.34
Age	Young	3.20	3.70	3.39
	Middle aged	3.32	3.51	3.39
	Elderly	3.24	3.70	3.41
Status	Inexpensive vehicle	3.09	3.50	3.25
	Expensive vehicle	2.85	3.21	2.99

Table 4

Mean Likelihood of Aggressive Driving for Environmental Conditions

		Females	Males	Total
		Horn honking behavior		
Type of Road	Freeway / interstate highway	3.45	3.25	3.37
	In-town 4-lane commercial area	3.61	3.67	3.63
	In-town 2-lane residential area	3.52	3.69	3.59
Traffic	Traffic is light	3.33	3.44	3.37
	Traffic is heavy	4.09	3.62	3.91
Weather	Weather is clear	3.82	3.47	3.69
	Raining	3.59	3.73	3.64
	Fog	3.46	3.58	3.51
		Tailgating behavior		
Type of Road	Freeway / interstate highway	3.23	2.98	3.13
	In-town 4-lane commercial area	3.51	3.53	3.52
	In-town 2-lane residential area	3.99	3.88	3.95
Traffic	Traffic is light	3.46	3.53	3.49
	Traffic is heavy	4.39	4.50	4.43
Weather	Weather is clear	4.10	4.16	4.12
	Raining	2.60	2.86	2.70
	Fog	2.32	2.79	2.50

Table 5

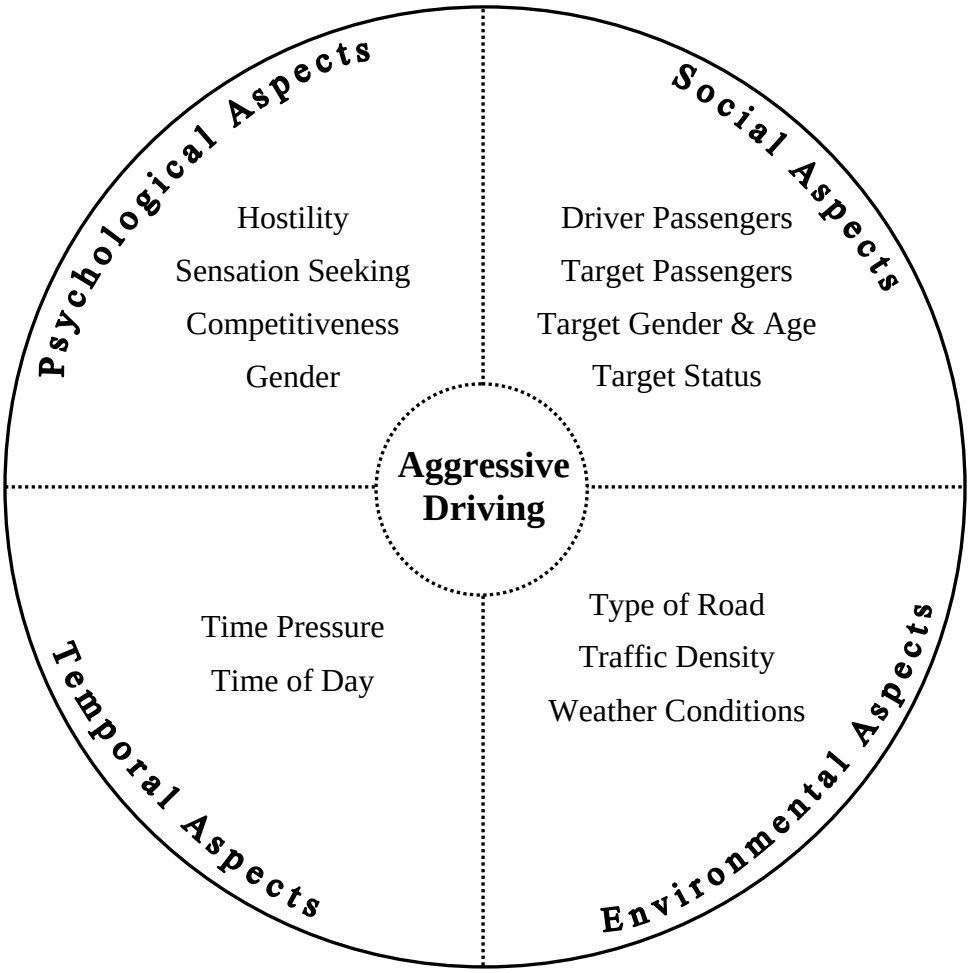
Mean Likelihood of Aggressive Driving for Temporal Conditions

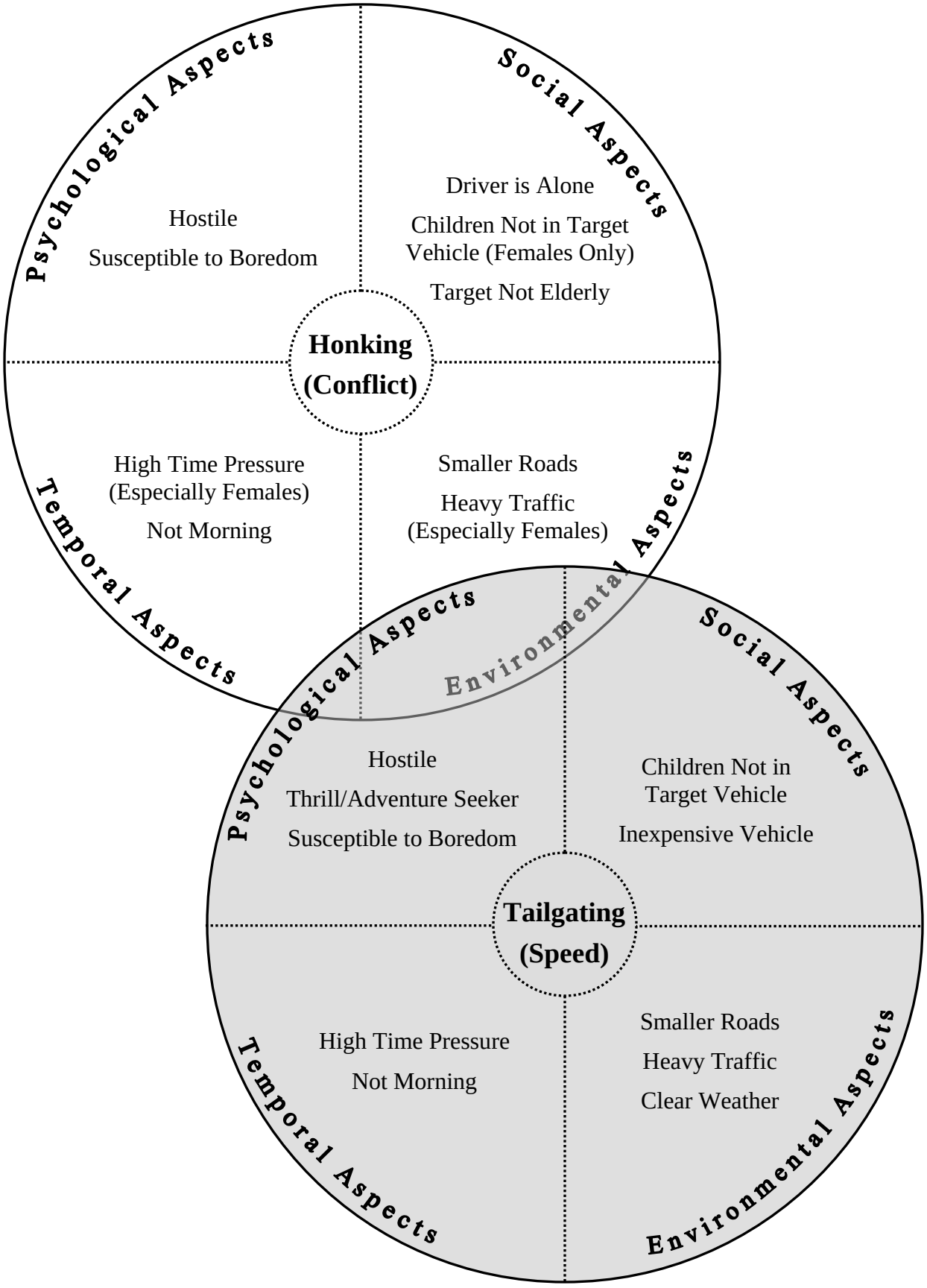
		Females	Males	Total
		Horn honking behavior		
Time Pressure	Not pressed for time	3.05	3.11	3.07
	Pressed for time	4.63	4.16	4.46
Time of Day	Morning (before noon)	3.38	3.38	3.38
	Afternoon (noon to 7 p.m.)	3.63	3.55	3.60
	Evening (after 7 p.m.)	3.85	3.53	3.73
		Tailgating behavior		
Time Pressure	Not pressed for time	3.15	3.28	3.20
	Pressed for time	4.68	4.47	4.60
Time of Day	Morning (before noon)	3.35	3.50	3.41
	Afternoon (noon to 7 p.m.)	3.80	3.77	3.79
	Evening (after 7 p.m.)	3.90	3.77	3.85

Figure Captions

Figure 1. Research variables presented in a transactional framework.

Figure 2. Statistically significant results presented in a transactional framework.


Psychological Aspects
Hostility
Sensation Seeking
Competitiveness
Gender
Social Aspects
Driver Passengers
Target Passengers
Target Gender & Age
Target Status
Aggressive Driving
Temporal Aspects
Time Pressure
Time of Day
Environmental Aspects
Type of Road
Traffic Density
Weather Conditions


Psychological Aspects
Social Aspects
Hostile
Susceptible to Boredom
Driver is Alone
Children Not in Target Vehicle (Females Only)
Target Not Elderly
Honking (Conflict)
High Time Pressure (Especially Females)
Not Morning
Smaller Roads
Heavy Traffic (Especially Females)
Temporal Aspects
Environmental Aspects
Psychological Aspects
Social Aspects
Hostile
Thrill/Adventure Seeker
Susceptible to Boredom
Children Not in Target Vehicle
Inexpensive Vehicle
Tailgating (Speed)
High Time Pressure
Not Morning
Smaller Roads
Heavy Traffic
Clear Weather
Temporal Aspects
Environmental Aspects