The Effect of Unsafe Driving Behaviors on Attitudes Toward Texting While Driving

By

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Extensive research, specifically by Pascual-Ferrá, et al. (2012), Cook & Jones (2011), Rhodes & Pivik (2009), Gozzi (2008), Nevile (2012), has been conducted in the field of Communications on unsafe driving behaviors, especially since the emergence and ever increasing presence of cellular devices in society. However, very little research has targeted specifically the relationship between individuals who demonstrate hazardous driving behaviors and the likelihood of these individuals to engage in texting while driving. The research question of the present study is how do unsafe driving behaviors influence attitudes toward texting while driving? The current study seeks to establish a correlation and cause and effect relationship between hazardous driving behaviors and texting while driving. If a relationship exists, then further evidence can be provided to support anti-texting while driving campaigns and commercials. Additionally, if a correlation between hazardous driving behaviors and texting while driving is found, commercials and campaigns can be directed toward this group of individuals, making anti-texting while driving campaigns more effective and worthwhile. Based on the following synthesis of prior research regarding this topic, it is hypothesized that those who are more likely to engage in
Unsafe driving behaviors (i.e., running stop signs, running red lights, speeding) are more likely to text while driving.

Introduction

The degree to which cellular devices are used and relied upon in our daily lives is significant. Individuals rely on their cell phones for a variety of purposes, including social interactions, work, entertainment, and to obtain news. However, the use of cell phones while driving has been linked to a number of consequences and even many fatalities. A newer phenomenon that has played a part in these consequences is texting while driving. Texting while driving has caused legislation to ban the use of cell phones while driving and has even sparked a number of anti-texting campaigns and coalitions. Extensive research has been conducted in the field of Communication on unsafe driving behaviors, specifically by Pascual-Ferrá, et al. (2012), Cook & Jones (2011), Rhodes & Pivik (2009), Gozzi (2008), Nevile (2012), especially since the emergence and ever increasing presence of cellular devices in society. However, very little research has targeted specifically the relationship between individuals who demonstrate hazardous driving behaviors and the likelihood of these individuals to engage in texting while driving. The National Highway Traffic Safety Administration (NHTSA) defines hazardous driving as, "when individuals commit a combination of moving traffic offenses so as to endanger other persons or property. behaviors typically associated with aggressive driving include: exceeding the posted speed limit, following too closely, erratic or unsafe lane changes, improperly signaling lane changes, failure to obey traffic control devices (stop signs, yield signs, traffic signals, railroad grade cross signals, etc.)" ("Define aggressive driving"). The research question of the present study is how do unsafe driving behaviors influence attitudes toward
texting while driving? The current study seeks to establish a correlation and cause and effect relationship between hazardous driving behaviors and texting while driving. If a relationship exists, then further evidence can be provided to support anti-texting with driving campaigns and commercials. Additionally, if a correlation between hazardous driving behaviors and texting while driving is found, commercials and campaigns can be directed toward this group of individuals, making anti-texting while driving campaigns more effective and worthwhile. Based on the following synthesis of prior research regarding this topic, it is hypothesized that those who are more likely to engage in unsafe driving behaviors (i.e. running stop signs, running red lights, and speeding) are more likely to have an attitude that supports texting while driving. In the present study, it is hypothesized that those who engage in unsafe driving behaviors will have an attitude that texting while driving is safe, or not risky. Those who do not engage in unsafe driving behaviors will have an attitude that texting while driving is dangerous.

Literature Review

Pascual-Ferrá, Liu, and Beatty (2012) prefaced their research by stating some key justifications. The article stated that approximately 30 percent of all automobile accidents are the result of texting while driving (National Safety Council, 2010). As a result of these accidents, the article mentions that there has been a significant increase in public campaigns to ban texting while driving, most notably state and federal agencies as well as Mothers Against Texting While Driving. Pascual-Ferrá, et al. (2012) stated that often times the justification for such campaigns involve comparative measures to link the behavior of texting while driving to that of substance use, particularly impairment from alcohol (Pascual-Ferrá, et al. 2012). Most of these studies have been conducted on a relatively small scale, causing the present study to research a large sample on three different domains. The results of the study, or a contrast meta-analysis, concluded that
there were large and comparable effects on poor driving performance for texting as well as alcohol use. In addition, the same affects occurred for marijuana use, however this effect was considerably less than texting or alcohol (Pascual-Ferrá, et al. 2012). This connects to the present study in that the comparison of texting while driving can be effectively linked to drinking and driving, or substance use and driving, as a means of an anti-texting campaign.

Cook & Jones (2011) sought to examine and identify a relationship between young adults, or more specifically college students, texting as well as using the web on their cellular device and driving outcomes. The driving outcomes specifically regarded in this study were the amount of traffic citations that the participants had, as well as the amount of car crashes and accidents. The study was premised on the belief that texting while driving, as well as utilizing a cellular device for the purposes of the internet while driving, are distractions, as well as show replicated behaviors that ultimately lead to unwanted outcomes, such as crashes and traffic citations (Cook & Jones, 2011). A sample of 274 college students across three different campuses completed a survey representative of their driving experiences and cell phone usage. The researchers concluded that about 74 percent of young adults text while driving, with over half engaging in this behavior on a weekly basis and about 20 percent accessing the web via their cellular device (Cook & Jones, 2011). Results concluded through data analysis a relationship between cell phone usage while driving and driving outcomes such as traffic citations and crashes was determined. (Cook & Jones, 2011). This study connects to the current study in that it lays the foundation for the research question, how do unsafe driving behaviors influence attitudes toward texting while driving, by having determined a causal relationship between cell phone usage and unfavorable driving outcomes, such as accidents and traffic citations. If cell phone
usage while driving impacts the safety of driving, then it is likely that texting while driving is unsafe.

Rhodes & Pivik (2009) focused on risky driving behaviors in relation to perceptions of risk and positive affect in teenage drivers. Using quantitative, survey methodology, it was found that teen drivers engaged in risky driving behavior far more frequently than adults. In addition, the study found that teens males were more likely to engage in risky driving behavior than females (Rhodes & Pivik, 2009). The study demonstrated that positive affect, or liking for risky behaviors, as well as perceptions of risk were negatively correlated. In addition, Rhodes & Pivek (2004) substantiated that the participants who had a strong relationship between positive affect and lower perceptions of risk were the most likely to engage in risky driving behavior. The study overall concluded and discussed how in the broader subject of communication, directing attention to "affective correlates" may reduce risky driving behaviors, such as texting and driving (Rhodes & Pivek, 2004, p. 16). This study is relevant to the current study because it addresses how risky driving behaviors can be addressed, which is the main purpose of an anti-texting campaign. Also, it establishes what audiences to specifically target by providing the information that teen males are the most likely population to text and drive.

Gozzi (2008) focused on the usage of cell phones in relation to distractions. The article states that when people are in the cell phone zone, their attention is pulled away from present reality, leading to issues specifically with driver safety. In 2008, a survey concluded that 40 percent of 16 to 30 year old drivers texted while driving (Gozzi, 2008). The article continued to discuss the effects of the growth in the cell phone industry, including the ability to do more and more such as watch television on the cell phone screen. The article concluded that as the cell phone zone increases, so will lack of attention to the present and physical reality such as driving
(Gozzi, 2008). This article is particularly relevant, as it evinces that the cell phone industry is one that is going to continue to grow, expanding the capabilities of the cell phone. As a result, texting and driving as well as using social media via the cellular device while driving is a problem that is going to grow as well. As a result, it is important to use the information in the present study to create an effective anti-texting campaign.

Similarly to the aforementioned study, Nevile (2012) focused on interaction as a distraction in driving. The research discusses how interactions can effect driving activities that are essential to safety. The driving activities examined in the article were orienting forward with eyes on the road, and maintaining hand contact with the wheel, both of which are altered when texting while driving (Nevile, 2012). Other behaviors that serve interaction and are counter beneficial to driving are gaze direction, postural orientation, and hand movement (Nevile, 2012). The research concludes that drivers organize the demands of interaction and driving as simultaneous and competing activities, particularly with the use of a mobile phone (Nevile, 2012). Based on this study, the likelihood of an individual to interact while driving socially is another factor that can be used in the survey in the present study. Perhaps if one is more likely to engage in the previously mentioned behaviors of interaction while driving, then they are more likely to text while driving.

Croze (2009) researched the efficacy and practicality of Senate Bill 1613 which banned the use of cellular devices while driving in the state of California. The article first discusses the reasoning behind the bill, which was put forth under the widely accepted idea that the use of cell phones while driving is distracting in terms of maneuvering a vehicle and also causes cognitive damage (Croze, 2009). Overall, the article concludes that if properly implemented through public authority, then the amount of traffic accidents in the United States will be significantly reduced
This study is relevant to the current study in that it addresses legislation that has been passed in relation to texting while driving. It has been determined that texting and driving has dangerous consequences.

Finally, Manganello & Chauhan (2011) focused on the impact that media has on texting and driving in teens. The study randomly selected three different episodes from the 15 most popular television shows and screened each for safe and unsafe driving behaviors. Factors looked at were the presence of seat belts, speeding, and using a cell phone while driving (Manganello & Chauhan, 2011). Results showed that only 17% of characters were depicted wearing seat belts. Additionally, drunk driving appeared in 3 instances while cell phone use appeared in one. The study concluded that adolescents received mixed messages when it comes to safe and unsafe driving behaviors being modeled on television (Manganello & Chauhan, 2011). This study correlates to the present study in that it affirms that individuals do receive exposure to unsafe driving behaviors through the television, making television a useful medium through which an anti-texting campaign could potentially be utilized.

Based on an overall synthesis of the research at hand, it is widely believed that texting while driving is an unsafe and risky behavior. As a result, the present study expects that individuals who engage in unsafe and hazardous driving behaviors are more likely to have an attitude toward texting and driving that is positive. For individuals who do not engage in unsafe driving behaviors, their attitudes toward texting and driving will be negative.

Methods

The study hypothesized that those who are more likely to engage in unsafe driving behaviors are more likely to have an attitude that supports texting while driving. The
independent variable in the study is unsafe driving behaviors, which can be operationally defined as running stop signs, running red lights, speeding, crashing, or breaking the law in any way in terms of driving. The independent variable was measured using a survey. The dependent variable in the study was attitudes toward texting while driving, which can be operationally defined and measured as an individual's beliefs toward texting while driving by determining whether the individual is in favor of texting while driving, against texting while driving, or indifferent. The moderator for the study is age, as it was determined through the review of literature that young adults and teens are the most likely to engage in risky driving behaviors as well as to text and drive. Confounding variables could be the type of phone, as some phones require more attention and dexterity than others, such as flip phones. As a result, the study was conducted using individuals who owned an iPhone.

The sample size of the study was 200 college students on a college campus. The sample was determined by simple random sampling, from which those participants who possess an iPhone would be selected to participate in the study. This ensured variance in the study as well as external validity.

The research methods used in the study are quantitative. A survey design was utilized as no variables were manipulated, and all variables were studied as they exist. One survey was administered to each selected participant online. Participants received an email, along with an online consent form. Once the participants consented to the study, they progressed through the survey by answering the question on the screen and then advancing to the next question. There was one question per page and no time limit.
The survey questions were close-ended questions using a Likert Scale to measure current driving behaviors and beliefs toward texting while driving. For example, to measure the independent variable of current driving behaviors a question would appear: *I slow down at yellow lights (Never, Rarely, Sometimes, Often)*. A sample question to measure the dependent variable, or attitudes toward texting and driving, was: *I believe that texting while driving is dangerous (Strongly disagree, disagree, neutral, agree, strongly agree)*. Participants chose the answer that best reflects their beliefs regarding texting while driving.

To analyze the results of the study, a correlation was measured to determine what type of relationship the independent variable, unsafe driving behaviors, and the dependent variable, attitude toward texting and driving, exists. Correlations were either interpreted as a direct relationship or an inverse relationship, and then the degree of the relationship, being highly dependable, moderate, fair, slight or negligible.

**Results**

The results of the present study show that the effect of unsafe driving behavior on attitudes toward texting while driving is negligible. In the present study, no correlation exists between unsafe driving behavior and attitudes toward texting while driving. Table 1 shows that the average participant in the study had an overall rating of unsafe driving behavior that was 2.37 out of a possible rating of 5 as the highest (*M*=2.37, *SD*=0.483). The average participant in the study had a relatively negative attitude toward texting while driving, again with 1 being the lowest rating, or most negative attitude, and 5 being the highest rating, or most positive attitude one could have toward texting while driving (*M*=1.83, *SD*=.587). Table 1 also depicts the average age of the participants in the study as being *M*=21.84.
Table 2 depicts the Pearson Correlation between unsafe driving behaviors and attitudes toward texting while driving as $r(65) = .076, p > .01$. This shows that the correlation between unsafe driving behavior and attitude toward texting while driving is negligible, or essentially shows no relationship. The strength of the relationship between variables shows that the correlation is not statistically significant and that there is not enough evidence to support this significance. Figure 1 shows the relationship between variables as being slightly positive, yet still no relationship.

A Correlation was also tested for gender and attitudes toward texting while driving, which shows that the correlation was again not statistically significant with $r(65) = .13, p > .01$. The correlation for the relationship between age and attitudes toward texting while driving was $r(65) = -.038, p > .01$. The present study shows that there is no relationship between unsafe driving behaviors and attitudes toward texting while driving, as well as between gender and age and attitudes toward texting while driving.
Descriptive Statistics

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Table 2

Correlations

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Figure 1. The Relationship between Unsafe Driving Behavior and Texting While Driving. This figure illustrates the negligible correlation between unsafe driving behaviors and attitude toward texting while driving.
Discussion

The present study hypothesized that those who are more likely to engage in unsafe driving behaviors (i.e. running stop signs, running red lights, and speeding) are more likely to have an attitude that supports texting while driving. More specifically it was hypothesized that those who engage in unsafe driving behaviors will have an attitude that texting while driving is safe, or not risky. Those who do not engage in unsafe driving behaviors will have an attitude that texting while driving is dangerous. Participants took an online questionnaire that asked questions regarding specific reckless driving behaviors as defined by the NHTSA as well as questions that asked participants about their attitudes toward texting while driving. The survey questions were
analyzed and each participant got an overall ranking of level of unsafe driving behavior and a ranking on overall attitude toward texting while driving from negative to positive. A Pearson Correlation test was conducted for each relationship. Results of the present study concluded that there was a negligible correlation between unsafe driving behaviors and attitudes toward texting while driving. Results also evinced that there was no existing relationship between age and attitudes toward texting while driving, as well as no existing relationship between gender and attitude toward texting while driving.

The results do not support the original hypothesis of the present study, as there was no correlation between unsafe driving behaviors and attitudes toward texting while driving. Results of the study and the lack of relationship between variables could be attributed to the sample size of the study, N=67. If the study had a larger number of participants, than there would be more evidence for statistical significance. In addition, there were only three participants in the study who responded to the questionnaire who admitted to a high level of unsafe driving. As a result, these individuals did appear to have relatively positive attitudes toward texting while driving, but there were not enough participants who were unsafe drivers to yield a strong correlation. Future studies should ensure a higher number of participants so that there is more evidence for statistical significance.

In an aforementioned conducted by Cook & Jones (2011), results concluded through data analysis that a relationship between cell phone usage while driving and driving outcomes such as traffic citations and crashes was determined. In addition, a study by Rhodes & Pivik (2009) found that teens males were more likely to engage in risky driving behavior than females. Given the information from these two studies, it is surprising that there was no correlation that existed for gender and attitude toward texting while driving for males. It is also surprising that no
correlation existed between harmful driving behaviors and attitudes toward texting while driving since research has proven a direct relationship between cell phone usage and driving outcomes. Rhodes & Pivek (2004) also substantiated that the participants who had a strong relationship between positive affect and lower perceptions of risk were the most likely to engage in risky driving behavior. These results did not transfer over to the present study, as risky driving behaviors in the current study was unable to be correlated with attitudes toward texting while driving, or in other words a potential opportunity of perceived risk. Regardless of the lack of existing correlation between the two variables in the present study, Gozzi (2008) evinces that the cell phone industry is one that is going to continue to grow, expanding the capabilities of the cell phone. As a result, to continue to put forth efforts in anti-texting while driving campaigns to target individuals who engage in unsafe driving behavior. Based on the survey results, the present study at a minimum demonstrates that there are individuals who do not see texting while driving as a potential hazard. There were several participants who responded to the survey either agreeing, strongly agreeing, or remaining neutral to the statement, "texting while driving is okay," as well as to the statement "texting while driving leads to car accidents."

The current research can be generalized to a broader perspective on unsafe driving behaviors and attitudes toward texting while driving. While no correlation was found in the present study between these two variables, it might be interesting to take this information to build future studies. Perhaps individuals who partake in safe and cautious driving behaviors do not see texting and driving as a major issue, and have a more positive attitude toward it, because they have had limited experiences with consequences that unsafe driving behaviors ensue, such as crashes and tickets. On the other hand, perhaps individuals who do engage in unsafe driving behaviors have had a plethora of negative experiences and recognize the potential hazards of
texting while driving, and as a result associate the idea with their past experiences. In future studies, it might be a benefit to take the idea of background experiences into account, and allow for more open ended answers to questions within the questionnaire rather than only a Likert Scale. Overall, continued research on the topic of attitudes toward texting while driving is suggested to continue. The more research completed on this topic, the more effective advertising and campaigns can be in relation to this issue, which will amount in a decrease of the potential consequences that texting and driving can lead to.
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Appendix A

Survey Questionnaire

1. Do you have a car? (yes/no)

2. Do you drive to campus? (yes/no)

3. How long does it take to get to campus?

4. In the past week, I slowed down when approaching a yellow light (never, rarely, undecided, sometimes, often, always)

5. In the past week, I ran a stop sign (never, rarely, undecided, sometimes, often, always)

6. In the past week I exceeded the speed limit (never, rarely, undecided, sometimes, often, always)

7. In the past year I have received speeding tickets (yes/no)

8. Texting while driving is dangerous (strongly disagree, disagree, neutral, agree, strongly agree)

9. Legal action should be taken against individuals texting while driving (strongly disagree, disagree, neutral, agree, strongly agree)

10. Texting while driving leads to car accidents (strongly disagree, disagree, neutral, agree, strongly agree)

11. Texting while driving leads to tickets by police (strongly disagree, disagree, neutral, agree, strongly agree)

12. Texting while driving can lead to death (strongly disagree, disagree, neutral, agree, strongly agree)

13. It is okay to text while driving (strongly disagree, disagree, neutral, agree, strongly agree)

14. Texting while driving is a serious issue in today’s society (strongly disagree, disagree,
neutral, agree, strongly agree)

15. Gender (Male/Female)

16. Age

17. Race (Asian, Black (non-Hispanic), Hispanic, White (non-Hispanic), Other Background)
Biographical Sketch

My name is Robert Bush and I was born in Abington, PA on June 1st, 1989. I have attended grade school in Upper Dublin, PA, as well as college at Saint Joseph's University in Philadelphia, as well as Rochester Institute of Technology in Rochester, NY. Currently, I am a member of the National Society of Leadership and Success as well as the National Communication Honor Society.