TEXTING AND DRIVING: A LOOK AT SELF-CONTROL, SOCIAL LEARNING THEORY, KNOWLEDGE, AND ADHERENCE TO THE LAW AMONG YOUNG DRIVERS.

by

Fredrick L. Green

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Fredrick L. Green

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APPROVED:

Thesis Chair: Dr. Melissa Petkovsek

Thesis Committee Member: Dr. Ashley Wellman

Thesis Committee Member: Dr. Fran Reddington

ACCEPTED:

Chair, Department of Criminal Justice: Dr. Betsy W. Kreisel

UNIVERSITY OF CENTRAL MISSOURI
WARRENSBURG, MISSOURI
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Abstract

Despite the all the safety features the motor vehicle industry has designed over the years, many car accidents still occur here in the United States. In 2014, the National Highway Traffic Safety Association announced approximately 10% of the total 32,675 people who died on United States highways was due to distracted driving, while over 400,000 were injured in a distracted driving incident. One reason for distracted driving is the use of one’s cellphone during driving. Over the past thirty years the phone industry has made many advances and introduced new ways to communicate with one another. One prominent form of communication, especially with the younger generations is text messaging. This study looks to explain texting while driving behavior through two theoretical frameworks, The General Theory of Crime and Social Learning Theory. In addition, this study explores whether knowledge of the law means adherence to the law. Four hypotheses were created including parental and peer influence derived from Social Learning Theory, self-control derived from the General Theory of Crime, and knowledge of the law to explore if these were significant predictors in texting while driving behavior. All four analyses failed to reach significance. Explanations for these findings and future research are discussed within.
Chapter One

Introduction

The last century has been host to many technological advances. Cellphones are one example of how far technology has come. These devices have given people the freedom to connect with friends near and far, as well as opened the door for business and daily life to be more efficient and practical. According to Arron Smith of the Pew Research Center (2013), 90% of adults in the U.S. own a cellphone or smartphone in 2013, 87% of current or graduated college students own either a cellphone or smartphone, and approximately 78% of children aged 12 to 17 years own a cellphone. Phone sales in the U.S. have increased from 65% of the population in 2004 to 92% of individuals in 2013. Clearly, the use of smart phones and cellphones is a prominent aspect of the American culture.

Another important part of culture within the United States is the privilege of driving. In 2014, the United States had 212 million licensed drivers on the road (Statista, 2015). Approximately 9 million teens obtained their driver’s license in 2014, an increase of approximately 500,000 teens from 2013. Among the 20 to 24-year-old age group, a slight increase of drivers’ licenses were issued. In 2013, 17.58 million individuals had a driver’s license, but in 2014 approximately 17.67 million individuals obtained their license in this age group (Statista, 2015). Driving in the U.S. is viewed as a privilege, meaning those individuals who choose to disobey the laws of the road can pay the consequences of their behavior. In the United States, one of the most vulnerable age groups to have a motor vehicle accident is among those who are 15 to 24 years of age (Center for Disease Control and Prevention, 2014). In 2013, individuals aged 15 to 24 represented approximately 14% of the United States population. In 2000 15 to 24-year-old male drivers were responsible for approximately $9 billion, or 30%, of
total costs of motor vehicle injuries, while females were responsible for approximately $7 billion, or 28%, in total costs concerning motor vehicle injuries. Together these costs add up to approximately $26 billion (Finkelstein, Corso, & Miller, 2006). The $26 billion cost accounts for hospitalization, insurance claims, and productivity loss (Finkelstein, Corso, & Miller, 2006).

Motor vehicle accidents are the leading cause of death among individuals aged 15 to 20 years old (NCSA, 2015; National Highway Safety Association, 2016). One reason can be attributed to distracted driving, specifically, texting while driving. Cellphones over the years have been remarkably adaptive to today’s society. Once thought of as a luxury, the personal phone has now become almost a necessity. Parents want their teens to possess a cell or smart phone in case of emergencies, or in most cases to keep up to date with their activities (Lenhart, Ling, Campbell & Purcell, 2010). One of the most prominent technological advances is the use of text messaging from the phone. Text messaging has become the most preferred method of contact among individuals aged 18 to 24 (Bejarano-Rodriguez, 2014). A text message consists of using the keyboard on the phone to write out a concise message to specific individual(s). Thus, texting allows for messages to be sent in an efficient manner. When individuals use text messaging as a mode of communication while driving, the individual’s attention is diverted to the phone instead of to the task of driving (Gray, 2014; NHTSA, 2010; Quisenberry, 2014). In fact, an individual who reads or sends a text for five seconds at 55 miles per hour is essentially driving the length of a football field blindfolded (NHTSA, 2013). This often can end with people sustaining minor to major injuries or even death. According to the NHTSA (2015), 3,179 young drivers died in car accidents in the United States in 2014.

The popularity of texting and subsequent danger of texting while driving has impacted legislation in the United States. Currently, legislation in 46 States prohibits people of all ages
from texting and driving behavior. However, Missouri’s law states that only individuals 21 years of age or younger may not text and drive. While this law can help curb the number of accidents, it does not attend to the most vulnerable drivers (Arnett, 2002), who are also the most likely age bracket to use texting (Hosking, Young, & Regan, 2009). There is a current debate in the Missouri legislature for a ban on texting and driving for people of all ages. Research on texting and driving may influence legislation. There is a plethora of literature examining texting and driving among college-age individuals, but there seems to be a lack of literature focusing on high school-age individuals. This thesis will attempt to help fill this gap by examining the factors which influence texting and driving behavior among high school and college students between the ages of 16 and 21.
Concerns of distracted driving, particularly among young people, has grown since the prevalence of cellphone use has grown in recent years (Hosking, Young, & Regan, 2009). Research from Queensland, Australia revealed that in 2009, approximately 21.8% of all fatalities can be attributed to drivers between 17 to 24 years old, while this group only comprises approximately 12% of the population (Scott-Parker, Watson, King, & Hyde, 2012). Despite the numerous attempts to counter this issue, policies, fear campaigns, training for novice drivers, and graduated driver’s license programs, the novice drivers still experience a greater risk of being involved in an accident or fatally wounded in car accidents more than older, and more experienced drivers (Haighney, Taylor, & Westerman, 2000; Hosking, Young, & Regan, 2009; Mazza, Ranney, Watson, & Wightman, 2004; Scott-Parker, Watson, King, & Hyde, 2012; Young & Regan, 2007). Over time, legislators have championed laws which exist to protect people from themselves. However, in some instances the laws are not well known. For example, according to the Missouri legislature

“except as otherwise provided in this section, no person twenty-one years of age or younger operating a moving motor vehicle upon the highways of this state shall, by means of a hand-held electronic wireless communications device, send, read, or write a text message or electronic message.” (Missouri Revised Statutes, Chapter 304 Traffic Regulations, Section 304.820.1)

Therefore, many drivers twenty-one years of age or younger within this state may not realize the laws concerning texting and driving within Missouri and continue behavior that is considered illegal.
This literature review will provide an overview of research examining texting and driving, including reasons why people engage in the act of texting and driving. Additionally, this chapter will review the current standard regarding texting and driving legislation at the national level, as well as focus on Missouri law.

**Distracted Driving**

One of the most impactful technological advances of the 21st century is the cellphone. The concept of the cellular phone began as radio car phones in 1947. However, it was not until 1956 when car phones were first utilized (University of Florida, 2004). In 1992, cellphones were becoming more accessible to the general public. That same year Neil Papworth sent the first text message saying “Merry Christmas” (McVeigh, 2012). Since this time, cellphone usage has increased substantially. The widespread use of cellphones can be attributed to their convenience and efficiency, which allows people to efficiently connect with one another. Although cellphones can be useful, cellphones can be a great distraction while participating in other activities, like driving.

Distracted driving, defined by the NHTSA under the United States Department of Transportation, is “any activity that could divert a person’s attention away from the primary task of driving” (NHTSA, 2012, p. 1). There are three ways in which someone can be distracted from driving: visual, manual, and cognitive (Chen, 2013). Visual distraction is taking one’s eyes from the roadway (Benden, Smith, Henry, & Congleton, 2012; Bejarano-Rodriguez, 2014). Manual distraction is defined as taking the hands from the wheel. Cognitive distraction is defined as taking the mind away from the task of driving. Only one form of distraction can cause a distracted driving accident, but cellphones provide a particularly dangerous situation, as text messaging can engage all three types of distraction.
Visual and manual skills necessary for driving are straightforward, and therefore, it is easy to understand why a distraction which leads a driver to let go of the wheel or take their eyes off the road may result in an accident. However, more explanation is necessary to fully understand why cognition is an important factor in driving. Proper cognitive attention is necessary in order to perform a host of everyday skills or tasks, such as cooking or playing a sport. Driving is another activity in which individuals need to focus to safely arrive at their chosen destination. Modern technology such as a hands-free option to communicate while driving was created to reduce manual and visual distraction (e.g., Bluetooth devices). However, use of this technology has been shown to mentally distract drivers (NHTSA, 2015). Surprisingly, research has demonstrated that use of hands-free devices may not reduce cognitive distraction at all, against common assumption. A study by Haighney and colleagues (2000) revealed that hands-free technology does not allow the driver any added advantage over those individuals using hand held devices. In addition, Strayer and colleagues (2003) found drivers using hands free or hand held devices in conversation were just as likely to miss traffic signals as those who used their cellphone by hand. According to Mazza, Ranney, Watson, and Wightman (2004), talking on a mobile device while driving imposes an increased demand for drivers whether they were using a hands-free option or hand-held device. Mazza and colleagues (2004) also found individuals utilizing hands-free technology compared to hand-held devices tend to overestimate the ease of hands free technology. Therefore, individuals utilizing hands-free technology are just as likely to be in an accident as those who utilize a hand-held device.

Research demonstrates that driving requires every sense of a person to be used concurrently in order to ensure safety (Young & Regan, 2007). Theses senses include physical and sensory skills, as well as cognitive skills. Despite the complexities, individuals will engage
in other distracting behaviors while driving. Behaviors such as eating, applying makeup, and talking with a passenger are included as distracting behaviors. With the advent of the cellphones, along with other technological advances such as global positioning systems, driver distraction is common (Young & Regan, 2007). In fact, research conducted by the National Highway Traffic Safety Administration (NHTSA, 2015) stated distracted drivers make up approximately 25% of police-reported crashes.

Distracted driving habits could present several safety issues that either lead to serious injuries or even death. The National Highway Traffic Safety Association (2009) reports that in 2008 in the United States 5,870 people were killed and 515,000 people were injured in police-reported crashes, in which at least one form of driver distraction was included on the official report. In a summary of statistical findings published by the National Highway Traffic Safety Association (2015), the number of individuals visibly manipulating their cellphones or hand-held devices increased from 1.7% to 2.2% from 2013 to 2014, a statistically significant change. Collection and estimation of this data is recorded through the National Occupant Protection Use Survey (NOPUS) (NHTSA, 2015). In the United States NOPUS is the only observational survey method available that can track driver electronic device use. Manipulation of hand-held devices and cellphones included behaviors such as looking up travel directions, checking email, looking up calendar appointments, surfing the internet, dialing on the device, participating in games, talking on the device, and texting. Research has shown that people engaging in text and drive behavior are 23 times more likely to be involved in a car accident (NHTSA, 2014). The age group with the greatest percentage of distracted drivers involved in fatal car crashes was the under 20 group, at 10% of drivers (NHTSA, 2015). According to Pew Research (2015), the use of text messaging is the preferred method of smartphone owners. Ninety-seven percent of cellphone owners utilize
this feature on their devices (Pew Research, 2015), and as of December of 2014, 169.3 billion
text messages were sent out in the United States, Guam, Puerto Rico, and The Territories (Pew
deaths and 431,000 injuries were attributed to driving distracted due to texting and driving
behavior (NHTSA, 2015). Despite laws being enacted to protect young drivers from texting and
driving behavior, young drivers still engage in the act. Therefore, the call to strengthen laws and
look at existing literature may improve to help this issue.

In a study conducted by Nelson, Atchley, and Little (2009), young drivers were surveyed
about their cellphone use while driving and the perceived risks associated with this behavior. All
of the participants reported talking on their cellphone at least some of the time, and 72% of
participants text message while driving despite laws being in place to prohibit this behavior.
Participants who reported answering or initiating phone calls or text messages and later saw the
behavior as risky did exhibit changed behavior.

Pew Research (2015) recently conducted a study to acquire knowledge about texting
while driving behavior, as well as gain insight as to why young drivers use their cellphones while
operating a vehicle. Participants were surveyed twice a day for a week and 100% of participants
within the age range of 18 to 29 utilized the texting feature at least once. This study also
collected data regarding the reasons why young people utilize their cellphone. The primary
reason reported was to avoid boredom (93%), followed by to avoid others around them (47%),
and to obtain directions (57%). According to Smith (2011), approximately 95% of cell or
smartphone users between the ages of 18 and 29 use the text messaging feature on their phones.
This age group is projected to send or receive almost 88 text messages daily. Inside the age range
of 18 to 24, use of text messaging dramatically increases – approximately 110 texts are being
sent or received daily, which is double the amount of texts 25 to 34-year-olds send or receive at 41.8 texts per day (Smith, 2015). Reports by Nielsen (2010) and Lenhart (2012) indicate that teenagers aged 12 to 17 text approximately seven times per hour, resulting in about 60 texts per day and 3,417 times per month. In these reports, girls text approximately 3,952 times a month, whereas boys text approximately 2,815 times a month. Considering the level of distraction afforded by texting while driving, the rapid growth of young drivers coupled with the sheer number of texts sent daily by this age group seems to indicate that texting and driving accidents are inevitable. In 2014, Missouri had a population of 6,063,589 people and had 696 fatal car crashes killing a total of 766 individuals (IIHS, 2016). In 2014, the national average for the United States is 10.2 deaths per 100,000 drivers, Missouri’s rate is well above this at 12.6 per 100,000. For a state-to-state comparison, the driving-deaths rate in Illinois, which has stricter laws for phone use while driving, is 7.2 deaths per 100,000 people. Unless policy changes are made, Missouri is at risk of continuing to see young, innocent lives lost.

**Legal Issues**

The act of talking on a cellphone while driving has drawn attention from state governments, therefore, legislation was passed in an attempt to keep people safe and abstain from the use of using a cellphone while operating a motor vehicle. In all, 14 states as well as the District of Columbia have now passed legislation prohibiting drivers of all ages from talking on cellphones while driving. The State of New York has gone so far as to ban the use of hands-free devices while driving. In addition, 46 states currently have legislation banning texting and driving (NHTSA, 2015). Four other states have enacted laws prohibiting drivers from talking on their cellphones while driving under specific circumstances, such as an age limit. Unfortunately, even though laws exist to help keep people safe, much of the public still talk and drive. A study
by AT&T revealed that 98% of their sample of drivers who own a cellphone were aware of the
dangers of texting while driving. Despite knowing the dangers of this behavior approximately 75%
of drivers still talk and text while driving (Associated Press, 2014). According to the National
Safety Council (n.d.), approximately 1.6 million car crashes happen every year, some of which
was attributed to talking while driving. The risks of young or novice drivers are even higher for
those who are between the ages of 15 to 20 (NHTSA, 2015). Ten percent of young drivers killed
in car accidents are attributed to driving while distracted. Additionally, drivers in their 20’s make
up 27% of the fatally wounded in distracted driving accidents. Despite the growing trend of
states moving to prohibit talking on a cellphone while driving, Missouri still allows for people of
all ages to talk and drive, except for those who operate school buses and commercial vehicles
(NHTSA, 2015).

Missouri’s law pertaining to texting and driving compared to other states is relaxed. Over
the years as texting became more popular, state governments became aware of the dangers and
set out to enact laws to help protect citizens from being involved in a driving accident. Currently,
only four states remain that do not have a law in place to prohibit texting and driving which
applies to all age groups: Arizona, Texas, Missouri, and Montana. However, Missouri and Texas
do have laws in place which only apply to novice drivers (Governor’s Highway Safety
Association, 2016). The current law for Missouri states anyone equal to or less than 21 years of
age must abstain from texting and driving. This law was passed in 2009 to help curb the number
of accidents and deaths which were occurring on Missouri highways.

Approximately 4.2 million drivers are licensed in Missouri, which ranks 18th in the
nation (Statista, 2015). In Missouri, young drivers are permitted to begin to practice driving with
a licensed driver at the age of 15 (Missouri Department of Revenue, n.d.). These teenagers are
able to learn the rules of the road for a year. Then they can begin driving alone after passing a written test and field test. Driving habits begin with the parents or teachers of the young student. This helps novice drivers to learn proper and safe techniques to operate a motor vehicle. Driving safety is a paramount, particularly recently, due to the number of people on the road, particularly coupled with the growing population of individuals with cellphones. In 2005, before texting and driving laws existed in Missouri, drivers under the age of 21 were involved in 283 fatal crashes and 14,316 injury crashes, killing 322 total people and injuring 22,541 (MHPSAC, 2006). A marked decrease in driving incidents, injuries, and deaths occurred after Missouri enacted laws in 2014 to discourage texting and driving for novice drivers. In 2014, only 118 individuals under the age of 21 were involved in fatal car crashes, killing a total of 139 and injuring 13,081 people in traffic accidents (Missouri Highway Patrol Statistical Analysis Center, 2013). This can be explained in many ways, including the fact that the current law may be helping to decrease the number of accidents on the road. Despite the decrease of accidents over this, young drivers still engage in distracted driving, resulting in many injuries and deaths. In Missouri during 2014, there were 50 driving deaths among 15 to 25 year olds, and 711 serious injuries on Missouri roadways due to inattentive drivers (MODOT, 2015). In comparison, during the same year Nebraska had 141 total accidents attributed to driver inattention due to a cellphone with 1 death being attributed to cellphone use among 15 to 19 year olds. Kansas experienced 531 accidents attributed to cellphone use and 259 of those accidents were among 15 to 24 year olds, and, 6 deaths and 179 injuries were reported (KDOT, 2015). Compared to similar, Midwestern states, Missouri has a higher frequency of driving injury and death attributed to inattentive drivers, particularly among the new-driver population. Clearly, laws regarding texting and driving permissibility impact driving safety.
In the past year, several pieces of legislation concerning texting and driving were sent to the Missouri House and Senate (SB 569, 2016; HB 1377, 2016; HB 1986, 2016; HB 1423, 2016); which included a ban for texting and driving for all ages. These previous distracted driving bills have been failed for being “to general”, according to State Senator Pearce of the Missouri Senate (Handsfreeinfo.com, 2016). Discussions in the state legislature regarding texting and driving have continued, but no action has taken place to enact a new law as of yet.
Chapter Three

Theoretical Explanations

Social Learning Theory

Researchers have utilized several theories to attempt to explain risk-taking behaviors. One such theory is social learning theory. Differential Association Theory was created by Edward Sutherland (1939, 1947) and posits that through interaction with society, individuals will learn values, attitudes, techniques, and motives for criminal and deviant behavior (Burgess & Akers, 1996; Cressey, 1954; Matsueda, 1988). According to Sutherland, Differential Association is a learning theory based on nine propositions detailing how behavior is learned, which introduce three concepts, including normative conflict (how one is to act in specific situations), differential association (learning comes from interaction with others), and differential group organization (a set of definitions cultural in nature that defy the law). The theory seeks to explain crime on three levels: society, the individual, and the group.

The nine propositions within Sutherland’s Differential Association Theory state that criminal behavior is learned through communication, and this learning takes place within personal groups in which the individual is involved. Additionally, when criminal behavior is learned the individual will not only learn criminal techniques (e.g., a thief may learn how to pick locks), but will also learn motives, drives, attitudes, and rationalizations for the specific types of crime the individual participates. The fifth and sixth propositions are the cornerstone of Sutherland’s Differential Association Theory. The fifth proposition states that legal codes either favorable or unfavorable toward criminal activity, are learned through motives and drives of the individual. Consequently, the sixth proposition states an individual becomes delinquent when definitions favorable to criminal behavior outweigh definitions unfavorable to violating legal
codes (Burgess & Akers, 1966). For example, under Differential Association Theory, if a young driver were to interact consistently with peers who engaged in texting and driving, the individual would be subjected to definitions which encouraged violating the law, and would be more likely to commit a criminal act (e.g., texting while driving), due to exposure to the definitions of the group, which promote violation of the law.

In the 1960’s Ronald Akers, a professor at the University of Florida, began expanding on Sutherland’s Differential Association Theory and created Social Learning Theory (Pratt et al., 2010). According Pratt and colleagues (2010), Akers did embrace Sutherland’s first proposition that states criminal behavior is learned through social interaction. The basis for this proposition would be best stated that individuals within society have differing exposures to behavioral and normative patterns through their interaction with other people and social groups – in other words, ‘differential associations’. Additionally, Akers (2001) states differential association molds the individual’s definitions, stating “one’s own attitudes or meanings that one attaches to given behavior” (p. 195). Akers also states the definitions learned may be very broad or specific to violation of the law or adherence to the law. Akers additionally adds definitions can also be negative (i.e., opposing criminal behavior), positive (i.e., finding criminal behavior as desirable), or neutralizing (i.e., giving permission).

However, unlike Sutherland’s Differential Association Theory, Akers accepts the role of modeling (Pratt et al., 2010). Modeling in psychological terms is described as learning through observation. Akers (2001) believed crime, most importantly when first initiated, can be influenced through imitation, which Akers defined as “the engagement in behavior after the observation of similar behavior in others” (p.196). In reaction to this alteration to Sutherland’s theory, Akers introduces the concept of differential reinforcement, which is defined as “the
balance of anticipated or actual rewards and punishments that follow or are consequences of behavior” (p. 195). What this essentially means is that acts (i.e., behaviors) which are reinforced through reward or through avoidance of displeasure, are repeated, whereas behaviors that evoke punishment will less likely be repeated. Akers also states that while reinforcement can be a physical process, important reinforcements of behavior are typically social in nature (e.g., originating from one’s own social group). Therefore, when an individual is part of a group that reinforces deviant behavior, differential association alongside pro-criminal definitions and patterns of criminal behavior will remain stable (Akers, 1996). Akers contends that these fluctuations can evolve from the same normative and cultural system, and do not require any existence or participation in a deviant subculture that is conflicting with society as a whole (Akers, 1996).

Akers revised Sutherland’s theory on definitions, motives, drives, rationalizations, and attitudes. Sutherland viewed motives and drives as dependent variables, caused by definitions or as variables that intervene between learned definitions and criminal acts. However, under Aker’s Social Learning Theory, Akers (1994) conceptualized definitions differently by stating:

“definitions favorable to crime and delinquency do not “require” or strongly motivate action…Rather, they are conventional beliefs weakly held that they provide no restraint or are positive or neutralizing attitudes that facilitate law violation in the right set of circumstances” (p. 98).

Akers goes on to propose fluctuations exist between how people hold to deviant and prosocial definitions, and the extent to which these beliefs and behaviors are reinforced (Akers, 1996).

Social Learning Theory (Akers 1985; Burgess & Akers, 1966) introduces definitions that are learned through the socialization process. These definitions work less as directional
motivators than as facilitators and inhibitory descriptive stimuli, which are stimuli that can cue a specific behavior as appropriate and will have the chance to be rewarded or inappropriate and likely to be punished (Akers, 1996). Essentially, what this means is that reinforcement and punishment of behavior is based on direct or vicarious previous reinforcement from an individual’s past.

To summarize Akers’s theory in the context of the current study, close relationships between the individual and peers or groups can reinforce specific driving behaviors through administration (or the absence of administration) of punishments and reinforcement (also known as rewards) (Scott-Parker, Watson, King, Hyde, 2012). Dependent upon the close relationships of the individual, he or she can act accordingly and perform conforming driving behaviors, or perform deviant driving behaviors due to what the individual has observed throughout their life (Scott-Parker et al., 2012).

As Akers (1966) proposed, criminal behavior can be learned from groups among society. Akers’s (1966) theory also contends definitions, attitudes, rationalizations, and motives all can play a role in an individual’s choices to abstain from criminal behavior or can influence criminal behavior. One such group an individual can learn from is their peers. Peers within one’s lifetime may influence the individual in various ways, including deviant and criminal behavior such as drug use, smoking, and driving recklessly.

In a study concerning adolescent drug and drinking behavior Akers, Krohn, Lanza-Kaduce, and Radosevich (1979) examined differential association, differential reinforcement, definitions, and imitation on adolescent teens who were asked about their drinking and drug behavior. Reasons why this particular research (drug and alcohol use among adolescents) was chosen was due to the lack of existing literature developing and testing general theoretical
explanations of behavior. Akers and colleagues (1979) state that peer and parental influence are highly important variables to adolescent drug and alcohol use. According to Akers and colleagues, differential association, differential reinforcement, definitions, and imitation account for 68% of the variance in marijuana use and 55% of the variance in alcohol use. Consequently, Akers and colleagues agreed that social learning theory is an applicable theory for deviant and criminal behavior in regards to drug and alcohol use among adolescents.

Social Learning Theory has also been implemented in studies concerning adolescent smoking. Krohn, Massey, and Skinner (1985) looked to explain adolescent smoking behavior through Social Learning Theory among junior and senior high students. Krohn and colleagues (1985) applied Akers’s Social Learning Theory to account for students either quitting or maintaining a smoke free lifestyle and whether students were aided by their peers to begin smoking. Social learning theory as mentioned above is comprised of differential association, a group’s direct/indirect influence on a person, differential reinforcement, behavior exhibited is determined by the equal balance of rewards and punishment, imitations, also known as vicarious learning, and definitions, which can be positive, negative, or neutral attitudes and speech of behavior that can be good or bad, also right or wrong. These definitions can then be taken as a cue to exhibit a specific behavior (Krohn et al. 1985). Results from this study were mixed about explaining adolescent smoking behavior. On one hand Social Learning Theory was effective explaining cessation of smoking behavior among adolescents. However, Social Learning theory was not able to explain the initiation of smoking behavior among adolescents (Krohn et al. 1985).

Swanno (2009) implemented Social Learning Theory as a predictor of seat belt usage among 16 to 24 year olds. According to Swanno, for the past decade 16 to 24 year olds were consistently ranked number one in automobile accident fatalities due to choosing not to wear a
seatbelt. Swanno (2009) states the federal government declares a hands-off policy when it comes to state legislation on seat belt laws. Due to this policy there is a lack of consistency regarding seat belt requirements among states in regards to weight, seated position, and age (Durbin, Smith, Kallan, Elliot and Winston, 2007; IIHS, 2007; NHTSA, 2005). Other complications about seat belt laws have been that state governments now decide individually how to enforce seat belt laws either through primary enforcement, where an officer can issue a summons, or through secondary enforcement, where the officer requires a separate violation before issuing a citation. One other consequence of this “hands off” policy is in regards to seat belt use on school buses. Some states allowed for the installation of seat belts on buses, but allow for regulations to be determined by individual school districts (NHTSA, 2007). Due to these complexities in seat belt laws, confusion for parents, the primary influence of children, is likely to be present. Therefore, society and parents play a pivotal role in whether the child learns to wear a seat belt or not.

However, in adolescence, peer influence becomes more influential as individuals spend more time with peers than with parents. Social Learning Theory posits that influence from peers can either mollify or reinforce learned behavior. Therefore, Swanno (2009) contends that parental influence, peer influence, enforcement of laws, and the lack of conformity between state seat belt laws, are predictors of seat belt usage among the 16 to 24 year old population. Results of Swanno (2009) suggest 16 to 24 year olds are wearing their seatbelts. Within Swanno’s study she found that of both student populations (college and high school), 75% of drivers wear their seatbelt “all the time” as the role of a driver, nearly 64% of participants responded they wear their seatbelt “all the time” as a passenger, and 86% wear their seatbelt the last time they were in a vehicle. Swanno (2009) also suggests gender differences exist among seatbelt use stating that males wear their seatbelt as a driver 65.9% of the time while females wear their seatbelt 85.1%
of the time as a driver. However, females as a passenger wear their seatbelt 61.5% of the time while males as a passenger wear their seatbelt approximately 67% of the time. Swanno (2009) concludes some predictors such as parental influence, peer influence, and risky behavior can account for non-usage of a seatbelt among young drivers. However, not one of these predictors influences every outcome.

According to Bejarano-Rodriguez (2014), teen drivers may learn to engage in risky behavior when driving with friends as passengers. Driving habits have been found to change among young male drivers when operating a motor vehicle with their parents as passengers compared to driving with their peers (Williams, Ferguson, & McCartt, 2007). Researchers have found the legal age is a determining factor among passenger roles to either aid or distract a driver (Ouimet et al., 2010; Williams et al., 2007). For example, the risk of car accidents decreases among drivers 30 years of age or older who drive with passengers. However, the presence of young passengers among 16 to 19-year-old drivers increases the crash risk (Ouimet, et al., 2010; Williams, et al., 2007). Under Akers’s theory, one could argue that due to the conforming behavior exhibited by the older group, the older group has motives, definitions, attitudes and rationalizations that conform to the law. On the other hand, young drivers are more likely to conform to the group belief when exposed to their peer group (i.e., when they have peers as passengers) and behave according to the definitions, attitudes, rationalizations, and motives to gain social acceptance and other reinforcements. Therefore, if the group has a pro-criminal definition toward texting while driving, individuals are more likely to hold to the definition and engage in the behavior.

Friends and family were also found to have an influence on driving behavior (Scott-Parker et al., 2007). During the 2007 study with Scott-Parker and colleague’s individuals were
found to have experienced social rewards, like praise and a higher status within the group, for risky driving no matter the age, gender, or license. For example, friends would encourage while engaging in risky driving behavior and drivers reported feeling pleasure after driving faster (Scott-Parker et al., 2012). Young drivers are more susceptible to peer pressure compared to adults (Chassin et al., 2004; Simons-Morton, Lerner, & Singer, 2005; Steinberg, 2008; Steinberg & Monahan, 2007) the need for teens to attain social acceptance among their peers may contribute to the risk-taking behavior of young drivers (Williams, et al., 2007). Examples of Adolescent risk-taking such as speeding (Ulleberg, 2001), refusing to wear a seat belt (Jonah, 1986), drinking and driving (Steinberg, 20008), and texting while driving (Bejarano-Rodriguez, 2014).

In conclusion, findings among studies which incorporate Social Learning Theory as a theoretical framework have been found to have mixed results, but has gained general acceptance among researchers (Akers et al., 1979; Krohn et al., 1985; Swanno, 2009; Bejarano-Rodriguez, 2012). Findings support that peer and parental influences are important variables that help young individuals shape their behavior through differential association, differential reinforcement, imitations, and definitions. General limitations of Social Learning Theory studies include weaknesses in measures (Krohn, 1985), and changes in definitions over time, a small sample size within a study, and self-report measures. Literature within studies have also mentioned that risk-taking behavior is related to age and sex. Young males are especially prone to risk taking behavior compared to females. Only one existing study has incorporated texting while driving behavior and Social Learning Theory to date (Bejarano-Rodriguez, 2014). The current study attempts to expand the reach of Bejarano-Rodriguez, particularly by expanding the population
studied. This study did cover the issue of texting and driving, only college students participated, while the current study looks at both college and high school age participants.

*The General Theory of Crime*

The General Theory of Crime was created by Gottfredson and Hirschi (1990). This theory was developed to explain all forms of criminal and deviant behavior, including behaviors which are legal, but are deemed risky and result from a lack of self-control, such as cutting class and promiscuity. Other analogous behaviors include risky sexual behavior, excessive drinking, and gambling (Quisenberry, 2014).

Gottfredson and Hirschi posit that self-control is developed throughout the first eight to ten years of an individual’s life (Gottfredson & Hirschi, 1990). After this period of time, the individual's lifespan self-control is constant. The primary contributing factor to the development of low self-control is connected to ineffective parenting. Ineffective parenting consists of a lack of proper punishment when deviant or criminal behavior is exhibited by the child. According to Gottfredson and Hirschi (1990), there are three conditions parents must provide to adequately raise their child. These include monitoring the child’s behavior, recognizing deviant behavior, and punishing deviant behavior consistently. Children who are not parented in this manner develop low self-control. In other words, parents need to show affection or show investment in the child. Attachment to the child is paramount during the first eight to ten years of the child’s life. In a study by Glueck and Glueck (1950) compared to fathers of delinquent children to fathers of non-delinquent children were two times as likely to be warmly disposed toward their sons and one-fifth as likely to be hostile toward them. In the same sample population 28 percent of mothers of delinquents were characterized as indifferent or hostile toward the child as compared to only four percent of mothers of non-delinquent children.
Levels of self-control vary among individuals in the population, as a result of parenting practices. Young individuals raised ineffectively prior to 10 years of age have a higher chance to develop low self-control compared to individuals with a proper upbringing (Muraven, Pogarsky, Shmueli, 2006). Individuals who resist temptation (e.g., peer pressure), possess strong self-control. Individuals with high self-control are also better at recognizing the costs associated with misbehavior (Tittle, Ward, & Grasmick, 2003; Gottfredson & Hirschi, 1990). Those individuals with low self-control demonstrate the opposite behavior, and will engage in criminal activity if they perceive the act as a gratifying experience. The General Theory of Crime adopts the classical view that humans will naturally seek pleasure and try to avoid pain and punishment in the process (Turner, Piquero, & Pratt 2005; Gottfredson & Hirschi 1990). Since criminal or deviant acts are described as “easy or simple” (Gottfredson & Hirschi, 1990, p. 89), criminal behavior is often viewed by individuals with low self-control as a way to gratify desires.

The General Theory of Crime suggests that levels of self-control are also connected to parental criminality, family size, single-parent families, and mothers who work outside the home (Gottfredson & Hirschi, 1990). The theory states there is a connection between parents’ proclivities and their offspring’s level of self-control. According to the theory, parents who participate in criminal behavior lacked socialization opportunities as a child. Since these parents lacked socialization skills as a child, the offspring of these parents will likely have the same lack of opportunities. Consequently, these children will more likely commit criminal acts, due to low self-control.

A study by West and Farrington (1977), revealed that approximately five percent of the families in a community accounted for almost 50% of convictions within the entire sample. To achieve this concentrated amount of crime within a family it stands to reason siblings of
offenders are just as likely to commit criminal acts (Gottfredson & Hirschi, 1990). Reasons why children, who have parents participating in criminal acts, are vulnerable to crime themselves is due to how the theory of self-control is operationalized. Under this theory criminality is not something parents produce, the assumption that criminal activity is something you work to avoid (Gottfredson & Hirschi, 1990). Parents with criminal records are not thought to encourage crime in their offspring; in fact, they are thought to be just as disapproving of criminal behavior as parents who do not possess a criminal record. Despite parents showing frustration when their offspring commit criminal or deviant behavior, it is not enough to show great effort was given to stop the behavior (Gottfredson & Hirschi, 1990). To summarize, if criminal behavior is conforming to short-term rewards, while child-rearing is conforming to long-term rewards, there is little expectation that parents lacking self-control will be skilled enough to instill self-control in their offspring (Gottfredson & Hirschi, 1990).

Keeping with this theme, research has routinely indicated that guidance of delinquents in families where parents possess a criminal record tend to be relaxed, inadequate, and poor. Consequently, punishment is often simple, short in duration, and insensitive (i.e., yelling, screaming, hitting, threats that have no weight) (Gottfredson & Hirschi, 1990). Another key factor is recognition of criminal or deviant behavior. For example, if a parent was notified about their child being suspended from school the parent can absolve the child’s behavior by blaming the school teacher. Other parents will discount their child’s behavior due to the case that charges are unproved, therefore a punishment would not be justifiable (Gottfredson & Hirschi, 1990). Since recognition plays a key role in determining an individual’s self-control level it is important for parents to know what constitutes deviant behavior. Those parents who see deviant behavior and immediately correct the behavior will likely see the child’s self-control level rise while those
parents who either simply do not acknowledge the deviant behavior or refuse to correct the behavior will ultimately allow for low self-control behavior to manifest.

Self-control theory also posits individuals with low self-control tend to respond to the “here and now” (Gottfredson & Hirschi, 1990, p. 89), meaning individuals with low self-control want instant gratification, whereas individuals with high self-control have the ability to deny immediate gratification. Gottfredson and Hirschi (1990) also state individuals with low self-control seek acts that entail excitement, risk, and thrills. Therefore, individuals with low self-control tend to be physical, adventuresome, and active. However, individuals with high self-control tend to be cautious, cognitive, and verbal.

Variables that are popular among criminological theorists such as strain, morality, peer influences, social disadvantages, cultural aspects, and social bonds have little influence in self-control theory. Self-control theory supersedes other theories because it is thought to explain post-childhood misbehavior (Tittle, Ward, & Grasmick, 2003). To explain why some individuals are more likely to engage in criminal or deviant behavior, Gottfredson and Hirschi (1990) state individuals who possess a low propensity for criminal behavior possess high self-control, if individuals possess a high propensity for criminal behavior they will exhibit low self-control and possibly engage in criminal or deviant behavior. The ultimate outcome for the theory of self-control states there should be a negative correlation between self-control and deviant behavior (i.e., individuals with low self-control are more likely to exhibit a high rate of misbehavior) (Tittle et al. 2000).

There are six elements or dimensions of self-control within this theory. They include impulsiveness, preference for simple tasks over difficult ones, seeking high risk activities, favorable to physical activities over mental activities, self-centered, and possession of violent
tempers (Gottfredson & Hirschi, 1990). What this means is individuals with low self-control are likely to seek easy opportunities to gratify themselves through criminal or deviant acts, such as “money without working, sex without courtship, and revenge without court delays” (Gottfredson & Hirschi, 1990, p. 89). Criminal acts can be risky and allow the individual to feel thrilled while committing the illegal act, and are thus appealing to individuals with low self-control. For example, speeding (Jones & Quisenberry, 2004), not wearing a seatbelt, driving while intoxicated (Jones & Quisenberry, 2004; Keane, Maxim, Teevan, 1993), and driving while texting (Gray, 2015; Quisenberry, 2014) all fit under this model of risky behavior.

Current and previous research has found support for the General Theory of Crime to explain criminal or deviant behavior. For instance, Under Gottfredson and Hirschi’s General Theory of Crime (1990) low self-control accounts for "all crime, at all times": acts ranging from vandalism to homicide, from rape to white-collar crime (p. 117). A growing amount of empirical literature has given moderate support for the theory in regards to low self-control is a predictor of many criminal and noncriminal behaviors (Arneklev et al., 1993; Brownfield & Sorenson, 1993; Silverman & Creechan, 1995; Grasmick et al., 1993; Keane et al., 1993; Kennedy & Forde, 1995; Polakowski, 1994).

According to LaGrange and Silverman (1999) one aspect of this general theory missing from the literature is accounting for common correlates to crime such as gender. Therefore, LaGrange and Silverman (1999) empirically tested The General Theory of Crime to explain gender differences in delinquency. As noted from previous empirical research gender differences in criminal behavior are acknowledged. According to Gottfredson and Hirschi (1990:145) males "always and everywhere" offend more often than females. Recently, reasons for these constant differences have been under some debate. Two questions have been centered around this debate:
why females are substantially less delinquent/criminal than males; and whether females, when they are delinquent/criminal, act for the same reasons as males (Broidy & Agnew, 1997; Chesney-Lind & Shelden, 1998; Ensminger, et al., 1983). According to the literature, prominent theorists (Adler, Adler, & Levins 1975, 1977, 1981; Simon, 1975, 1979) note constant gender differences in criminal and delinquent behavior differences to opportunity. Since females were traditionally assigned to “feminine” roles within the home, or closely watched at work and school, were less likely to engage in criminal or deviant acts such as “drinking, stealing, gang activity, and fighting” (Adler, 1975:95) due to the lack of opportunities to misbehave. However, theorists contend that if females were given the same opportunities as males female deviant and criminal behavior would increase.

Research concerning risky driving behavior has suggested that gender differences exist in regards to risk taking behavior. For instance, in a study conducted by Lonczak, Neighbors, and Donovan, (2007) males reported more driving citations and injuries than females. However, results suggest females were positively associated with drinking frequency and driving anger compared to males. In LaGrange and Silverman’s study (1999) junior high and high school children were chosen to participate in a study examining self-control, sex differences, and deviant behavior. This study sought to explore gender differences in self-control, hypothesizing males would exhibit traits and behaviors of low self-control more so than females. In addition, this study hypothesized males were more likely to have opportunities to behave in a deviant or criminal manner. Both hypotheses were supported by the analysis. Additionally, the study found females, had significantly different reports of parental/adult supervision opposed to males. Finally, LaGrange and Silverman (1999) suggest male and female patterns are dependable between measures of low self-control and reported delinquency. Predilection for risk seeking and
impulsivity were found to be key predictors of increased delinquency. Also noted within the study was consistency with the theory that teens in the sample who reported smoking and drinking behavior were also significantly more likely to engage in delinquency.

In Keane, Maxim, and Teevan’s research (1993) The General Theory of Crime was hypothesized to explain that individuals with low self-control will engage in risk taking, criminal, and impulsive behavior. Keane, Maxim, and Teevan (1993) found support that levels of self-control were associated with drinking and driving behavior. Additionally, the study states individuals who recorded low blood alcohol content (BAC) levels were more likely to wear their seatbelt, and were less likely to drive if there was a high probability of being apprehended for drinking and driving. This means those with a low BAC were less risk-taking and possessed a higher self-control level. In a study conducted in Canada by Forde and Kennedy (1997) The General Theory of Crime in conjunction with Routine Activities Theory was utilized to seek if self-control levels were associated with imprudent behaviors such as smoking, drinking, speeding, and refusing to wear a seatbelt. Despite the criticisms Forde and Kennedy state that Grasmick et al. (1993) and Arneklev et al. (1993) were able to find support that low self-control was associated with drinking and gambling behavior. However, they were not able to find an association between low self-control and smoking. Forde and Kennedy (1997) went on to replicate Grasmick, Tittle, Bursick, and Arneklov (1993) and Arneklov et al. (1993) studies, but extend the study by including self-control, imprudent behavior, and crime into one model. Forde and Kennedy (1997) contend that The General Theory of Crime will be improved with the addition of Cohen and Felson’s (1979) Routine Activities Theory. Forde and Kennedy (1997) contend by adding Cohen and Felson’s Routine Activities Theory (1979) they can effectively address risk seeking behavior and include a measure of opportunity to offend. Results showed
The General Theory of Crime alone did not support any significant findings in regards to low self-control and criminal behavior. However Forde and Kennedy did find significance in the reformulated theory which combined The General Theory of Crime with Routine Activities Theory.

Gray (2015) found that texting while driving behavior was associated with low self-control, and correlated with other dangerous driving behaviors such as drinking and driving and choosing not to wear a seat belt. Curiously, a majority of drivers were found to admit to texting while driving and acknowledge that the behavior is dangerous, and will likely lead to a motor vehicle accident (Atchley, Atwood & Boulton 2011; Atchley, Hadlock and Lane 2012; Harrison 2011; Hurts et al. 2011; Lehner et al. 2008; Nelson, Atchley and Little, 2009; O'Brien, Goodwin and Foss, 2010; Walsh et al., 2008; Westlake & Boyle, 2012). As for self-control levels and texting while driving behavior, results showed that individuals with lower self-control scores perceived texting while driving behavior as less dangerous. Low self-control respondents were also found to have had discussions with their parents about safe driving. These respondents were female, younger (15-20) and had higher reports of consequences due to texting while driving behavior (Gray, 2015).

Self-control has been consistently linked to deviant and analogous behaviors. According to prominent researchers and scholars (Wright, Caspi, Moffitt, & Paternoster, 2004), people with low self-control exhibit impulsive behavior, and are likely to ignore the perceived risks and costs associated with risky behavior. Therefore, individuals with low self-control will engage in risky behaviors. Quisenberry (2014) contends that the General Theory of Crime may explain why young novice drivers will engage in the risky behavior of texting while driving. This study suggests that individuals knew the law (96% of the sample), but still exhibited texting while
driving behavior. Due to this finding Quisenberry (2014) posits individuals continue texting and driving behavior due to low self-control.

In the United States distracted driving has become an issue that is garnering a lot of attention due in part to tragic stories of death. According to the Center for Disease Control (CDC) more than nine deaths occur every day in the United States and approximately 1,060 individuals are injured in crashes due to driver distraction (Centers for Disease Control and Prevention, 2013). Quisenberry also points out that a study conducted by State Farm (Anderson, 2011) found that among 18 to 29 year olds distracted driving shown an increase over a two year span. One finding that was curious among participants in the State Farm study included that teen drivers admit that texting while driving behavior is dangerous, but continue to text and drive. This study found that 76% of teens agree that if you continue texting while driving behavior, someday you will be killed while driving. Moreover, 93% of teens also agree at the least someday an accident will occur (Copeland, 2012). Despite knowing death or serious injury can occur, explanations as to why teen drivers continue to engage in risky behavior need to be found. One explanation Quisenberry (2014) posits is from a theoretical framework the General Theory of Crime. Quisenberry (2014) found that low self-control is a key predictor of texting while driving behavior. While the findings did support that high self-control did decrease texting while driving behavior, knowledge of the law had no impact on texting and driving behavior. (Quisenberry, 2014). Further, the author also stated that texting while driving behavior significantly decreased after the passage of the new law.
Chapter Four

Methods

Current Study

This study investigated if young drivers were aware of state laws concerning texting and driving, and utilized two theories (social learning theory and the general theory of crime) to attempt to explain texting and driving behavior. Specifically, new drivers in high school (16 to 18 years old), and college students (18 to 21 years old) were asked to complete a survey self-reporting their own texting and driving behavior, as well as their perceptions of the behavior of their parents and peers. By obtaining information about their peers and family members, a pattern of texting and driving behavior can be established, through which the current study will attempt to gauge whether or not an individual is learning through observation. Both self-control and social learning theory place great emphasis on the influence of parents and peers on defining attitudes toward and participation in risky behavior (Akers, 1996; Gottfredson & Hirschi, 1990). Therefore, this study includes four separate hypotheses.

H1: Participants with low self-control will be more likely to report texting while driving.

H2: Parental use of texting while driving will be related to the participant’s tendency to engage in texting and driving behavior.

H3: Peer use of texting and driving will be related to the participant’s degree of texting and driving behavior.

H4: Participants who know the law will abstain from texting and driving more so than those who do not know the law.
Sample

As noted previously, in Missouri the law for texting and driving states anyone equal to or less than 21 years of age may not text and drive. Therefore, schools were an ideal location to seek the necessary sample for this project. In Missouri, individuals can begin operating a motor vehicle at the age of 15 when the individual has a permit and is accompanied by an adult who is licensed. On the individuals 16th birthday he or she may acquire their license and begin driving on their own. Due to these conditions the targeted sample included participants between 16 and 21 years of age. Participants were drawn from three high schools and one university within the central Missouri area.

To gain approval for the study the researcher contacted the three high schools to gain approval from the school administration. After discussing the research with school administrators the approval was given by the high schools to allow for the researcher to have students participate in the study. Once approval was made by the high schools, the researcher was able to send the study to the university institutional review board and was granted to begin the study.

Participants

The sample consisted of 115 participants, between the ages of 16 to 21 years old. The mean age of this study was (M = 18.18, SD = 1.37). Participants for ages 16 and 17 were asked for a parent’s permission before the participant may take the survey. After the participant has returned the consent form signed by a parent or guardian they then signed an assent form and completed the survey. The surveys were kept separate from the consent and assent forms to ensure anonymity. Participants age 18 and above were able to give their own consent. All individuals within the study were volunteers. Four participants failed to place an age within the questionnaire. Since age played a major role, these four cases were removed from the study.
Variables

Texting Behavior

Participants were asked to self-report on four items regarding their own texting behavior while driving. All items were scored such that higher scores indicated more risky texting and driving behavior. These four items ask participants if they ever text and drive (0 = never, 1 = less than once a week, 2 = more than once a week but less than 7 times a week, 3 = more than once a day but less than 5 times a day, 4 = more than 5 times a day), when they text and drive do they keep hands on the wheel (0 = N/A, 1 = keep both hands on the wheel, 2 = keep one hand on the wheel, 3 = text with both hands), and their reaction upon receiving a text message (0 = have someone answer it for you, 0 = ignore it, 1 = wait until a stop or red light to answer, 2 = reply right away). Participants were able to mark more than one answer for the last question, which asked participants to indicate locations where the driver texts (0 = N/A, 1 = on an empty road, at a stop sign, at a red light, or while parked, 2 = in traffic, on busy roads, or on highways/expressways). The final measure of texting and driving behavior was created by adding the scores from all four items for each participant.

Self-control

Self-control was measured using the 24-item survey developed by Grasmick et al. (1993). This test has been frequently utilized to measure self-control in various criminological studies concerning self-control. According to Tittle, Ward, and Grasmick (2003), the use of the cognitive survey to measure self-control developed by Grasmick and colleagues was as effective as utilizing behaviorally based measures to identify levels of self-control. Criminologists have utilized this scale to measure self-control to measure other risky behaviors such as seat belt use (Longshore, 1998), drinking and driving (LeGrange, 1996; LeGrange & Silverman, 1999), and
texting and driving (Quisenberry, 2014). This scale was created to measure multiple facets of self-control including impulsivity, risk-seeking, inclinations for physical activities or simple tasks, self-centeredness, and short temper. The 24-item survey records responses on a 4-point Likert scale, ranging from strongly agree (1) to strongly disagree (4). Responses to all 24 items will be summed, creating a scale of self-control in which high scores indicate lower self-control in the participant.

Social learning variable

Social learning theory will be measured through two sets of questions, one set measuring parental influence and one set measuring peer influence. For both variables, participants were asked to respond to two sets of questions. The first set asked participants to report on their observations of their parents’ or peers’ texting and driving behavior, intended to represent exposure to definitions in social learning theory. The second set asked participants to evaluate how influential their parents’ or peers’ are in their life. The second set of questions will be used as a weight for the first set, in order to give appropriate weight to more influential people in the participant’s life, in accordance with social learning theory.

Parental influence

Seven items will be used to measure parental influence will be measured, which were taken from previous research examining social influences of young drivers (Bejarano-Rodriguez, 2014). The first set of questions ask the participant to report on the frequency they observe their parent(s) texting and driving (0 = Never, 1 = less than once per week, 2 = more than once a week but less than 7 times per week, 3 = more than once per day but less than 5 times per day, 4 = more than 5 times a day), whether their parents have warned them not to text and drive (0 = Yes, 1 = No), and to report how many adults they know that text and drive (0 = None, 1 = A few,
2 = Some, 3 = All). The second set of items, used as a weight, measured attitudes about the participant’s relationship with their parent(s). These three items were evaluated on a 7-point Likert scale (1 = strongly disagree to 7 = strongly agree). Items asked participants to report on how effectively they communicate with their parents, the degree of involvement their parents have in their life, and how much they value their parents’ opinion. Responses to these items were added together, and a 3-level weight was created by assigning low influence to scores one standard deviation or more below the mean, medium influence to scores within one standard deviation above or below the mean, and high influence to scores one standard deviation or more above the mean (scores of 1, 2, and 3 respectively). To create the final variable, the weight scores were multiplied to the sum of the first set of items. (see Appendix A for the full list of survey items).

**Peer influence**

Five items were utilized to create a measure of peer influence on texting and driving behavior. In the same manner as the parental influence measure, participants were asked to report on their observations of their friends’ texting and driving behavior, and how important their friends are to them (see Appendix A for full list of survey items). These questions have been posed in previous research, and have found to be reliable for measuring/for testing social learning (Bejarano-Rodriguez, 2014). The process used to create the final measure of parental influence was utilized to create the final measure of peer influence.

**Knowledge of law**

Previous research has measured knowledge of the law by asking participants about the new laws established in Illinois by asking participants if they were aware of the new laws concerning texting and driving (Quisenberry, 2014). Following the lead of Quisenberry (2014),
knowledge of the law was measured by asking the participant if they thought they knew the current state law on texting and driving (coded as 0 = no, 1 = yes).

**Driving Opportunity**

Two items were used to create the variable driving opportunity. Questions were asked about the amount of hours per week the participant drove, and how long the participant had obtained their drivers license. These questions were utilized in a previous experiment (Bejarano-Rodriguez, 2014), and were an accurate measurement to driving opportunity. The items were computed together and then averaged to make three groups coded (1 = little driving opportunity to 3 = extensive driving opportunity)

**Control variables**

To control for key influences on behavior, measures representing sex, race, and age were created. Educational level was also included in the analysis, since the current study focuses on young drivers. Lastly, driving experience was operationalized in two questions asking participants about how many hours they driver per week (1= less than an hour to 4= greater than 5 hours, and how long the individual had their drivers license (1= less than 3 months to 4= greater than 3 years). Responses to these two items were summed to create a final measure of driving experience.
Chapter Five

Results

Plan of Analysis

This research study explores The General Theory of Crime, Social Learning Theory, and knowledge of the law as predictors of texting while driving behavior. This study hypothesizes that low self-control levels, parent texting behavior while driving, peer texting behavior while driving, and knowledge of the law may predict texting and driving behavior. Ordinary least squares (OLS) regressions will be utilized to explore these four hypotheses.

Sample Characteristics

The sample consisted of 115 participants, including 63 males (55.8%) and 49 females (43.9%) with one person identifying as other (.9%). Race among the participants was 59 white (70.5%) 53 non-white (29.5%) (see Table 1 for descriptive information for all variables). Participants were asked about knowledge of Missouri’s law concerning texting and driving 54 (47.8%) said yes while 59 (52.2%) said no. The mean age of this study was M = 18.185, SD = 1.366. The self-control mean was M = 21.39, SD = 90.56. The texting risk mean was M = 5.821, SD = 4.295. The parental texting behavior mean was M = 8.135, SD = 5.058. The peer texting behavior mean was M = 6.017, SD = 3.760. The driving opportunity mean was M = 2.151, SD = .785. Correlations were also analyzed among the ten variables (see Table 2). Correlations worth noting included that driving opportunity was statistically significant positively with three other variables including age (.408**), knowledge of the law (.270**), and texting risk (.288**).
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<td>3.760</td>
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<tr>
<td>Scale Range:</td>
<td>0 - 16</td>
<td></td>
</tr>
<tr>
<td>Driving Opportunity</td>
<td>2.151</td>
<td>0.785</td>
</tr>
<tr>
<td>Scale Range:</td>
<td>1 - 3</td>
<td></td>
</tr>
</tbody>
</table>
Results

The first question hypothesized that low self-control would predict texting while driving behavior among high school and college age individuals. An OLS regression was conducted to explore this hypothesis (see Table 3). The regression did not find a statistically significant relationship between the key independent variable, self-control, and texting while driving behavior ($p = .075$). Perhaps with a more extensive sample size (N), this particular variable would have been significant at ($< .05$). One control variable was found to reach statistical significance (participant’s driving opportunity, at ($p = .024$).
Table 3: Ordinary least squares regression using Self-control to Predict Texting and Driving Behavior

<table>
<thead>
<tr>
<th></th>
<th>b/Beta</th>
<th>SE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self-Control</td>
<td>-.055/-1.76</td>
<td>.031</td>
</tr>
<tr>
<td>Driving Opportunity</td>
<td>1.305/.242*</td>
<td>.568</td>
</tr>
<tr>
<td>Controls</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>.481/.156</td>
<td>.424</td>
</tr>
<tr>
<td>Sex</td>
<td>-.203/-0.003</td>
<td>.799</td>
</tr>
<tr>
<td>Race</td>
<td>.501/.097</td>
<td>.492</td>
</tr>
</tbody>
</table>

R² 154  n 105

* p < .05; ** p < .01; *** p < .001

The second question hypothesized that parental influence would predict texting while driving behavior among high school and college age individuals. An OLS regression was conducted to explore this hypothesis (see Table 4). The regression did not find a statistically significant relationship between the key independent variable, parental texting behavior, and texting while driving behavior (p = .294). Once again, only driving opportunity was found to reach statistical significance (p = .035).
The third question hypothesized that peer influence would predict texting while driving behavior among high school and college age individuals. An OLS regression was conducted to explore this hypothesis (see Table 5). The regression did not find a statistically significant relationship between the key independent variable, peer texting behavior, and texting while driving behavior ($p = .110$). Once again, driving opportunity was found to reach statistical significance ($p < .040$).

### Table 4: Ordinary least squares regression using Parental Influence to Predict Texting and Driving Behavior

<table>
<thead>
<tr>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>Parental Influence</td>
<td>.085/.101</td>
</tr>
<tr>
<td></td>
<td>.081</td>
</tr>
<tr>
<td>Driving Opportunity</td>
<td>1.220/.224*</td>
</tr>
<tr>
<td></td>
<td>.571</td>
</tr>
</tbody>
</table>

Controls

<table>
<thead>
<tr>
<th></th>
<th>b/Beta</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>.452/.144</td>
</tr>
<tr>
<td></td>
<td>.422</td>
</tr>
<tr>
<td>Sex</td>
<td>.543/.066</td>
</tr>
<tr>
<td></td>
<td>.787</td>
</tr>
<tr>
<td>Race</td>
<td>.720/.139</td>
</tr>
<tr>
<td></td>
<td>.496</td>
</tr>
</tbody>
</table>

$R^2$ 136  
n 107

* $p < .05$; ** $p < .01$; *** $p < .001$

The third question hypothesized that peer influence would predict texting while driving behavior among high school and college age individuals. An OLS regression was conducted to explore this hypothesis (see Table 5). The regression did not find a statistically significant relationship between the key independent variable, peer texting behavior, and texting while driving behavior ($p = .110$). Once again, driving opportunity was found to reach statistical significance ($p < .040$).
The fourth question hypothesized that knowledge of the law would predict texting while driving behavior among high school and college age individuals. An OLS regression was conducted to explore this hypothesis (see Table 6). The regression did not find a statistically significant relationship between the key independent variable, knowledge of the law, and texting while driving behavior (p = .302). Once again, driving opportunity was found to reach statistical significance (p = .024).
### Table 6: Ordinary least squares regression using Knowledge of Law to Predict Texting and Driving Behavior

<table>
<thead>
<tr>
<th></th>
<th>b/Beta</th>
</tr>
</thead>
<tbody>
<tr>
<td>Knowledge of Law</td>
<td>-.873/-102</td>
</tr>
<tr>
<td>SE</td>
<td>.841</td>
</tr>
<tr>
<td>Driving Opportunity</td>
<td>1.378/.252*</td>
</tr>
<tr>
<td>SE</td>
<td>.600</td>
</tr>
<tr>
<td><em>Controls</em></td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>.373/.119</td>
</tr>
<tr>
<td>SE</td>
<td>.427</td>
</tr>
<tr>
<td>Sex</td>
<td>.742/.090</td>
</tr>
<tr>
<td>SE</td>
<td>.801</td>
</tr>
<tr>
<td>Race</td>
<td>.732/.144</td>
</tr>
<tr>
<td>SE</td>
<td>.497</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>R²</th>
<th>n</th>
</tr>
</thead>
<tbody>
<tr>
<td>.120</td>
<td>109</td>
</tr>
</tbody>
</table>

* p < .05; ** p < .01; *** p < .001
Chapter Six

Discussion

This study was conducted to explore if Social Learning Theory, the General Theory of Crime, and knowledge of the law were able to explain texting while driving behavior. The goal of this study included identifying, if any, predictors that may explain texting while driving behavior among young drivers within these two theoretical frameworks. A sample was taken from three high schools throughout the state along with a local university. In all, 115 participants were included in the study. Questions were then operationalized and variables were created to fit the hypotheses. In all, four hypotheses were created in line with the theories presented. Findings did not support any of the four key independent variables. However, one variable, driving opportunity, did reach significance in all four regression analyses.

OLS regressions were conducted in four tests to investigate any key predictors of texting while driving behavior. The first hypothesis failed to find any significance between low self-control and texting while driving behavior ($B = -0.176$, $p = 0.075$) (see Table 3). In other words, as the score for texting while driving is going higher the self-control score is decreasing. In Quisenberry’s (2015) study results supported the General Theory of Crime. However, according to Gray (2015) who utilized self-control as a key predictor for texting while driving behavior, results did not reach significance. One possible reason why this study may not have found significance at the ($p < 0.05$) level can be attributed to the small sample size, which will be discussed later.

The second hypothesis, parental texting behavior, also failed to reach statistical significance between parental texting behavior and texting while driving ($B = 0.101$, $p = 0.294$) (see Table 4). What this essentially means is that parental texting behavior was not found to
predict texting while driving behavior. However, Bejarano-Rodriguez (2014) results suggest there is an association of parental influence in regards to texting while driving behavior. Perhaps, one explanation for contradicting results may be due to how participants value their parent’s opinions. Sixty-seven percent of this sample agreed or strongly agreed that they value their parent’s opinion. Therefore, participants may feel obligated to follow advice about texting and driving behavior.

The third hypothesis, peer influence, failed to reach statistical significance between peer texting behavior and texting while driving ($B = .153, p = .103$) (see Table 5). A larger sample size would increase statistical power, and may contribute to statistical significance, since the relationship is in the expected direction. As mentioned above Bejarano-Rodriguez (2014) found results that contradict the results from this analysis. One explanation could be that participants within this sample may have peers that support good driving habits. Another explanation could be that participants take the advice from parents or guardians more seriously than friends about texting and driving behavior.

The fourth hypothesis, knowledge of the law, did not reach statistical analysis as well ($B = -.102, p = .302$) (see Table 6). This study hypothesized that knowing Missouri’s texting law would show a decreased texting while driving behavior. As the results show this was not the case. Essentially this means that holding all variables constant participants who know the law was just as likely to text while drive compared to those who do not know the law. According to Quisenberry (2014), 96% of the sample did know the new Illinois law pertaining to texting and driving. However, knowing the law only accounted for a slight decrease in texting while driving behavior. One possible explanation why knowledge of the law is not a significant predictor can be attributed to how people view the law. For example, speeding is common among drivers
within the United States. Therefore, the laws pertaining to texting while driving may be viewed in the same light.

Curiously, driving opportunity reached statistical significance in each of the four regression analyses. There are two prominent explanations as to why driving opportunity predicts texting while driving behavior. The first explanation simply is the more an individual drives the more opportunities the individual has to text and drive. The second explanation is since the individual has been driving longer they may feel more confident about their driving abilities.

Finally, it important to emphasize this sample was a small convenience sample and that future research should utilize a larger more representative sample. Another limitation included in this study is the dependency on self-reports. This study asked participants about their texting and driving habits, which among this population is deemed illegal. Therefore, some skepticism may be present as to if participants are fully telling the truth about their texting behavior. Despite this limitation self-reports have provided the method for trying to measure certain crimes (Maxfield & Babbie, 2015). One last limitation for this study is the absence of police influence within Social Learning Theory. Police play a pivotal role within our social setting enforcing traffic laws and can influence drivers either with warnings and citations for texting and driving behavior (Scott-Parker, Watson, King, & Hyde, 2012). Although the current study did not find support for explaining the origin of texting and driving behavior through either the General Theory of Crime or Social Learning Theory, it does encourage discussion of texting and driving behavior at large.

Recommendations for future research include exploring differences between graduated license programs in different states. In the United States graduated driver’s license programs have been implemented to help curb distracted driving among young novice drivers. Throughout
the years, schools utilized graduated driver programs and state laws to help curb this particular problem of distracted driving (Beck, Hartos, & Simons-Morton, 2002). Despite these programs teens continue to be in motor vehicle crashes (MVCs). However, with the use of graduated driver programs that mandate when teens can operate a motor vehicle and under which conditions young drivers can drive, have proven to be effective in decreasing motor vehicle crashes (MVC’s) (Beck, Hartos, & Simons-Morton, 2002). Further research could explore this area to see if texting while driving behaviors continue to happen.

While a plethora of literature has been written about young novice drivers texting and driving, recent literature has not focused on the older population. Future research into this area could provide interesting and significant results as an explanation to why individuals text and drive. Other research questions for further study especially in Missouri is to survey adults about their texting behavior and explore if there are differences within the young population to those who are older than 21. Since Missouri’s texting law is not representative of most states, research could provide some key information to explore whether Missouri’s accident rate is significantly higher than states with stricter laws.

Further research on texting and driving could utilize a theory gaining acceptance among researchers, known as the Theory of Planned behavior. Gray (2015) mentions most theoretical discussion to texting while driving research implements Theory of Planned Behavior to predict texting while driving behavior (Nemme & White 2010; Zhou et al., 2012). The Theory of Planned Behavior, originally known as the Theory of Reasoned Action, posits that an individual’s intentions and perceived behavioral control are a joint function of a performed behavior (Ajzen, 1991). Within this construct of the theory intentions are copied from individual attitudes (positive or negative) toward that specific behavior, in addition to the subjective and
social norms that are important to him or her (Gray, 2015). The Theory of Planned Behavior is not the only theoretical framework to be used to explain texting while driving behavior. Atchley et al. (2011), utilized cognitive dissonance to explain texting while driving behavior. Cognitive dissonance can simply be explained as performing a behavior or stating something that contradicts with your own set of values. Other theories utilized to explain texting while driving behavior include Social Bond Theory and Social Control Theory. Strain Theory may be a viable theory to predict texting while driving behavior. Reasons why this theory is applicable would be due to the society we live in. Instant gratification has become a major issue within our society, text messaging is no different. As a society we expect text messages to be instantly responded to. This instant gratification may strain individuals to answer text messages immediately despite their environment, such as driving. Essentially, what this means is individuals will feel the pressure (strain) to answer the text message while driving, which can lead to dangerous outcomes.
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of answering and initiating a cellular phone call while driving. _Accident Analysis &
Prevention_, 41(3), 438-444.

calling-yesterday-texting-today-using-apps-tomorrow.html


Appendix A

1. How many hours a week do you drive?
   a. < 1 hour
   b. 1-3 hours
   c. 3-5 hours
   d. > 5 hours

2. How long have you had your driver’s license?
   a. < 3 months
   b. 3 months to a year
   c. 1 year to two years
   d. > 3 years

3. How often do you text while driving?
   a. Never
   b. Less than once a week
   c. More than once a week but less than 7 times a week (less than once per day)
   d. More than once per day but less than 5 times per day
   e. More than 5 times per day

4. When you text and drive, do you usually… Please mark only one.
   a. Keep both hands on the wheel
   b. Keep one hand on the wheel
   c. Text with both hands
   d. N/A (I never text and drive)

5. What is your reaction upon receiving a text message while driving? Please mark only one.
   a. Have someone else answer it for you
   b. Ignore it
   c. Reply right away
   d. Wait until a stop or red light to answer
   e. N/A (I never text and drive)

6. Where do you text and drive? Please check all that apply for the following question.
   a. On empty roads
   b. On busy roads
   c. In traffic
   d. While parked
   e. On the highway/expressway
   f. At stop signs and red lights
   g. N/A (I never text and drive)
7. Do you know of someone who has been in a car crash due to texting and driving?
   a. Yes, were the victim
   b. Yes, they caused the accident
   c. No.

8. When I’m in a car with a driver who is texting… Please mark only one.
   a. I feel safe
   b. I feel unsafe
   c. I don’t care
   d. N/A (I never text and drive)

For the following questions, mark one answer that best fits your opinion.

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly disagree</td>
<td>Disagree</td>
<td>Somewhat disagree</td>
<td>Neutral</td>
<td>Somewhat Agree</td>
<td>Agree</td>
<td>Strongly agree</td>
</tr>
</tbody>
</table>

9. Reading text messages while driving is dangerous. □ □ □ □ □ □ □

10. Replying to text messages while driving is dangerous. □ □ □ □ □ □ □

11. Initiating text messages while driving is dangerous. □ □ □ □ □ □ □

12. Since I am a skilled driver, I can text and drive safely. □ □ □ □ □ □ □

13. I worry about being hit by a driver who is texting and driving. □ □ □ □ □ □ □

14. Texting and driving should be illegal for everyone. □ □ □ □ □ □ □

15. Have your parents told you NOT to text and drive?
   a. Yes
   b. No
16. Do your parents/guardians text and drive?
   a. Only my mother
   b. Only my father
   c. Both
   d. Neither

17. How many adults do you know text and drive?
   a. All
   b. Some
   c. A few
   d. None

18. Before you got your license, how often did you observe your parents/guardians texting while driving?
   a. Never
   b. Less than once per week
   c. More than once per week but less than 7 times per week
   d. More than once per day but less than 5 times per day
   e. More than 5 times a day

For the following questions, mark one answer that best fits your opinion.

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
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</thead>
<tbody>
<tr>
<td>19. I communicate efficiently with my parents.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>20. My parents are involved in my life.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>21. I value my parent’s opinion.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

22. Do your close friends text and drive?
   a. Yes
   b. No
23. Before you got your license, how often did you observe your close friends texting and driving?
   a. Never
   b. Less than once a week
   c. More than once a week but less than 7 times per week
   d. More than once per day but less than five times per day
   e. More than five times per day

24. I feel like I can tell my close friends anything.
   [ ] Strongly disagree  [ ] Disagree  [ ] Somewhat disagree  [ ] Neutral  [ ] Somewhat agree  [ ] Agree  [ ] Strongly agree

25. My close friends are a big part of my life.
   [ ] Strongly disagree  [ ] Disagree  [ ] Somewhat disagree  [ ] Neutral  [ ] Somewhat agree  [ ] Agree  [ ] Strongly agree

26. I value my close friends’ opinions.
   [ ] Strongly disagree  [ ] Disagree  [ ] Somewhat disagree  [ ] Neutral  [ ] Somewhat agree  [ ] Agree  [ ] Strongly agree

27. Do you think you know the Missouri law concerning texting and driving?
   a. Yes
   b. No

28. Which of these do you think best represents the current Missouri law concerning texting and driving?
   a. Anyone may text and drive
   b. You must be at least 18 to text and drive
   c. You must be 21 to text and drive
   d. You must be over 21 to text and drive

29. Using the following scale, how confident are you that you selected the correct option for the previous question?
   [ ] Not Confident  [ ] Neutral  [ ] Very Confident
The following are questions about how you approach certain situations. On a scale of 1 to 4 with 1 being strongly disagree and 4 being strongly agree, please indicate how much do you agree with the following statements.

<table>
<thead>
<tr>
<th></th>
<th>STRONGLY DISAGREE</th>
<th>DISAGREE</th>
<th>SOMEWHAT AGREE</th>
<th>SOMEWHAT DISAGREE</th>
<th>STRONGLY AGREE</th>
</tr>
</thead>
<tbody>
<tr>
<td>30. I often act on the spur of the moment without stopping to think</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>31. I don’t devote much thought and effort to preparing for the future</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>32. I often do whatever brings me pleasure here and now, even at the cost of some distant goal</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>33. I’m more concerned with what happens to me in the short run than in the long run</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>34. I frequently try to avoid projects that I know will be difficult</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>35. When things get complicated, I tend to quit or withdraw</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>36. The things in life that are easiest to do bring me the most pleasure</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>37. I dislike really hard tasks that stretch my abilities to the limit</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>38. I like to test myself every now and then by doing something a little risky</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>39. Sometimes I will take a risk just for the fun of it</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>40. I sometimes find it exciting to do things for which I might get in trouble</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>41. Excitement and adventure are more important to me than security</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>42. If I had a choice, I would almost always rather do something physical than something mental</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>43. I almost always feel better when I am on the move than when I am sitting and thinking</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>44. I like to get out and do things more than I like to read or contemplate ideas</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td></td>
<td>STRONGLY DISAGREE</td>
<td>DISAGREE</td>
<td>SOMEWHAT AGREE</td>
<td>SOMEWHAT DISAGREE</td>
<td>STRONGLY AGREE</td>
</tr>
<tr>
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</tr>
<tr>
<td>45. I seem to have more energy and a greater need for activity than most other people my age</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>46. I try to look out for myself first, even if it means making things difficult for other people</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>47. I’m not very sympathetic to other people when they are having problems.</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>48. If things I do upset people, it’s their problem not mine</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>49. I will try to get the things I want even when I know it’s causing problems for other people</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>50. I lose my temper pretty easily</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>51. Often, when I’m angry at people I feel more like hurting them than talking to them about why I am angry</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>52. When I’m really angry, other people better stay away from me</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>53. When I have a serious disagreement with someone, it’s usually hard for me to talk calmly about it without getting upset</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
</tbody>
</table>

54. Please write in your age: _____________

55. Gender: I consider myself:
   a. Male
   b. Female
   c. Other

56. What is your current level of education?
   a. Currently attending high school
   b. High school graduate
   c. Some college
   d. College graduate
57. What is your race?
   a. African-American
   b. Asian
   c. Caucasian
   d. Other ___________________________(please specify)
Appendix B

Approved 4/13/2016 Expiration Date: 4/13/2017

Researcher: Fredrick Green Graduate Research Assistant University of Central Missouri

Faculty advisor: Dr. Melissa Petkovsek.

Topic: Texting and driving habits of young driver's Consent form Researcher and

Research Topic: This study is concerned with the habits of texting and driving among young, novice drivers, how their habits were formed, and knowledge and adherence to the laws of Missouri and self-control.

What are the risks and benefits that come from you being in the research study? The risks associated with participating in this study are similar to the risks of everyday life. The benefits include the knowledge and experienced gained from participating in a research study. This study is anonymous, and nothing you report on the survey can be linked back to you. The information gathered in this survey will be used for academic research only, and not distributed in any way

Parent/Guardian Approval: Your parents or guardian must give approval for you to be in the study. After they decide, you get to choose if you want to do it too. If you don’t want to be in the study, no one will be mad or upset with you. If you want to be in the study now and change your mind later, that’s OK. You can stop at any time. Researcher

Contact Information: My email address is fgreen@ucmo.edu, or you can call my faculty advisor Dr. Petkovsek at (660-543-4720) if you have questions about the study or if you decide you don’t want to be in the study any more. I will give you a copy of this form in case you want to ask questions later. Agreement: I consent to participate in the study. If I am under the age of 18, my parent(s) has been made aware of my desire to participate in this study and has signed this consent form below. I understand that participation in this research is voluntary and that I can stop at any time without consequence. Fredrick Green has answered all my questions and I know that I can stop being in the study at any time. If you have any questions about this, please contact Fredrick Green by email at fgreen@ucmo.edu or Dr. Petkovsek at petkovsek@ucmo.edu by email and by phone at (660) 543-4720, or the Human Subjects Protection Program at (660) 543-4624.

Parent signature: _______________________ Researcher: _______________

Participant signature: ____________________ Date: _______________

Equal Education and Employment Opportunity
Criminal Justice Humphrey 300 Warrensburg, MO 64093 Office 660-543-4950 Fax 660-543-8306 www.ucmo.edu/cj
Appendix C

For parents to sign for consent of their child.

**Identification of Researchers:** Fredrick Green, graduate student of UCM. My faculty advisor is Dr. Melissa Petkovsek of the criminal justice department. We are with the University of Central Missouri.

**Purpose:** The purpose of this research project is to gather information of teenagers’ texting behavior, their attitude towards texting and driving, knowledge of Missouri laws, and their level of self-control. Request for Participation: Participation is voluntary for this study. We are inviting you to participate in a study about texting and driving, along with your level of self-control. It is up to you whether you would like to participate. If you decide not to participate, you will not be penalized in any way. You can also decide to stop at any time without penalty. If you do not wish to answer any of the questions, you may simply skip them. You may withdraw your data at the end of the study. If you wish to do this, please tell us before you turn in your materials. Once you turn in the materials, we will not know which survey or test is yours. Approximately 100 students are to be surveyed.

**Exclusions:** You must be between the ages of 16-21 to take part in this study.

**Description of Research Method:** If you agree to be a part of this study, your child will be asked to fill out a questionnaire regarding their texting and driving habits along with a self-control survey. Some of the questions may be a bit personal or sensitive (for example, How often do you text while driving? Do you know of someone who has been in a car crash due to texting and driving?) Your child is free not to answer any questions he/she does not wish to answer. Your child may withdraw from the study at any time by stopping the survey. Withdrawing would have no impact on your grade in this class. There is no penalty for withdrawing in this study.

**Procedures:** Participants under 18 will obtain permission from parents by signing the informed consent form. The student under the age of 18 will then sign an consent form once you the parent or guardian have given expressed permission. Once students have read the form they may ask questions or express concerns, once they have signed the form the Participants will be handed a survey. After completion of the survey students will take with them a debriefing form which will allow for them to ask questions at a later time if necessary.

**Privacy:** Your child is not asked to put his/her name on this survey it is completely confidential and therefore no one will be able to identify their answers. Their identity will in no way be related to the study. If your child withdraws from this study, all the materials provided by your child will be destroyed and not used for analysis. Your child’s survey will be locked in a drawer behind a locked room. Data collection will also show no identifying information about the participant. Explanation of risks: The risks associated with participating in this study are similar to the risks of everyday life. Explanation of Benefits: Your child will benefit from participating in this study by getting firsthand experience in psychological research.

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Parent signature: ________________________ Date_______________