

COMMUNICATION TECHNOLOGIES AND THEIR IMPACT ON  
TEXTING WHILE DRIVING

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By  
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CERTIFICATION OF APPROVAL

COMMUNICATION TECHNOLOGIES AND THEIR IMPACT ON TEXTING  
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## DEDICATION

This thesis is dedicated to my husband, mother, brother, and friends who supported me throughout this journey.

## ACKNOWLEDGEMENTS

I would like to thank all the people who have helped me complete this thesis. I would like to thank the members of my thesis committee, Dr. Chau-Pu Chiang, Dr. Gregory Morris, and especially my chair, Dr. Abu Mboka, for their support and guidance. Finally, I would like to thank my family and friends for their help and support.

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## ABSTRACT

This study focuses on whether the immersion in communication technologies plays a central role in the lives of people born after 1984, and whether people born after 1984 text while driving more than those born before 1984. The sample is made up of 181 participants and the data was collected through the use of a survey which consists of seventeen items. Using the Pearson Chi-Square test and cross-tabulations, it was found that 1) the younger generation does indeed text while driving more often than the older generation, 2) both generations agree that people should obey driving laws, and 3) there are no differences between either age group in relation to how dependent they are on cell phones.

## CHAPTER I

### INTRODUCTION

Digital technology has made a significant impact on peoples' daily lives in the twenty-first century. According to Harrison (2011), the cell phone has become an essential part of peoples' daily lives, as evidenced by the presence of over 277 million active cell phone users in the United States (p. 1516). Cell phones today are used for much more than voice communication: people use them for navigation, surfing the web, texting, and social media. Having the world at their fingertips has compelled people to be in constant use of their cell phone. This distraction of focus has been linked to numerous vehicular crashes.

Violanti (1997) claims that since the 1990s, there is a correlation between the use of cell phones and traffic accidents. Researchers found that teenagers between the ages of sixteen through nineteen account for nearly half the deaths in motor vehicle crashes, and with the use of cell phones, the rate has not decreased (Preusser, Williams, & Lund, 1985, p. 358; Eshani, Bingham, & Shope, 2011). In 2005, nearly six thousand teens between the ages of sixteen to twenty died in motor vehicle crashes (Current Events, 2007). About twenty-six hundred of the crashes involved the use of cell phones by the drivers at the time of the accident (Clayton, Helms, & Simpson, 2006).

With such an increase in motor vehicle crashes, governments are creating laws prohibiting drivers from operating cell phones. These laws and the associated

punishments vary by state. According to the Governors Highway Safety Association (2013), there are ten states that prohibit all drivers from using cell phones while driving, and there are thirty-nine states that prohibit texting while driving, including California and Massachusetts. Texting while driving, as used in this thesis, is defined as the act of manually typing a text message using a cellular phone and sending the message while driving an automobile. Table 1 illustrates many of the states that prohibit holding a cell phone to talk or text while driving.

Table 1

*Driving Regulations Regarding Cell Phone Use*

State	Prohibits Hand-Held Cell Phone Use	Prohibits Hands-Free Cell Phone Use
Arizona	No (only school bus drivers are prohibited)	No (only school bus drivers are prohibited)
California	Yes	No (only under age of 18 are prohibited)
Hawaii	No statewide laws, determined by counties	No statewide laws, determined by counties
Massachusetts	Yes	No (only under age of 18 are prohibited)
Montana	Varies by city	Varies by city
Oregon	Yes	No (only under age of 18 are prohibited)
Washington	Yes	No (only new drivers are prohibited)

In California, drivers are prohibited from using cell phones in a moving vehicle unless they are using a hands-free device (California Vehicle Code §23123), effectively rendering it illegal to physically come into contact with the phone. The penalty for not following California Vehicle Code §23123 is \$20 for a first time offense, and \$50 for a subsequent offense, but fines can be more than tripled (California Department of Motor Vehicles, 2011). Similarly, Massachusetts has

driving laws that limit the use of cell phones while driving. For instance, Section 13B (a) of chapter 155 from the Massachusetts Session Laws states that no one operating a car is allowed to use a cell phone to access the internet, or read or compose a text message; they are allowed to use the phone if a hands-free device is used (188<sup>th</sup> General Court, 2010). The penalty for texting while driving in Massachusetts is \$100 for the first offense, \$250 for the second, and any offense thereafter is \$500 (Driving Laws, 2014).

The punishments for texting while driving are usually in the form of a fee, yet judges in some states, like Massachusetts, have begun imposing the maximum sentence, to act as a stronger deterrent. For example, a seventeen-year-old caused a fatal car accident due to texting while driving, and was imposed with “concurrent sentences of two and one-half years for the homicide, two years for the texting charge,” and his license was suspended for fifteen years (Baker, 2012). The teen served one year in prison because of his age and lack of past criminal behavior. He was the first teen to be given the highest punishment in the state. The judge explained that he imposed such a sentence to serve as a message to other people who text while driving.

Studies have been conducted to explain why young drivers make up nearly half of the number of car accidents (McGehee, Raby, Carney, Lee, & Reyes, 2007). The phrase young drivers, often used in this thesis and sometimes referred to as the “younger generation,” represents all motorists born after 1984. Some researchers have argued that these accidents occur because young drivers are easily distracted, and a

distracted driver is at a higher chance of getting into an accident (Neyens & Boyle, 2007). Some of these distractions include driving with passengers of the same age, and driving while using cell phones (Lee, 2007).

There is a great deal of research pertaining to young drivers trying to explain why they engage in this behavior (Nygaard & Grube, 2005; Lee, 2007). The spike in the use of texting started to become visible in the year 2000. During this time, people born in the mid-1980s were just starting to get their license, making them the most common age group for using their cell phones while driving. Although many states have laws prohibiting texting while driving, many young adults continue to engage in this behavior. Martha and Griffet (2007) found that teenagers are aware of the physical harm that texting while driving can cause, but they continue to engage in the behavior regardless. This is mostly due to the belief that though harm occurs to others who engage in texting while driving, it will not happen to them because they are more careful at texting while driving.

This study focuses on the immersion in communication technologies and their influences on texting while driving. This thesis argues that communication technologies play central roles in the lives of people born after 1984; therefore, they are more likely to text while driving than people born in earlier years.

## CHAPTER II

### TECHNOLOGICAL DEVELOPMENTS AND THEIR IMPACT ON TEXTING WHILE DRIVING

Improvements to modern wireless communication technologies continue to occur at a fast pace. With improvements in devices such as cell phones, it has been observed that in general automobile accidents have been declining in the last few years, but those related to cell phones and younger drivers have been increasing. It has also been argued that increases in car crashes are partly due to young drivers driving while being distracted. These distractions can include talking to passengers, or changing the radio station, but texting is currently considered to be one of the main sources of distractions (Shope & Bingham, 2008; West et al., 2011).

Texting while driving has gained a lot of attention in the last few years because teenagers are overrepresented in car crash rates (Feldman, Greeson, Renna, & Robbins-Monteith, 2011; Shope & Bingham, 2008). Thus there is a great deal of research pertaining to communication technologies (Harrison, 2011; Lee, 2007), young drivers (Beullens, Roe, & Bulck, 2011; Neyens & Boyle, 2007), and texting while driving (West, Hall, Thygerson, Edwards, Bennion, & Bennet, 2011). There are several explanations for why such behavior occurs, such as a driver's belief of how skilled he or she is behind the wheel, thus feeling comfortable texting while driving (Bayer & Campbell, 2012), the media's influence (Klein, Brown, Childers, Oliveri, Porter, & Dykers, 1993), as well as parental influence (Nygaard & Grube, 2005).

This chapter explains how communication technologies have affected society. It is of great importance to discuss the major technological developments throughout history and their impacts on society to understand why most people become obsessed with new technology. For example, between the 1900s and 1940s, thirty-eight percent of households had telephone services, and by 1998 it jumped to ninety-four percent of households (U.S. Census Bureau, 1999). Although not everyone had these services, it was still a large increase in the number of people who chose this form of communication technology; therefore, this provides a general idea of how other technological advances have been accepted by society. Furthermore, understanding the development of communication technologies and observing their impact on society will serve a basis for explaining why texting has become a great phenomenon, thus leading to texting while driving.

### **Major Technological Developments**

Technological advances that have made major impacts in societies all around the world since the late 1800s include automobiles, computers, television, the internet, and mobile phones. In 1885, the first gas-fueled automobile was invented as an improvement on earlier cars that ran on steam (Automobiles, 2011). According to Kyvig (2004), gasoline powered cars started to “become a central factor in the everyday lives of ordinary Americans,” (p.27) and changed their daily routine. By the 1920’s, the rapid increase in the use of cars strongly impacted the lives of Americans, changing the way people worked, handled their business, and even the way they spent their free time (Kygiv, 2004, p.28). Automobiles heavily influenced the American

way of life during this era, and such influence continues today. The same can be seen with other technological advances.

In the late 1930s, the first televisions were invented and had a major influence on society (Golden Age, 2005). The first televisions projected in black and white. Eventually, in the late 1940s, the first color television was introduced (Golden Age, 2005). Television made a huge impact in the lives of the people in the 1940s, because it was a perfect opportunity to bring the family together. Automobiles, just like televisions and other technologies, are considered major technological advances because they are used all around the world and have been modernized (e.g. self-parallel park and rear camera) to meet peoples' needs.

### **Development of Communication Technologies**

In the middle of the twentieth century, the pace of technological developments in communication quickened. Many people worked together to develop better methods of communicating with each other. During the 1940s and thereafter, we saw the development of computers, the internet, and cellular phones.

The first computer controlled by software was invented in the early 1940s. It was a major technological advance, immediately affecting society (Computer History I, 2006). The computer was eventually improved with the creation of the mouse, graphical interface, and so on. Eventually the internet and the World Wide Web were developed (Computer History II, 2006). The World Wide Web made it easier for people to conduct research for school or work and improved communication methods.

People could now communicate through electronic mail, instant text messages, or video-chat.

Following the developments of the computer was the cell phone. The concept was first thought of in 1947, and was invented in 1973 (Cell Phone History, 2011). Dr. Martin Cooper, an employee of Motorola, is considered the inventor of cell phones as we know them today (Black, 2009). In 1973, he made the first call on his mobile phone. By 1979 prototypes were developed by several companies. AT&T and Bell Labs, for example, sent mobile phones to two thousand customers for testing. By 1982, the Federal Communications Commission (FCC) authorized commercial cellular service.

Cell phones were gradually improved. These improvements include the World Wide Web, Global Positioning System (GPS), the installation of cameras, and most importantly Short Message Service (SMS). In the 1990s, SMS became known as text messaging. It originally started as a method for cell phone companies to communicate with the customer, but people began to view it as a suitable way to communicate with a friend (Faulkner & Culwin, 2004). This seemed a more convenient way to communicate than having to call someone to tell them a short message. It became useful for those that do not like talking on the phone, because they could relay their message via text.

As cell phone technology increased, text message technology was refined. Today, a text message can be comprised of text, pictures, and videos. Texting became popular at the beginning of the twenty-first century, and is now one of the most

common ways for people to communicate with each other. In the United States, up to eleven billion text messages are sent in one month (Krebsback, 2007).

### **Impact of Communication Technologies**

With all the cell phone developments and increased convenience, people have become reliant on the technology. Society today has adapted to this technology and has made it a part of their daily lives. From the moment that cell phones were created, they have been advancing at a very fast pace. These great advancements have caused cell phones to become a necessity for many.

Individuals born in the mid-1980s and beyond were born into a society that was already using technological advances, especially in the communication technologies area. The use of televisions, personal computers, and eventually cell phones became extremely common during this time. These individuals grew up with modern communication technologies, and have not known a world without it. The creation of the mobile phone, the rise of texting, and the ability to use the internet on the same device, have had a major impact on this generation. It can be argued that younger people are dependent upon these technologies; that would imply they carry cell phones with them at all times. Younger people with this reliance on technology are unable to put away their cell phones, even while driving. Thus, this thesis argues that people born after 1984 are more likely to text while driving than people born before 1984, due to the immersion in communication technologies.

## CHAPTER III

### TEEN DRIVING, TEXTING, AND ROAD ACCIDENTS

Over the years, it has been found that teen drivers have higher crash rates than adult drivers (Brovold, Ward, Donath, Simon, Shankwitz, & Creaser, 2007; McGehee, Raby, Carney, Lee, & Reyes, 2007; West et al., 2011). For instance, Lee (2007) found that individuals between the ages of sixteen through nineteen were overrepresented tenfold in severe crashes compared to adults who were between the ages of forty through fifty. In 2005, nearly six thousand teens aged sixteen to twenty died in motor vehicle crashes (Current Events, 2007). With such an increase in teen car crash rates, researchers have studied these cases and have found reasons for why these crash rates have increased. Some of the reasons include not being experienced drivers (McGeehee et al, 2007), the tendency of imitating dangerous behaviors observed in the media (Klein et al., 1993), parents influencing driving behaviors (Nygaard & Grube, 2005), and distracted driving (Shope & Bingham, 2008).

This chapter covers the characteristics and impacts of the factors that affect teen driving, such as the media, parental influence, and distractions. This section will also discuss texting and teen driving, more specifically teens' perception of texting while driving, and the response from various states and non-governmental institutions. It is important to discuss how teens perceive texting while driving, as it provides an insight on how the younger generation views such behavior and why they continue to perform it. Discussing the governments' and non-government institutions'

responses to the increase in texting while driving provides further understanding on how it is becoming a problem.

## **Teen Driving**

### **The Effects of the Media**

The media has been blamed for teenagers engaging in risky behaviors that lead to high crash rates. Klein et al. (1993) argue that teenagers learn their behavior from television, radio, music, and magazines. Klein et al (1993) claim that “the entertainment industry often has been accused of promoting adolescent risky behavior through portrayals of unhealthy activity” and that it is common knowledge that teenagers often mimic the behavior they observe (p.24). Beullens, Roe, and Bulck (2011) also found that some teenagers performed the same risky behaviors they observed on television.

For instance, since the first installment of *The Fast and the Furious* franchise, there has been an increase of street racing and engagement in reckless driving maneuvers. In 2003, the California Highway Patrol officers “saw a rise in [street] racing after the first *Fast and the Furious* came out” and expected the same when the second installment was released (Glionna, 2003). As one of the officer’s stated, young drivers do not realize that “these are movie sets with stunt drivers performing on closed streets,” thus they believe they can mimic the same maneuvers and the outcome will be the same as in the movie (Glionna, 2003). This supports the previous research that young drivers mimic what they observe in the media. The same can occur with texting while driving. If young drivers observe texting while driving in the

media, they will most likely replicate the act regardless of the consequences that may follow.

### **Parental Influence**

Parents and guardians have also been blamed for teenagers engaging in risky behaviors while driving. For instance, it appears that teenagers engage in driving under the influence of alcohol because they do not have quality communication with their parents about drinking and driving (Nygaard & Grube, 2005). Nygaard and Grube (2005) explain that parents seem to only very briefly discuss the topic of drinking and driving with their children, which leads to their children preferring to drive themselves or with someone under the influence, instead of riding with their parents. Drinking and driving has the same possible outcomes as texting while driving, and if parents are not discussing these topics with their children, the young drivers will likely continue to perform these tasks, regardless of the possible negative outcomes.

Parents have the ability to influence their children through communication and observation. The media is not the only influence on teenagers. Young adults also can learn behavior through observing their parents' actions. For example, if a teenager sees his or her own parent driving and turning around to speak to passengers in the backseat, or views the parent talking or texting on the cell phone while driving, the teenager may think that it is appropriate behavior. In many situations such as these, the parents are unaware of the influence they are having on their children.

## **Distractions and Their Impact on Driving**

Shope and Bingham (2008) argue that there are various factors that increase the odds of teenagers being involved in vehicular accidents including, talking to passengers, nighttime and weekend driving, as well as drinking and driving. Along with these factors, teenagers also tend to engage in other risky behaviors when driving that include speeding, “following a vehicle too closely, making illegal lane changes, and weaving through traffic” (Shope & Bingham, 2008, p. S266). Another study found that young men engage in riskier driving behaviors than young women. These behaviors include “high-level speeding and speeding for the thrill of it, following too closely to the vehicle ahead, violating traffic laws, using mobile phones while driving (including text messaging), driving during high-risk nighttime hours, and driving older vehicles (which are prone to failing and could lead to an accident)” (Ivers, Senserrick, Boufous, Stevenson, Chen, Woodward, & Norton, 2009, p. 1638).

Lee (2007) supports the idea that those between the ages of sixteen to nineteen are overrepresented in severe car crashes compared to adult drivers between the ages of forty to fifty. Lee (2007) further explains that most drivers tend to drive safer when they have passengers in the car, but many teenagers are encouraged by their peers to engage in riskier driving behaviors. New digital entertainment technologies “such as cell phones, text messaging, and MP3 players have the potential to aggravate the factors that place young drivers at risk in the first place” (Lee, 2007, p. 203). Though there are many factors that distract drivers, the one receiving the most attention is cell phones, especially when it relates to texting while driving.

## **Texting and Driving**

As previously mentioned, distracted driving leads to automobile accidents and research indicates there is a correlation between the increase of teen motor vehicular crash rates and the increase of cell phone use (Volanti, 1997; Mckeever, Schultheis, Padamanam, & Blasco, 2013). West et al. (2011) argue that texting while driving should be a concern of everyone because it occupies a driver's attention, eyes, and their hands (p. 37), thus becoming more problematic than other distractions. McKeever, Schultheis, Padamanam, and Blasco (2012) found that when an individual is texting while driving, the attention is diverted from the road "for longer periods of times" than when performing different tasks, like tuning the radio (p.135).

The increase of crash rates and its correlation to cell phone use have led more researchers to study this topic. Saqer, Visser, Strohl, and Parasuraman (2012) claim that today, almost every teenager owns a cell phone and that "texting is a preferred mode of communication for them because of the ability to send texts inconspicuously during class or family outings" (p. 5877). Furthermore, the instant communication that texting provides causes the person texting to continually look at his or her phone regardless of the activity he or she may be participating in. Since it is known that the younger generation prefers texting at all times, it is important to discuss their perception on texting while driving to understand why they do it even though there may be negative consequences.

### **Teens' Perception of Texting while Driving**

Researchers have been questioning whether individuals, especially teenagers, are aware of the negative consequences associated with texting while driving. For instance, Drews, Yazdani, Godfrey, Cooper, and Strayer (2009) led a study in which their purpose was to “establish the impact of text messaging on driving performance and safety” (p. 764). One of their observations demonstrated that drivers who were texting while driving noticeably increased the distance between their car and the car in front of them. The researchers implied that such acts occur because the drivers “may be aware of the increase in risk associated with text messaging and they rather consciously or unconsciously compensate for this increase by creating a ‘safety buffer’” (Drews, Yazdani, Godfrey, Cooper, & Strayer, 2009, p. 768). Such results have also been observed when it comes to texting while walking. Lopresti-Goodman, Rivera, and Dressel (2012), found that people who text while walking “compensated for being distracted by increasing” their distance between objects or people (p. 646). This indicates that individuals who text while driving or walking are aware of the possible dangers, thus increase their distance between objects.

Along with these studies, Martha and Griffet (2007) studied how adolescents perceive the risks related to cell phone use. Their research found that teenagers do have a rather high perception of the physical risks related to cell-phone use while driving. Though it appears that teenagers are aware of the harms that can occur when using a cell-phone while driving, some continue to engage in the behavior because they believe that nothing will happen to them (West et al. 2011). That is, it appears

that young adults know the negative consequences which are associated with texting while driving, but they do not seem to understand how formidable those negative consequences are. This has led many states to take action against texting while driving.

### **States' Responses to Texting while Driving**

Due to the exponential growth of cell phone use while driving and the increase in teenage vehicular crash rates since the start of the twenty-first century, many state legislatures have started questioning the safety of cell phone use while driving. This has led to the creation of laws banning talking on a cell phone or texting while driving (Nikolaev, Robbins, & Jacobson, 2010). Although many legislators thought that creating laws to ban such activities would be ineffective, it has become clear that these measures had to be taken to deter teens and adults from using cell phones while driving, especially for texting (Nikolaev, Robbins, & Jacobson, 2010). While there were doubts, it has been found that drivers aware of these laws, are less likely to use their phones when they are behind the wheel (Braitman & McCartt, 2010).

California is one of the states with laws banning hand-held electronic devices while driving. California Vehicle Code §23123 states that an individual is not allowed to drive and use a cell phone, unless using it with a hands-free device. California Vehicle Code §23123.5 makes it illegal for an individual of any age to use a wireless device to text while driving, unless using “voice-operated and hands-free operation to dictate, send, and listen to a text.” Furthermore, California Vehicle Code §23124

states that individuals under the age of 18 are not allowed to use a cell phone while driving, regardless if it is equipped with a hands-free device. Other states, such as Massachusetts and Oregon, have similar laws as those in California. All three states prohibit handheld use of cell phones while driving for all drivers, while they allow hands-free devices for people over the age of eighteen (Governors Highway Safety Association, 2013).

### **Non-Governmental Institutions' Response to Texting and Driving**

Along with the creation of such laws, cell phone companies have begun to use the media to discuss the severe negative consequences what texting while driving can lead to. AT&T, one of the major national cell phone companies, has taken the lead in discouraging texting and driving (Take the Pledge, 2012). They have done this by sharing stories of individuals, especially teens, who have suffered terrible consequences (like brain injuries or even death) due to texting while driving. AT&T has promoted taking a pledge to not text while driving by having famous actors pledge not to do it in some of their commercials. For instance, one of AT&T's commercials has the main actors of the show *Supernatural* talk about how they have taken the pledge to not text while driving, because they want to be able to live long lives with their newborn children. The actors encourage the viewers to take the pledge as well.

Along with cell phone companies, insurance agencies such as State Farm also advise their customers to text before they drive, and to place their phone out of reach so that they are not tempted to text while driving (Goldsborough, 2012). To further

prevent texting while driving, various hands-free cell phone kits and program applications have been invented. For instance, to prevent looking away from the road and looking at a cell phone, voice operated programs are included in cell phones which pick up commands to make a call, read, write, and send text messages.

In India, a prototype of a signal blocking device was created to block the transmission of the data coming from the driver's phone while the car is moving (Stromberg, 2012). This means that the device recognizes the signal coming from the driver's phone and will "block" it, preventing the driver from making or receiving calls and texts. Unfortunately, though this seems to be an effective preventative, it needs to be taken into account that the driver may be alone during an emergency, and this device could prevent the driver from making an emergency call. If the device can recognize when an emergency call is being placed, then it could be very successful. In the future, laws may even require a car to be equipped with this device.

Many young drivers engage in texting while driving as previous researchers have found, and although there are laws prohibiting it, awareness on the possible negative consequences, and hands-free devices, they continue to participate in this behavior. This thesis argues that individuals born after 1984 text while driving more often than people born before 1984 due to the immersion in communication technologies.

## CHAPTER IV

### THEORETICAL FRAMEWORK

Criminal behavior, just like any other human behavior, has been researched for centuries. Criminal behavior occurs for various reasons: the motivation to benefit from crimes committed (Cressey, 1954), the social condition of the environment (Clinard, 1942; Comings, 1996; Jeffery, 1976), and poor socioeconomic status (Pridemore & Kim, 2007). Taking texting while driving as an example, the younger generation may be aware of the existence of laws against such behavior, but continue to engage in this activity. This thesis argues that one of the most logical explanations for this behavior is the differential association theory. Thus this chapter explains why differential association theory best explains texting while driving.

#### **Differential Association Theory**

Edwin Sutherland is well known for his differential association theory, derived from George Herbert Mead's symbolic interactionism theory (Bernard, Snipes, & Gerould, 2010). Mead argues that the "individual is initially dependent on the antecedent existence of a social system, specifically as it exists in the ongoing process of a functioning language, for the means wherewith to engage in experience or to take any kind of self-conscious and self-directed action" (Kuhn, 1964, p. 64). In other words, Mead's theory explains that an individual learns a behavior from others by processes like language. Sutherland builds on Mead's theory to argue that criminal behavior is learned through this same method.

Sutherland's theory deals with how behavior is learned and how that learned behavior influences future behavior. To Sutherland, behavior is learned through interaction with others and "occurs within intimate personal groups" (Bernard, Snipes, & Gerould, 2010, p. 180). These intimate groups can range from family to peers. Criminal behavior is learned through the same process, and the same concept applies to the use of cell phones. Indeed, learning how to tie shoe laces together is the same process as learning how to use a cell phone, which is also the same process as learning how to text while driving.

### **Born Alongside Communication Technologies**

To further understand why the differential association theory best explains texting while driving, the culture that the younger generation is born into needs to be further discussed. Along with cell phones, other types of technologies, like social networking sites, have been developed. These networking sites, such as Facebook and Instagram, are used around the world by millions of people. With all of the technology that exists and continues to be improved, the generation born after 1984 has become immersed in communication. They have learned how to live with communication technologies, and because they do not know anything else, have become dependent on it.

The younger generation has been born into a society that can communicate instantly through different means, and has come to believe this is the way one should live. They have not learned any other methods of communication that are as easy as sending a text message. Today, teenagers are attached to their phone, and continue to

use their phone more frequently even while driving. Unfortunately, negative outcomes, like an increase in automobile crash rates, are linked to the use of cell phones. The differential association theory serves as an explanation as to why the younger generation texts while driving, regardless of the consequences. The theory explains that behavior is learned through the communication of intimate groups. I will discuss the influence that family and peers have on teenagers and how that leads to cell phone use and eventually texting while driving.

### **Family Influence**

Cell phones became popular in the 1990s, and individuals born a few years before the 1990s were introduced to cell phones at a very young age through many means, including their family. As cell phones became more popular, parents began to purchase them for their kids. Parents could now provide psychological and behavioral control, and support their child from anywhere through the use of cell phones (Weisskirch, 2009). Parents saw it as a good way to monitor their children and keep them safe; thus when they called or texted their child, they expected a quick response. This led to children, especially teens, carrying their cell phones with them at all times and learning that they should respond to calls or messages as soon as possible.

### **Peer Influence**

Peer influence transpires among people regardless of age, but is most common among the younger generation. At the adolescent stage, teenagers are sorting their life and perceive and receive pressure from their peers to adopt styles, values, and any

other interests (Steinberg & Monahan, 2007). When a teen receives a cell phone from their parent, their first instinct may be to show it to their friends. This may lead to their peers wanting a cell phone of their own, so that they could communicate with each other and continue to share the same interests. Peers learn that having a cell phone will ease communication with friends, which leads to more peers wanting a phone, thus increasing the popularity of cell phones.

### **Texting while Driving, a Learned Behavior**

By the early 2000s texting became widespread, especially among the younger generation. They learned that it was the best way to communicate with friends and family, and it became a convenient way to communicate. As texting gained popularity, the act of texting while driving followed. It can be assumed that texting while driving was learned in a couple different ways. First, texting while driving could have been learned through observing someone engage in the behavior. Second, through communication, that is, someone could learn that texting is acceptable behavior because they have heard two or more people discussing how they engage in texting while driving. Third, indirectly, meaning the actual act of texting while driving was not mentioned or observed, but due to the need of an immediate response, texting occurred while driving. Regardless of the method it was conveyed, texting while driving is a learned behavior.

Since the younger generation has become dependent on texting, they engage in this behavior daily and at any time, regardless of any other activity they are participating in. The purpose of this study is to show that the immersion in

communication technologies influences texting while driving, which is a learned behavior. Furthermore, those born after 1984 are more likely to text while driving than those born before 1984.

## CHAPTER V

### METHODOLOGY

In the past few decades the younger generation has been growing up alongside modern communication technologies, such as cell phones. It can be argued that they are so immersed that they've become dependent on communication technologies. This thesis argues that the immersion in communication technologies influences texting while driving, because it plays a central role in the lives of those individuals that were born after 1984. That is, people born after 1984 have a higher likelihood to text while driving than someone born before 1984 primarily due to texting becoming popular at the age they were able to obtain their driver's license and hence continue texting while driving. Survey methodology was used to collect the data for this study.

#### **Survey Methodology**

Survey methodology is a common method in criminal justice related research. This methodology is frequently used because it can be administered in various ways such as through the telephone, mail, or at a specific location (Bennett, Khangura, Brehaut, Graham, Moher, Potter, & Grimshaw, 2011). Survey methodology is used for qualitative research, but it most often is used with quantitative research. There are different types of surveys that can be used, such as small-scale, cross-sectional, based on the individual person as the unit analysis, and built around a self-administered questionnaire (Punch, 2003, p. 4) This thesis uses onsite self-administered surveys,

which is one of the best methods to collect quantitative data and to study the relationship between variables.

Self-administered surveys indicate that the researcher does not actually meet each respondent face to face, but rather hands out the survey to one person or a large group, and then the respondents answer the questionnaire. Self-administered surveys have numerous advantages (Bennett et al, 2011; Craighead, Ketchen, Dunn, & Hult, 2011; Krosnick, 1999; Werner, Praxedes, & Kim, 2007). The benefits include low cost, convenience to administer, reduced interviewer bias, and anonymity for the respondents. However, the disadvantages include receiving incomplete surveys, over-reporting or underreporting, and interpretation of the questions (Craighead, Ketchen, Dunn, & Hult, 2011). For this study, extra steps have been taken to minimize many, if not all, of the disadvantages of using self-administered surveys. These steps include, making the questions as clear as possible and providing sufficient time for the participants to complete the survey.

### **Survey**

The survey used consists of seventeen items that include both open and closed-ended questions designed to capture whether the immersion in communication technologies leads to texting while driving. Sixteen of the items collected quantitative data, while one collected qualitative data. Seven of the items are based on a 5-item Likert scale, with the items ranging from strongly agree to strongly disagree. The survey is broken into five sections: demographics, frequency of cell phone usage, attitudes toward driving laws and toward self, traffic violations, and dependency on

cell phones. The independent variable in this study is age while everything else, excluding gender, are dependent variables.

The demographics section consists of items such as age and gender, as well as information regarding length of owning a cell phone. This section also examines at which age the respondent may have participated in texting while driving. Item four, regarding texting while driving as a minor, allows the researcher to infer that the individuals who are currently sixteen or seventeen most likely engage in the same behavior.

The frequency of cell phone usage section consists of four items that not only ask how often a cell phone is used, but also includes how often text messaging occurs while driving. This information is sought because the assumption is that the more text messaging a respondent engages in during a week, the more dependent he or she is on a cell phone, and the greater likelihood of texting while driving. Item eight examines the amount of text messages sent while driving which also answers how often the respondents engage in this behavior.

Items nine through fifteen make up the section that captures attitudes toward driving laws and toward self. It is believed that people who demonstrate a lack of respect for traffic laws and who view themselves highly are more likely to text while driving. Items ten and fourteen control for traffic violations that the respondent may have committed. It is assumed that individuals who have violated various traffic laws are more likely to text while driving.

Finally, items sixteen and seventeen make up the dependency section. It captures how dependent the respondents are on their cell phone, by measuring if they would return home for their phone and under what circumstances. The idea is that if the respondents return home for their cell phone because they “need” their phone, then they may be dependent on the cell phone and are more likely to text while driving.

### **Participants**

This sample needed to include two age groups: those born before 1984 (thirty-one years and older) and those born after 1984 (thirty and younger). The participants for this research include 181 male and female respondents from both age groups. Out of the 181 participants, 150 are under the age of thirty, while thirty-one of them are thirty-one or older. The total number of female participants is one-hundred and one, while seventy-nine are male, and one respondent did not list gender.

### **Sample Selection and Data Collection Procedures**

In the early stages of the data collection process, 163 participants were non-randomly chosen from a university, which led to the majority of the sample being under the age of thirty. As used in this thesis, non-randomly refers to the participants being easily accessible to the researcher. Though the number of respondents under the age of thirty was great, more respondents born before 1984 were needed for the data to be meaningful. This led to collecting more data using opportunity sampling, which involves drawing the sample from a population that is convenient. This led to a total of 181 participants non-randomly gathered, with seventeen percent being born before

1984. The participants were from the western part of the United States. The survey was administered at a university and various job locations. The respondents had a sufficient amount of time to complete the survey.

### **Data Analysis Procedure**

The Statistical Program for the Social Sciences (SPSS) was used for analysis. The use of cross-tabulations identified frequency distributions for all variables. During the stage of entering the data into SPSS, it became evident that several items were left blank on the back side of the surveys by five of the respondents. The assumption is that these items were not answered because they were located on the backside of the survey, and some of the participants may not have noticed that there was a backside. Furthermore, it became apparent that for item twelve, which asks whether texting while driving laws are a waste of time, thirty-six of the participants answered “disagree” and “strongly disagree.” After much thought, it was decided to disregard those answers, and use the rest for analysis. Although the answers were disregarded, it did not have a significant effect on the results.

### **Protection of Human Subjects**

The participants involved in this research received a copy of the informed consent form and were given the opportunity to review the form before beginning the survey. They were informed about the purpose, goals, duration of the survey, and all rights associated with the study. Respondents were provided with contact numbers to address any other concerns with respect to their participation. They were informed that everything would be completely anonymous.

## CHAPTER VI

### RESULTS

The purpose of this study was to determine whether the immersion in communication technologies influences texting while driving, especially with people born after 1984. The emphasis of this study focused on three themes: the impact of age on texting while driving, the impact of age and compliance with driving laws, and the impact of age and dependence on cell phones.

Pearson chi-square test and cross-tabulations were used to analyze the data collected. The Pearson chi-square test was used in this study because it can determine whether two variables are independent or dependent with each other (Franke, Ho, & Christie, 2011, p. 450). The use of cross-tabulations was used to determine the frequency distributions of all the variables.

The results showed that those born after 1984 use their phone while driving more often than those born before 1984, and the younger generation texts while driving at a higher rate than those over the age of thirty. However, it is clear that the majority (over fifty percent) of the respondents obey traffic laws. Lastly, results show that those born after 1984 did not differ much with those born before 1984 when it came to cell phone attachment.

#### **Age and Texting while Driving**

The Pearson Chi-Square analysis, as presented in Table 3, illustrates that  $X^2(4, N=181) = 10.86, p < .05$ , indicating that the relation between looking at phone

while driving and age is significant. This means that looking at a cell phone while driving is dependent on age. Table 2 further illustrates that the younger generation looks at their phone while driving more often than the older generation, those born before 1984. It was calculated that 82% (N=150) of the younger generation looked at their phone while driving one or more times while 68% (N=31) of the older generation did the same. These results can be used to conclude that those born after 1984 are more likely to text while driving than those born before 1984.

Table 2

*Crosstab-Looked at Phone while Driving*

		Looked at Phone While Driving (weekly)					Total
		16+	11-15	6-10	1-5	0	
Age	18-30	46 (31%)	17(11%)	26 (17%)	34 (23%)	27 (18%)	150
	over 31	7 (23%)	1 (3%)	1 (3%)	12 (39%)	10 (32%)	31
Total		53 (29%)	18 (10%)	27 (15%)	46 (25%)	37 (20%)	181

Table 3

*Chi-Square Tests-Looked at Phone while Driving*

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	10.856 <sup>a</sup>	4	.028
N of Valid Cases	181		

a. 2 cells (20.0%) have expected count less than 5. The minimum expected count is 3.08.

It is important to take a look at the comparisons of both generations when it comes to reading a text while driving, because reading a text while driving will most likely lead to sending a text while driving. Table 4 shows the cross-tabulation of age and reading a text message while driving, while Table 5 illustrates the Pearson Chi-Square test.

Table 4

*Crosstab-Read Text Message while Driving*

		Read Text Message While Driving (weekly)					Total
		16+	11-15	6-10	1-5	0	
Age	18-30	28 (19%)	20 (13%)	22 (15%)	44 (29%)	36 (24%)	150
	over 31	3 (10%)	2 (6%)	1 (3%)	6 (19%)	19 (62%)	31
Total		31 (17%)	22 (12%)	23 (13%)	50 (28%)	55 (30%)	181

Table 5

*Chi-Square Tests-Read Text Message while Driving*

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	17.542 <sup>a</sup>	4	.002
N of Valid Cases	181		

a. 2 cells (20.0%) have expected count less than 5. The minimum expected count is 3.77.

As it can be seen in Table 5, the Pearson Chi-Square test resulted in  $X^2(4, N=181) = 17.54$ ,  $p < .05$ , indicating that the relation between reading a text message while driving and age is significant. This means that reading a text messages while driving is dependent on age. As reflected in Table 4, 76% (N=150) of those under the age of thirty reported reading text messages while driving more than once, while only 38% (N=31) of those over the age of thirty-one did the same.

Table 6 illustrates the cross-tabulation of age and texting while driving, while Table 7 shows the results of the Pearson Chi-Square test.

Table 6

*Crosstab-Texted while Driving*

		Texted While Driving (weekly)					Total
		16+	11-15	6-10	1-5	0	
Age	18-30	24 (16%)	12 (8%)	21 (14%)	40 (27%)	53 (35%)	150
	over 31	0 (0%)	4 (13%)	1 (3%)	2 (6%)	24 (77%)	31
Total		24 (13%)	16 (9%)	22 (12%)	42 (23%)	77 (43%)	181

Table 7

*Chi-Square Tests-Texted while Driving*

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	23.333 <sup>a</sup>	4	.000
N of Valid Cases	181		

a. 3 cells (30.0%) have expected count less than 5. The minimum expected count is 2.74.

When it comes to age and texting while driving, it can be seen (Table 7) that  $X^2(4, N=181) = 23.33, p < .05$ , meaning the relationship between texting while driving and age is significant. Texting while driving is dependent on age. Furthermore, Table 6 illustrates that 65% (N=150) of those under the age of thirty texted while driving at least one time while only 22% (N=31) of those over the age of thirty-one did the same. This establishes that the younger generation texts while driving more often than the older generation.

### **Age and Driving Laws**

This study argues that the reason people born after 1984 text while driving is because they are immersed in communications technology. Therefore, it is important to determine if peoples' views on driving laws has an effect on whether

they text while driving. The focus is on the following variables: 1) the need to signal when changing lanes, 2) always stopping at a stop sign, 3) views on texting while driving laws, 4) and always making a complete stop at a stop sign. All of these items were measured using a 5-item Likert scale with the attributes ranging from strongly agree (SA) to strongly disagree (SD).

Table 8

*Crosstab-Need to Signal Changing Lanes*

		Always Stop					Total
		SA	A	NA/ND	D	SD	
Age	18-30	106 (71%)	36 (24%)	8 (5%)	0 (0%)	0 (0%)	150
	over 31	24 (77%)	5 (16%)	1 (3%)	1 (3%)	0 (0%)	31
Total		130 (72%)	41 (23%)	9 (4%)	1 (1%)	0 (0%)	181

Table 9

*Chi-Square Tests-Need to Signal Changing Lanes*

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	5.934 <sup>a</sup>	3	.115
N of Valid Cases	181		

a. 3 cells (37.5%) have expected count less than 5. The minimum expected count is .17.

Beginning with age and the need to signal changing lanes, Table 9 illustrates that the Pearson Chi-Square resulted in  $X^2(3, N=181) = 5.93, p > .05$ , meaning the relationship between the need to signal when changing lanes and age is not significant. This indicates that age and the need to signal while changing lanes are independent variables. Table 8 shows that 95% (N=150) of the younger generation strongly agreed or agreed to the importance of needing to signal while changing lanes, while 93% (N=31) of the older generation strongly agreed or agreed. This

shows that age did not have an effect on the opinion of needing to signal while changing lanes, and thus it can be implied that the respondents signal while changing lanes.

Always stopping at a stop sign was another driving law that was included in this study. Table 10 illustrates the cross-tabulation of age and always stopping, while Table 11 shows the Pearson Chi-Square test.

Table 10

*Crosstab-Always Stop*

		Always Stop					Total
		SA	A	NA/ND	D	SD	
Age	18-30	82 (55%)	48 (32%)	9 (6%)	8 (5%)	3 (2%)	150
	over 31	19 (61%)	8 (26%)	1 (3%)	3 (10%)	0 (0%)	31
Total		101 (55%)	56 (31%)	10 (6%)	11 (6%)	3 (2%)	181

Table 11

*Chi-Square Tests-Always Stop*

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	2.296 <sup>a</sup>	4	.681
N of Valid Cases	181		

a. 4 cells (40.0%) have expected count less than 5. The minimum expected count is .51.

Table 11 presents  $X^2(4, N=181) = 2.30, p > .05$ , meaning the relationship between always stopping at a stop sign and age was not significant. This indicates that age and always stopping at a stop sign are independent variables. It can be seen above in Table 10 that 87% (N=150) of those under the age of thirty and 87% (N=31) of those over the age of thirty-one strongly agreed or agreed to always stopping at a stop sign.

Along these lines, respondents were asked about whether they always make a complete stop at stop signs. Below, Table 12 illustrates the cross-tabulation of age and always completing a stop, while Table 13 shows the Pearson Chi-Square test of both variables.

Table 12

*Crosstab-Always Complete Stop*

		Always Complete Stop					Total	
		no response	SA	A	NA/ND	D		SD
Age	18-30	5 (3%)	46 (31%)	47 (31%)	19 (13%)	28 (19%)	5 (3%)	150
	over 31	0 (0%)	12 (39%)	11 (35%)	2 (6%)	6 (19%)	0 (0%)	31
Total		5 (3%)	58 (32%)	58 (32%)	21 (12%)	34 (19%)	5 (3%)	181

Table 13

*Chi-Square Tests-Always Complete Stop*

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	3.585 <sup>a</sup>	5	.611
N of Valid Cases	181		

a. 5 cells (41.7%) have expected count less than 5. The minimum expected count is .86.

Taking note of the five missing cases, the Pearson Chi-Square test resulted in  $X^2(5, N=181) = 3.59, p > .05$ , indicating relationship between always making a complete stop and age is not significant. This means that age and always coming to a complete stop are independent variables. Table 12 illustrates that 62% (N=150) of those under the age of thirty and 74% (N=31) of those over the age of thirty-one claimed to always make a complete stop. Overall, both age groups had the same opinion regarding always completing a stop at a stop sign, but it can be seen that the younger

generation does not always make complete stops. The final variable in this section deals with laws regarding texting while driving.

Table 14

*Crosstab-Texting Driving Laws*

		Texting Driving Laws						Total
		no response	SD	D	NA/ND	A	SA	
Age	18-30	33 (22%)	47 (31%)	35 (23%)	23 (15%)	6 (4%)	6 (4%)	150
	over 31	8 (26%)	16 (52%)	2 (6%)	3 (10%)	0 (0%)	2 (6%)	31
Total		41 (23%)	63 (35%)	37 (20%)	26 (14%)	6 (3%)	8 (4%)	181

Table 15

*Chi-Square Tests-Texting Driving Laws*

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	8.943 <sup>a</sup>	5	.111
N of Valid Cases	181		

a. 4 cells (33.3%) have expected count less than 5. The minimum expected count is 1.03.

Table 14 and 15 demonstrate the cross-tabulation and Pearson Chi Square test for age and texting driving laws. Table 14 illustrates that there were a total of 41 (N=181) missing responses. When it comes to age and texting driving laws,  $X^2(5, N=181) = 8.94, p > .05$ , meaning the relationship between texting driving laws and age was not significant. This indicates that abiding laws regarding texting while driving is not dependent on age. Even with 23% (N=181) of the cases missing, 55% (N=181) of the total sample strongly disagreed and disagreed to texting driving laws being a waste of time.

As can be seen, both age groups had similar views when it came to driving laws. All of the variables were independent, which allows the researcher to conclude that both age groups generally follow driving laws. It can be assumed that texting while driving does not occur because of the want or need to break laws. By assuming this, it can be concluded that texting while driving occurs for other reasons, such as the immersion in communication technologies.

### **Age and Dependence on Cell Phones**

This thesis argues that individuals of the age thirty or younger are more likely to text while driving than those over the age of thirty-one, because they are fully immersed in communication technologies. As explained in earlier chapters, being immersed in communication technologies can lead to being dependent on the technology, which leads to texting at any time regardless of the situation a person is in (e.g. driving). In order to conclude whether the respondents text while driving because of the immersion in communication technologies, it must be determined whether they depend on their phone.

To measure dependence on cell phones, the following variables were used:

1) feeling uncomfortable without a cell phone, 2) returning home for a cell phone when leaving it at home, and 3) the circumstance of which one would return home for their cell phone. The third variable, unlike the other two, uses qualitative data.

Starting with age and being uncomfortable without a phone, Table 16 and 17 present the cross-tabulation for both variables as well as the Pearson Chi-Square test.

Table 16

*Crosstab-Uncomfortable without Phone*

		Uncomfortable Without Phone						Total
		no response	SA	A	NA/ND	D	SD	
Age	18-30	5 (3%)	45 (30%)	50 (33%)	22 (15%)	21 (14%)	7 (5%)	150
	over 31	0 (0%)	10 (32%)	9 (29%)	6 (19%)	4 (13%)	2 (6%)	31
Total		5 (3%)	55 (30%)	59 (33%)	28 (15%)	25 (14%)	9 (5%)	181

Table 17

*Chi-Square Tests-Uncomfortable without Phone*

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	1.774 <sup>a</sup>	5	.879
N of Valid Cases	181		

a. 5 cells (41.7%) have expected count less than 5. The minimum expected count is .86.

As reflected in Table 17,  $X^2(5, N=181) = 1.77$ ,  $p > .05$ , the relationship between feeling uncomfortable without a phone and age is not significant. This means that age and being uncomfortable without a phone are independent variables. As seen in Table 16, 63% (N=150) of those born after 1984 and 61% (N=31) of those born before 1984, strongly agree or agree to feeling uncomfortable when their cell phone is left at home. Both age groups responded to this question very similarly.

The following question addressed whether a person would return for their cell phone when they left it at home. Table 18 shows the cross-tabulation for age and return for cell phone, while Table 19 illustrates the Pearson Chi-Square test.

Table 18

*Crosstab-Return for Cell Phone*

		Return For Cell Phone			Total
		no response	yes	no	
Age	18-30	6 (4%)	99 (66%)	45 (30%)	150
	over 31	0 (0%)	16 (52%)	15 (48%)	31
Total		6 (3%)	115 (64%)	60 (33%)	181

Table 19

*Chi-Square Tests-Return for Cell Phone*

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	4.697 <sup>a</sup>	2	.096
N of Valid Cases	181		

a. 2 cells (33.3%) have expected count less than 5. The minimum expected count is 1.03.

Table 19 shows that  $X^2(2, N=181) = 4.70, p > .05$ , indicating the relationship between returning home for a cell phone and age is not significant; therefore, age and the likelihood to return home for a cell phone are independent variables. Table 18 illustrates that 66% (N=150) of the younger generation and 52% (N=31) of the older generation said yes, they would return home for their cell phone if they left it at home.

In addition to the quantitative data collected, qualitative data was gathered to find under what circumstances the respondents would return home for their cell phone. The responses were placed in four categories: 1) all circumstances, 2) depends on circumstance, 3) emergency, and 4) anything else. As reflected in Table 20, 52% (N=117) of the statements were placed in the “depends on circumstance” category. Some of these answers included “if I was leaving home for several hours,” or “if I

had enough time to return home I would other than that I would not,” or “if I knew I would be expecting a call.”

Table 20

*Crosstab-Circumstances*

		Circumstances				Total
		All	Depends on	Emergency	Anything	
Age		Circumstances	Circumstance		Else	
	18-30	20 (19%)	52 (50.5%)	16 (15.5%)	15 (15%)	103
	over 31	1 (7%)	9 (64%)	2 (14%)	2 (14%)	14
Total		21 (18%)	61 (52%)	18 (15%)	17 (15%)	117

Table 20 illustrates that 15% (N=117) of the respondents claimed they'd return home for their cell phone if it was an emergency, while 18% stated that they would return home under all circumstances. It can be seen that the majority in both age groups responded that they would return home depending on the circumstance. This demonstrates that people are dependent on their phone.

### **Summary of Results**

The findings show that people born after 1984 do in fact engage in texting while driving (reading and sending a text message) more often than those born before 1984. It was also found that most of the participants generally obey traffic laws, thus it can be ruled out that they text while driving because they want to break the law. Furthermore, it was found that both age groups would in fact return for their cell phone when left at home, but it depended on their circumstance. In sum, the younger generation did text while driving more often than the older generation, but the results show that it is not due to dependency on cell phones, or in other words the immersion

in communication technologies. Although these findings did not produce a clear answer on whether the dependency of communication technologies is a predictor for texting while driving, a separate study using a larger sample may produce significant results.

CHAPTER VII  
DISCUSSION AND LIMITATIONS

**Discussion**

The purpose of this study was to determine whether individuals born after 1984 are more likely to text while driving than those born before 1984, due to their immersion of communication technologies. Though it was found that individuals born after 1984 text more often than those born before 1984, there is no difference between either age group in relation to how dependent they are on cell phones and their views on driving laws.

When it came to ruling out the factor of people texting while driving because of the need to break driving laws, the results were significant. It was found that those born after and those born before 1984 had similar views on driving laws. Both groups agreed that texting while driving laws are not a waste of time and overall agreed that people should obey driving laws. Thus, it can be inferred that individuals who text while driving engage in this behavior because of other reasons.

It was of great importance to find whether individuals under the age of thirty text while driving because of the immersion in communication technologies. This was conducted by measuring how uncomfortable the respondents felt without their phone and if they would return for their cell phone when it had been left at home. It was found that there were no major differences between the younger and older generations

in response to their dependence on their cell phone. Both age groups agreed that they would return home for their cell phones when left at home and for similar reasons.

The researcher hypothesized that the participants' responses on the dependence section of the measuring instrument would be different, but that was not the case. The data shows that the younger generation does engage in texting while driving more frequently than any other age group, but both age groups feel an attachment to their cell, which means that the immersion in communication technologies may not be the factor.

Previous studies have suggested that many other factors, such as family influence and the media may be the cause of texting while driving (Nygaard & Grube, 2005; Klein et al., 1993). Some even suggest that the younger generation is psychologically dependent on cell phones (Walsh, White, & Young, 2009), which could lead to this behavior. As mentioned earlier, the researcher argued that texting while driving is a learned behavior regardless of where it is learned from. Until the behavior is unlearned, it will not stop. Both generations have learned to live with communication technologies, but the younger generation was born into it, which is why it may take longer for them to stop texting while driving. Though this study did not show that the immersion in communication technologies is a reason for texting while driving, it further supported previous findings of the younger generation texting while driving more often than the older generation (Saquer, Visser, Strohl, & Parasuraman, 2012). Additional research with a larger sample can be done in this area to determine the reliability of this study.

### **Limitations and Further Directions**

One limitation of this study was that it could not be generalized to the larger population because of various factors such as the size of the sample and the subjects that make up the sample, because they were not randomly selected. Overall, the sample is small and cannot be generalized to the larger population of drivers. Furthermore, the two age groups were not equal; the younger group was about three times the size of the older group. The majority of the sample consisted of students from a western university. In addition to the size of the sample and the uneven amount of participants in the groups, the data analyzed using the Pearson Chi-Square test is unreliable due to at least two cells from each test not meeting the minimum count expectation. Also the missing responses as seen on Tables 12, 14, 16, and 18 were included in the Pearson Chi Square calculations which may have skewed the results. Though these factors weaken and prevent this study from being generalized, it serves as a way to hypothesize about the larger population.

Another limitation is that this study only used questionnaires as its measuring instrument. As with many instruments used in studies, questionnaires have their flaws such as under-reporting and over-reporting, the misinterpretation of items, or simply the participant not remembering and thus randomly choose an answer (Creaighead, Ketchen, Dunn, & Hult, 2011). Other measuring instruments, like observation, may produce different results which could support or further contradict the hypothesis.

Although this thesis is best used as a hypothesizing tool, it may also serve as a backbone to a larger study focused on communication technologies and texting while driving. While this study found that the immersion in communication technologies was not a factor for why those under the age of thirty engage in texting while driving, a study with a larger and more representative sample could show otherwise. Furthermore, this study did not focus on gender nor the length of owning a cell phone, which may indeed show a correlation with texting while driving. As it has been stated that society has become dependent on technological advances, studying the strength of this dependence can be used to prevent unwanted behaviors. This is a topic that has been researched, but needs to be studied more extensively. More research can help find better solutions to deter teens and adults from texting while driving, thus reducing the high rates of automobile accidents.

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## APPENDICES

APPENDIX A  
INFORMED CONSENT

Dear Participant:

You are being asked to participate in a research project that is being done to fulfill requirements for a Master's degree in Criminal Justice at CSU Stanislaus. We hope to learn how immersed in technology individuals from different age groups are. Along with this information, we hope to learn if such immersion in technology leads to texting while driving. If you decide to volunteer, you will be asked to fill out a questionnaire which should take a few minutes of your time.

There are no known risks to you for your participation in this study.

It is possible that you will not benefit directly by participating in this study. The information collected will be protected from all inappropriate disclosure under the law. All data will be kept in a secure location. The information collected will be anonymous and only the researcher and the faculty sponsor will see the information.

There is no cost to you beyond the time and effort required to complete the procedure(s) described above. Your participation is voluntary. Refusal to participate in this study will involve no penalty or loss of benefits. You may withdraw at any time without penalty or loss of benefits.

If you agree to participate, please indicate this decision by signing below. If you have any questions about this research project please contact me, Jessica Coreas or my faculty sponsor, Dr. Abu Mboka at 209-667-6822. If you have any questions regarding your rights and participation as a research subject, please contact the Campus Compliance Officer by phone (209)667-3784 or email IRBAdmin@csustan.edu.

Sincerely,  
Jessica Coreas  
Student

Name:

Date:

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## APPENDIX B

## SURVEY

Please circle your answer.

1. Age: 18-23 24-29 30-36 37-42 43 or more

2. Gender: Male Female

3. How long have you owned a cell phone?

0-1 years 2-3 years 4-5 years 6-7 years 8 years or more

4. When you were between the ages of 16-17 did you text while driving? Yes No

Please circle the answer that best applies.

5. In the past week, how many text messages have you sent?

0 1-50 51-100 101-150 151 or more

6. In the past week, how many times have you looked at your phone while driving?

0 1-5 6-10 11-15 16 or more

7. In the past week, how many times have you read a text message while driving?

0 1-5 6-10 11-15 16 or more

8. In the past week, how many times have you sent a text message while driving?

0 1-5 6-10 11-15 16 or more

Please circle the answer that is closest to your opinion.

9. The need to signal while changing lanes is very important.

Strongly Agree Agree Neither agree/disagree Disagree Strongly Disagree

10. I have not run a red light more than once.

Strongly Agree Agree Neither agree/disagree Disagree Strongly Disagree

11. I am fast at texting.

Strongly Agree Agree Neither agree/disagree Disagree Strongly Disagree

12. Texting while driving laws are a waste of time.

Strongly Agree Agree Neither agree/disagree Disagree Strongly Disagree

13. I feel uncomfortable when I leave my cell phone at home.  
Strongly Agree    Agree    Neither agree/disagree    Disagree    Strongly Disagree

14. I always make a complete stop at a stop sign.  
Strongly Agree    Agree    Neither agree/disagree    Disagree    Strongly Disagree

15. I am good at multitasking.  
Strongly Agree    Agree    Neither agree/disagree    Disagree    Strongly Disagree

16. Would you return for your cell phone when left at home?    Yes    No

17. If yes, under what circumstances would you return for your cell phone when left at home?

Please write your answer. \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
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