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# Understanding How Texting and Driving Video Public Service Announcements Change College Students' Attitudes and Impact Information Retention Using the Health Belief Model

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# UNDERSTANDING HOW TEXTING AND DRIVING VIDEO PUBLIC SERVICE ANNOUNCEMENTS CHANGE COLLEGE STUDENTS' ATTITUDES AND IMPACT INFORMATION RETENTION USING THE HEALTH BELIEF MODEL

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Title: Understanding How Texting and Driving Video Public Service Announcements Change College Students' Attitudes and Impact Information Retention Using the Health Belief Model

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In studying the impact of video public service announcements (PSAs) on texting and driving, this study found that while informative/celebrity appeals support long-term information retention, fear and humor appeals were more likely to create positive attitude change as measured by the Health Belief Model (HBM). The fear and humor appeal type's also revealed positive significance in the participant's overall health belief index, both immediately and long-term. The results of the current study found informational/celebrity appeal types had a negative impact on the HBM barriers constructs, both immediate and long-term.

Cell phones are a vital tool used in our daily lives. The world is at our fingertips by using these devices. However, this convenience and overreliance have posed problems in personal relationships, classrooms, and produced serious distraction concerns, especially while driving. This quasi-experimental research, conducted at Indiana University of Pennsylvania, examined three appeal types commonly used in PSAs; fear, humor and informational/celebrity to determine if the type of appeal impacts college students' attitudes, both immediately and long-term, towards texting and driving. The study also investigated how these appeals impact college students' immediate and long-term information retention.

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CHAPTER ONE

# THE PROBLEM

## Introduction

In studying the impact of video PSAs on texting and driving, this study found that while informative/celebrity appeals support long-term information retention, fear and humor appeals were more likely to create positive attitude change as measured by the Health Belief Model (HBM). The research also found that these types of appeals revealed significance in participant's overall health attitudes, both immediately and long-term.

By the end of 2015, estimates indicate there will be more than seven billion mobile cellular subscriptions, which translates to roughly 97 percent of Earth's population will have a cell phone. This tenfold growth from 2000, when 738 million subscriptions were in place, creates not only positive benefits but also potentially negative consequences (ITU, 2015). Cell phones have become ubiquitous in our daily lives. With this hand-held unit one can make a call, buy airline tickets, conduct banking, check sport scores, and weather forecasts. However, this convenience and overreliance have posed problems in personal relationships, in classrooms, and produced serious distraction concerns, especially while driving. Driving a car and using a cell phone simultaneously is dangerous, and has created a national menace, especially among younger automobile drivers.

Finding a young adult without a cell phone in the United States is a challenge. Simple observations conducted at a public location or school in any city, county, or state have identified young adults tethered to their phones in the standard pose—heads down, thumbs working the screens, oblivious to their surroundings. According to the Pew Research Center, nearly 75% of teens have or have access to a smartphone and 97% of young adults (ages 18-24) own a cell

phone. (Lenhart, 2015). If one compares these percentages to known crash data related to young drivers, it would create a target audience. In 2013, police departments nationwide reported 963,000 motor vehicle crashes resulting in 383,000 injuries and 2,865 deaths among the targeted age group (AAA Foundation for Safety, n.d.). An Internet search of Public Service Announcements (PSAs) pertaining to cell phone use while driving revealed numerous professionally made televised PSAs in addition to an exorbitant number on YouTube. However, "such appeals do little to overcome drivers' overestimations of their abilities to 'multi-task' while driving" (Pascual-Ferrá, Liu, & Beatty, 2012, p. 227). The message is clear; cell phone use while driving is extremely dangerous, which begs the question: why are drivers, especially younger, inexperienced drivers, still texting while behind the wheel? This study investigated college-age drivers, since the average college student age ranges between 18-23, we incorporated data that will include teen drivers.

Health communication is the art and technique of informing, influencing, and motivating individual, institutional, and public audiences about important health issues. The scope of health communication includes disease control and prevention, emergency preparedness and response, injury and violence protection, environmental health, workplace safety and health, health promotion, health care policy, and the business of health care, as well as enhancement of the quality of life and health of individuals within the community (U.S. Department of Health and Human Service, 2010). PSAs related to health and safety is one form of health communication.

Public Safety Announcements (PSAs) are unpaid advertisements for non-profits aimed to improve knowledge, attitudes, and behavior pertaining to social concerns, health risks, or safety risks and may be video, radio, or print (Martinuiuk, Secco, Yake & Speechley, 2010). Professional advertising agencies are primary producers of PSAs; however, thanks to social

media such as YouTube, smaller interest groups or individuals have added to that number. Considering the success of earlier PSAs (e.g., the Anti-Drug Campaign, "This is your brain on Drugs"; the Anti-Drunk Driving Campaign, "Take the Keys"; and others such as McGruff the Crime Dog), one can assume PSAs could alleviate the current problem of cell phone use while driving.

There has been a plethora of research on PSA appeal types and content for many past and present social concerns, such as drinking and driving, drugs, and AIDS. Unfortunately, there are limited studies on PSAs focusing on cell phone use while driving. This study investigated the way in which various messaging types of PSAs, pertaining to texting and driving, impacted the attitudes and information retention of college-age drivers. More specifically, what is the relationship between the messaging and production characteristics versus the population's preexisting beliefs? This study utilized the Health Belief Model to understand human behaviors. This framework analyzed personal attitudes toward preventative health behaviors (Ross, Ross, Rahman, & Cataldo, 2010). This model is beneficial in explaining and predicting health behavior (Cameron, 2009).

## Statement of the Problem

In 2013, motor vehicle crashes involving distracted drivers produced 3,154 deaths with an estimated additional 424,000 injuries (NHTSA, 2015). Of the total deaths, 330 people died in crashes involving distracted teen drivers (16-19 years of age), and 162 of those deaths were teens (NHTSA, 2015). In short, texting while driving and other distractions have become public health threats. According to Major (2013), drivers take their eyes off the road for an average of 4.6 seconds when texting. If the vehicle travels at 55 miles per hour, this time equates to a driver traveling greater than the length of a football field without watching the road. To add more

disturbing data, recently the American Automobile Association (AAA) (2015) identified the statistics might be worse than originally thought. AAA researchers analyzed 1,700 videos from vehicle event recordings involving teen drivers. By reviewing the last six seconds of the video, it was determined that distraction (to include texting) was a factor in 58% of all crashes, including 89% of road-departure crashes, and 76% of rear-end collisions. The National Highway Traffic Safety Administration (NHTSA), under the U.S. Department of Transportation, previously estimated distraction was a factor in only 14% of all teen driver crashes (AAA Newsroom, n.d.). Based on miles driven, licensed teen drivers (aged 16-19) were more likely, than drivers of any other age group, to have involvement in crashes resulting in injuries to or deaths of people outside their vehicle, such as occupants of other vehicles, pedestrians, or cyclists (AAA Foundations For Traffic Safety, n.d.).

## Purpose of the Study

The purpose of this study was to gain insight as to how video PSAs pertaining to texting and driving actually impact college-age students' attitudes to texting and driving. More specifically, how did the appeal types; fear, humor, informative/celebrity change college students' attitudes towards texting and driving? The literature provides evidence that PSAs need to be relevant to the target audience and offer a specific appeal type based on fear, empathy, humor, or information. This study examined whether these video appeals influenced changes in behavior of these young drivers and, ultimately, discouraged texting while driving. Secondary to that purpose, the study identified which appeals impacted college students retention of information.

The literature showed a lack of research in this area. Research specifically addressing the impact of video PSAs pertaining to texting and driving on college aged individuals was difficult

to find. Incorporating the Health Belief Model, the current study attempted to explain and predict health behaviors by focusing on attitudes and perceptions of individuals. Previous research found "nearly half of all drivers with a mobile phone reported having used it while driving and, overall; the probability of having an accident was perceived to be less for oneself than for one's peers, indicating an optimistic bias" (White, 2004, p. 323).

Since the inception of the cell phone, researchers in various fields have conducted numerous studies on the topic. This study considered certain aspects of prior research on cell phone usage and focused on such theories as the Limited Capacity Model for Motivated Mediated Message Processing (LC4MP), Protection Motivation Theory, and the Extended Parallel Process Model. A brief review of commonly used theoretical concepts justifies the researcher's use of the Health Belief Model. This theory addresses attitudinal components of health behaviors by focusing on six concepts; susceptibility, severity, benefits, barriers, cues to action and self-efficacy. This theory is discussed further in Chapter 2.

## Research Questions & Hypotheses

This study attempted to understand which video PSA appeal type, pertaining to texting and driving, impacted college student's attitudes and whether the appeal type impacted the retention of information from these videos. To test this, an experiment was conducted using video PSAs pertaining to texting and driving. The participants took part in a survey before, immediately after, and again two weeks after viewing PSA appeals.

The main research question for this study was: Does the type of appeal in a video PSA create a change in college students' attitudes as measured by the Health Belief Model? The participants observed a selection of three video PSAs produced by professional advertising agencies and telecommunication companies. The run time of these PSAs are each between 30-

90 seconds, all focusing on the same topic. Participants were from Indiana University of Pennsylvania, a mid-sized, mid-Atlantic public university that offers undergraduate and graduate program.

The first two research questions investigated the impact in immediate and longer-term changes in attitudes based on the messaging techniques and appeals in video PSAs pertaining to texting and driving. The researcher used the Health Belief Model as the foundation for this study. For the third research question, the impact of appeal type on immediate and long-term information retention was examined.

**RQ1: Does the type of appeal in video PSAs create an immediate change in college students' attitudes as measured by the Health Belief Model?**

The intent here was to determine what appeal type used in this study; fear, humor or informative/celebrity created the biggest impact immediately after watching the video PSAs.

H1.1: The type of appeal in a video PSA will impact the amount of immediate change in a college student's perceived susceptibility towards texting while driving.

H1.2: The type of appeal in a video PSA will impact the amount of immediate change in a college student's perceived severity towards texting while driving.

H1.3: The type of appeal in a video PSA will impact the amount of immediate change in a college student's perceived benefits towards texting while driving.

H1.4: The type of appeal in a video PSA will impact the amount of immediate change in a college student's perceived barriers towards texting while driving.

H1.5: The type of appeal in a video PSA will impact the amount of immediate change in a college student's cues to action towards texting while driving.

H1.6: The type of appeal in a video PSA will impact the amount of immediate change in a college student's overall health belief index towards texting while driving.

**RQ2: Does the type of appeal in a video PSA create a longer-term change in college students' attitudes as measured by the Health Belief Model?**

The researcher hoped to determine the relative impact of the three types of appeals (fear, humor and informative/celebrity) on college student's attitudes pertaining to texting and driving on a long-term basis.

H2.1: The type of appeal in a video PSA will impact the amount of long-term change in a college student's perceived susceptibility towards texting while driving.

H2.2: The type of appeal in a video PSA will impact the amount of long-term change in a college student's perceived severity towards texting while driving.

H2.3: The type of appeal in a video PSA will impact the amount of long-term change in a college student's perceived benefits towards texting while driving.

H2.4: The type of appeal in a video PSA will impact the amount of long-term change in a college student's perceived barriers towards texting while driving.

H2.5: The type of appeal in a video PSA will impact the amount of long-term change in a college student's cues to action towards texting while driving.

H2.6: The type of appeal in a video PSA will impact the amount of long-term change in a college student's overall health belief index towards texting while driving.

**RQ3. Does the type of appeal in a cell phone video PSA impact college students' retention of information?**

The last research question was intended to gauge the impact of the specific appeal types on information retention. Questions specific to the video PSAs in each appeal group were included in the immediate and long-term surveys to capture this data.

H3.1: The type of appeal in a video PSA will impact college students' retention of information immediately after watching the PSA.

H3.2: The type of appeal in a video PSA will impact college students' retention of information two-weeks after watching the PSAs.

## Definition of Terms

The following definitions will ensure understanding of the study.

**American Automobile Association (AAA)**

A not-for-profit service organization that conducts safety related research as well as provides services to its members such as, trip planning, roadside assistance, and safety data.

**Cell phone/mobile phone**

A portable wireless phone that can be used to make and receive telephone calls over a radio link while moving around a large geographic area.

**Cellular subscriptions**

Number of orders to a public cellular/mobile telephone service using cellular technology.

**Cellular technology**

Wireless phone and data network provided in geographical area via cells, often cell towers. Each cell uses a specific frequency to avoid interference. When joined, they provide radio coverage over a large geographic area. If a user travels through many cell areas, the phone connects automatically to the nearest cell. This is often done smoothly; however, some connections are lost and the cellular phone might not have service in some areas.

**Driver distraction**

Distractions cause drivers of motor vehicles to lose focus on the act of driving the vehicle. There are three primary types of distraction; visual, cognitive, and manual.

Talking to passengers, using a cell phone, eating/drinking, reading, applying cosmetics, and adjusting car controls are examples of possible driver distraction.

**Millennials**

This is a term given to individuals born between 1980 to the early 2000s.

**National Highway Traffic Safety Administration (NHTSA)**

This government agency is part of the U.S. Department of Transportation with the mission to reduce vehicle-related crashes, save lives, and prevent injuries.

**Public Service Announcement (PSA)**

Messages that bring awareness of certain pro-social issues to the public disseminated by the media without charge. These announcements are typically short in length and can be in audio, video, or print format.

**Social media**

Computer tools giving users the opportunity to interact, create, share, or exchange ideas, photos, and videos among others while in networks and communities online (You Tube, Vimeo)

**Smartphones**

A portable phone that also has an Internet connection and may or may not have an interactive touchscreen.

**Text messages/messaging**

Composing and sending short alpha-numeric electronic messages between mobile phones or portable devices by using the phone keyboard or number keys in older models.

**U.S. Department of Transportation (USDOT)**

The U. S. government agency devoted to all means of transportation.

**Video appeals**

Methods to impact an audience viewing a PSA. The more common approaches employ fear, empathy, humor, and realistic/informational data in the content of the message to evoke emotions and reactions in order to enhance the message.

**Video PSA**

A non-profit public service announcement in a video format.

## Delimitations and Limitations

This study was conducted at Indiana University of Pennsylvania, a mid-sized, mid-Atlantic state-funded university with approximately 12,000 undergraduate students and 2,200 graduate students. The university attracts students from diverse socioeconomic and demographic groups. Caucasian students account for approximately 83% with minority students making up approximately 17% of the student body. The student body is 56% female, higher than state census data, and 44% male, lower than the state census data (U.S. Department of Commerce, 2014; Indiana University of Pennsylvania, 2014). The target sample were college students in a range of basic introductory courses who held a valid state driver's license. This sample will provide the researcher with insights into college-aged drivers.

The PSAs used in this study were video and focused only on the dangers of texting and driving. The online videos were from the Ad Council, NHTSA, and the telemarketing company AT&T. The videos ranged in length from 30 to 90 seconds and fall into three types of appeal— fear, humor, and celebrity/informative— and were chosen for their impact potential. The study was conducted over one week with a follow-up two weeks later to determine long-term information retention.

This chapter summarized the study, including the population, study site, rationale, and research questions. Chapter 2 will offer a review of the literature on the topic.

# CHAPTER TWO

# REVIEW OF THE LITERATURE

## Introduction

This study analyzed information retention related to various types of video appeals warning about the dangers of texting while driving. The researcher's goal was to identify the impact of different video PSA appeal types pertaining to texting and driving and how they impact viewers' information retention and attitudes towards cell phone use while driving.

Previous investigations of cell phone use have been conducted within many fields of study including sociology, psychology, healthcare, media studies, and communications. This review begins by presenting a historical perspective on the cell phone, the capabilities of today's smart phones, and the increase of cell phone access worldwide. The chapter also covers the emergence of public service announcements (PSAs), as well as research pertaining to PSA appeals and resulting behavioral change and explores the concerns that have arisen regarding the dangers of cell phone distraction in all avenues of daily life. Finally, the chapter will explore potential theoretical constructs and why the Health Belief Model supported the current research.

The theoretical foundations pertaining to research regarding cell phone use and video appeals involving cell phone use were explored. The theoretical framework used for this research is detailed. Prior research on this subject allowed the researcher to springboard into the present day and focus on the impact of video appeals related to college students' cell phone use and how video appeals may influence this demographic.

These topics create a sensible outline that was used to assess video appeals that are able to influence the target audience to stop texting while operating a motor vehicle. This information was the focus of an experiment as outlined in Chapter 3.

## History of Mobile Phones and Cellular Technology

The 1939 World's Fair in New York City presented futuristic applications of phones that could be used anywhere (Agar, 2013), not unlike the fictional crime-fighting character Dick Tracy's wrist phone that was a product of these imaginings. What was simply a dream in 1939 would eventually become reality in an astounding way. A long series of inventions contributed to the development of the technology underlying today's cell phones.

Prior to the development of Morse code and telegraphy, the world relied on messengers on land (such as the Pony Express) or on ships to deliver written communications. From very early times, light from the sun reflecting from shiny objects, fire, and smoke have been used to send messages. Later, flags were used for signaling, followed by development of the Semaphore code used by the military (Coe, 2003).

Samuel Morse's telegraph system sent pulses of electrical current along wires with each letter represented by a series of pulses in what became known as Morse code. Inventor Guglielmo Marconi furthered this invention by developing radio technology, at the time called wireless telegraphy. In 1876, Alexander Graham Bell invented the telephone. In 1910, Lars Magnus Ericsson built a telephone in his wife's car; the vehicle was connected via wires to overhead telephone wires, thus creating the first car phone (Agar, 2013). This led to the proliferation of the car radio, primarily used at first by police and the military.

The serious development of cellular technology began in the late 1940s, when the wartime need for communication devices and services dropped off and research into commercial products escalated. In 1946, the Federal Communications Commission (FCC) granted a license to AT&T and Southern Bell for a commercial system called Mobile Telephone Service (MTS), which set up the first service in St. Louis, Missouri. By 1948, more than 100 towns were served

(Agar, 2013). Development of the modern cell phone is equally dependent on improvements in battery size and power capacity. Throughout the late 20th century, new technologies allowed batteries to become smaller and more powerful (Agar, 2013).

Car-based radios found their way into police vehicles in the 1920s, and a small company founded in Chicago by Paul Galvin, which later became known as Motorola, led the way in this technology (Agar, 2013). The first car telephones appeared in the late 1950s and were so large that they were placed in the trunk. In April 1973, Motorola's engineer, Martin Cooper, introduced the first hand-held cellular phone, the DynaTAK, and made the first phone call from this device on the streets of New York City. Not until 1983 did this phone become available commercially. This phone weighed two and a half pounds, was roughly the size of a brick, and cost $3,900 (Anjarwalla, 2010). These early cell phones had limited capacity due to radio operators' resistance to sharing bandwidth (Nijhawan, 2001).

## Cell Phone Capabilities and Evolution

The cell phone, short for cellular phone, now has many other names such as mobile phone, hand phone, smartphone, and iPhone. These phones have two key features: they are typically small enough for users to carry them anywhere and use them at any time, and they are connected to a cellular network. These cellular phones should not be confused with cordless phones, which are wirelessly connected to a base attached to a dedicated phone line (Yan, Chen, & Yu, 2013).

While we still refer to these devices as phones, the vocal message is no longer their most important function. Cell phones are now used for many other purposes: messaging, photography, music, gaming, banking, shopping, reading, fitness, Global Positioning System (GPS), data management, movies, television, radio, and so on. The list of functions is virtually

endless. These abilities allow us to conduct complex business activities anywhere and at any time. These mobile technologies allow people and organizations to escape the office and do more while on the move (Perry, O'Hara, Sellen, Brown, & Harper, 2001).

## Mobile Access

As Strivastava (2005) stated; "Mobile phones are a pervasive tool. It has become such an important aspect of a user's daily life that it has moved from being a mere 'technological object' to a key 'social object'" (p. 1). Mobile technologies play a valuable role in consumers' everyday lives (Goggin, 2012). A wide range of cultural activities revolve around cell phones, such as staying in constant contact, text messaging, shopping, fashion, developing identity, music, work routines, parenting in absentia, interacting with television programs, watching videos, surfing the Internet, meeting people, commerce, locating people, and, unfortunately, bullying (Goggin, 2012).

## Overview of Issues

With cell phone technology, we have the world at our fingertips. Today's cell phones are much more powerful than the early personal computers of 20 years ago. Now we can disseminate messages across the world in seconds, check our social media sites, read the news, respond to email, send text messages or faxes, and even have a phone conversation with another human being through these tiny hand-held computers, all while sitting at a red light.

Cell phones have become a vital part of global news and anyone with a camera phone can capture breaking news thus becoming citizen journalists (Kapko, 2007). The smartphone allows us to conduct business and banking anywhere any time.

Prior research regarding cell phone use can be divided into five major areas: cell phone behaviors, medicine, education, business, and relationships. Research on cell phone use while

driving is one major topic of interest (Yan et al., 2013). Numerous studies focus on the overarching topic of driver distraction, including cell phone use (both hands-on and hands-free), eating, reading, grooming, adjusting car controls, and talking to other people in the car. The current study focuses only on the distraction caused by cell phones while driving.

The United Nations' telecommunications agency reported there were approximately six billion cell phone subscriptions at the end of 2011—roughly one phone for 86 of every 100 people globally. According to the International Telecommunication Union, China alone accounted for one billion subscriptions and India was expected to hit the one billion mark by 2015 (ITU, 2015). Rei (2001) stated how humans now feel the need to stay in touch with each other constantly: "The cell phone has evolved from a luxury for businesspeople into an important facilitator of many users' social relationships" (p. 1). Studies describe a population tethered to their mobile devices primarily through social networking apps, to the extent they find it increasingly difficult to distinguish relationships existing in their pockets from those in their physical surroundings (Mihailidis, 2014).

This experience of being tethered to our cell phones can create serious problems. The U.S. Department of Transportation's National Highway Traffic Safety Administration (NHTSA) has stated "at any given daylight moment across America, approximately 660,000 drivers are using cell phones or manipulating electronic devices while driving, a number that has held steady since 2010" (NHTSA, 2013, p. 1). According to NHTSA data, more than 3,300 people were killed in 2011 and 387,000 were injured in crashes involving a cell phone (NHTSA, 2013).

**Overreliance and Addiction**

Overreliance and addiction are issues arising from cell phone technologies. Cell phones have become ubiquitous within our society and many now consider them a necessity rather than

a convenience (Pinchot, 2011). Cell phone use can become problematic, especially as users become dependent on the technology. Recent research on addiction to cell phones sheds light on this new issue. Traditional addiction concepts were based on substance use (e.g., ingestion of drugs or alcohol). Researchers now agree this addiction covers a broader range of behaviors to include internet addiction and cell phones (Bianchi & Phillips, 2005).

The Pew Research Center found 88% of teens own or have access to cell phones or smartphones, and 90% of those teens with phones exchange texts. A typical teen sends and receives 30 texts per day (Lenhart, 2015). Studies conducted by Bianchi & Phillips (2005) and Roberts, Yaya & Manolis (2014) found the desire to connect socially drives many users to become overly attached and, in some cases, addicted to their cell phone. Cell phone addiction is largely driven by a need to connect socially (Roberts, Yaya, & Manolis, 2014). Bianchi and Phillips (2005) indicated being an extrovert and having low self-esteem are major factors in problem cell phone use. This observation was supported by research conducted by Hong, Chiu, & Huang (2012) who studied addiction to mobile phones by female Taiwanese university students and found women with low self-esteem had higher levels of mobile phone addiction. Sanchez-Carbonell, et al. (2007), found excessive use of the internet can lead to mental disorders of the addictive type, particularly to individuals with special emotional needs as well as adolescents and young adults (Sanchez-Carbonell, et al., 2007).

The focus of this study was on college aged students who fall into the generation called "millennials," and are people born between 1982 and 2004 (Payment, 2008). This group has grown up in a world with computers, the Internet, cell phones, smartphones, and text messaging. Many of them have become tightly attached to their mobile phones. Those individuals who identify a strong attachment to their cell phones use them more often, frequently while driving

(Weller, Shackleford, Dieckmann, & Slovic, 2013). Bianchi and Phillips (2005) observed that because millennials have lived their entire lives with this technology, they are more susceptible to problem use of cell phones.

**Risk Taking**

Overreliance on cell phone technology is one issue within this millennial population. However, when you also consider the physiological delays in the development of the frontal lobe related to judgement, the two factors create a multifaceted problem pertaining to cell phone use such as texting while driving, sexting, cyber bullying, etc. Recent studies have confirmed the brain is still developing well into the late teens or early 20s which includes some of the younger 'millennials' and this study's subject population. Researchers from the University of Alberta found young adult brains were continuing to develop wiring to the frontal lobe, which is responsible for cognitive tasks related to inhibition and attention (Beaulieu & Lebel, 2011). This fact helps to explain why young adults tend to engage in risky behavior. Young adults depend on technology or on parents and friends to help them with decisions; however, they still struggle with decision-making. (Tyler, 2007). Along with reckless decision-making, this delay in development also causes impulsivity, thrill seeking, and other risk-taking activities, and it often resists typical risk-reduction mediations (Reyna & Farley, 2006). Risk-taking experiences that do not result in negative consequences may increase the feeling of invulnerability. This further decreases risk perception, causing risk-taking to increase (Reyna & Farley, 2006). Neyens and Boyle (2007) stated, "Driver distraction is becoming a greater concern among teenage drivers as in-vehicle devices, opportunities for distractions, and teenage drivers' willingness to engage in these activities increase" (p. 206).

The younger segment of the millennial generation are high school and college-age and, as previously discussed, this age group frequently take risks without even realizing it. One-third of drivers 18 to 24 years old stated they can take their eyes off the road for 3 to 10 seconds or more before driving becomes significantly more dangerous (Tison, Chaudhary, & Cosgrove, 2011). This claim directly challenges the NHTSA's position that taking your eyes off the road for any length of time is dangerous.

**Human Interaction**

In addition to risk-taking, human interaction is also impacted by mobile technology. Face-to-face conversations are generally rated superior to those occurring through a mobile device. Conversations in the absence of mobile devices were reported to yield higher levels of empathetic concern (Misra, Cheng, Genevie, & Yuan, 2014). Cell phones can also have negative effects on closeness, connection, and conversation quality. These results demonstrate that mobile phones can interfere with human relationships; this pattern is most visible during discussions that are personally meaningful to the individual(s) (Przybylski & Weinstein, 2013). Hall and Baym (2012) found for close relationships, there were increased expectations for using a cell phone for relationship maintenance, which in turn increased the cell phone use to maintain the relationship and created dependence and satisfaction. Lenhart (2012) identifies the number of text messages sent or received by teens aged 13-17 on a typical day is 60. For older teen girls (15-17) that number is higher, approximately100. While discussing gender specifics, the Pew Research Center also identifies a significant gender gap where girls dominate social media use text messaging and visual social media platforms (e.g., Instagram, Snapchat, Pinterest) more than boys, while boys play video games more than girls.

## Classroom Issues

Young children are quite adept at using cell phones and become dependent on cell phones at an early age. It is likely that this dependence will continue as they grow older and become drivers. According to the Growing Wireless website, 56% of children between the ages of 8 and 12 have a cell phone; 78% of teens (age 12–17) have a cell phone, of which 37% are smartphones; and 51% of high school students carry a smartphone with them every day (Grunwald Associates, 2013). As cell phones and laptops have become more pervasive in the classroom, the opportunity to use them for non-classroom activities, such as gaming or surfing the Internet, is tempting more and more students (Gilroy, 2004). The Pew Internet and American Life project study (Jones, 2003) of 1,162 college students from two-year and four-year colleges nationwide showed that one-third of them play video games on their cell phones or laptops during class. The students felt these activities did not affect their academic performance (Jones, 2003).

## Distraction

The research suggests many college-age students are emotionally connected to their cell phones. The attachment is constant, even when attention is needed to conduct actions requiring concentration such as driving a car or descending a flight of steps. New technologies keep people connected but they also keep people constantly distracted (Bugeja, 2008). A study pertaining to cell phone use and driving performance was conducted by Brookhuis et al. in 1991, identifying this safety concern (as cited by Yan et al., 2013). At the time, there were approximately one million cell phone users (Anjarwalla, 2010).

Driving is "a complex task that requires concurrent execution of various cognitive, physical, sensory and psychomotor skills" (Young & Regan, 2007, p. 379). Drivers can

experience many types of distractions while operating a motor vehicle—for example, eating and drinking, talking to passengers, grooming, reading (including maps), using a navigation system, watching a video, or adjusting a radio or other music player. These activities can be separated into three categories: visual, which involves taking one's eyes from the road; manual, or taking one's hands off of the wheel; and cognitive, or taking one's mind off of driving (Tedesco, 2013).

Whether a driver is using a hands-on or a hands-free device, cognitive distraction still occurs (Walter, 2010). Most individuals suffer significant attention impairment when they use a cell phone while driving (Strayer, Watson, & Drews, 2011). The use of cell phones while driving induces a form of attention blindness, causing drivers to fail to see critical information in their field of view. Strayer et al., (2011) contended the impairments associated with cell-phone drivers may be as great as those commonly observed with intoxicated drivers.

The media and policymakers have focused on the use of cell phones and texting while driving as serious public safety threats. In 2008, approximately one of every six fatal vehicle collisions resulted from a driver being distracted while driving. The causes of distraction have recently been debated and several studies have implicated the use of cell phones or sending text messages while driving (Wilson & Stimpson, 2010).

More recent data from the NHTSA (2015) indicated in 2013, there were 411 fatal crashes, with 445 total deaths, reported to have involved the use of cell phones as distractions (14% of all fatal distraction-affected crashes). In these instances, the police accident report stated the driver was talking on, listening to, or manipulating a cell phone at the time of the crash.

A study conducted by Lerner & Boyd (2005) suggests drivers, ages 16–24, were more likely than older drivers to express willingness to use cell phones and other in-vehicle

technologies in various driving situations (Lerner & Boyd, 2005). Though some have argued that hands-free devices are the answer, speech-based interaction disrupts driving and still reduces the level of performance (He et al., 2013).

Younger participants were more likely than older participants to send or receive text messages while driving on at least half of their trips (Reyna & Farley, 2006). Beede and Kass (2006) studied the effects of cell phone use while driving by college-age drivers finding that driving performance was significantly impacted in four categories (traffic violations, lane position, attention lapses, and response time) when drivers were concurrently talking on a hands-free phone.

Distraction increases risk not only for auto drivers but also for pedestrians. Nasar, Hecht & Wener (2008) compared two groups of pedestrians walking through an established neighborhood. The control group walked the route without a mobile device; the other group walked the route while using a cellular phone. The group using cell phones while walking crossed unsafely into oncoming traffic significantly more often than the group without cellular phones. For pedestrians as for drivers, it was found that cognitive distraction due to cellular phone use reduces situational awareness and increases unsafe behavior (Nasar, Hecht, & Wener, 2008). Smith, Schreiber, Saltos, Lichtenstein and Lichtenstein (2013) studied the impact of cell phone distraction on pedestrians and identified 310 cases of phone-induced distractions resulting in an emergency room visit. This study determined 72 percent of these events involved falls, 68 percent of the people involved were female, and 54 percent were women under age 40. The researchers added that the use of smartphones, with their more enticing features, increases the risk of such accidents (Smith et al., 2013).

Currently, the promulgation of laws banning use of cell phones is progressing slowly. Fourteen states and United States Territories (District of Columbia, Puerto Rico, Guam, & the U.S. Virgin Islands) prohibit all drivers from using hand-held cell phones while driving. Currently, there are no state bans on cell phone use for all drivers, however, 38 states including the District of Columbia have passed legislation that bans all cell phone use by novice and teen drivers. Focusing more directly on text messaging; currently 46 states, including the District of Columbia, Puerto Rico, Guam and the U.S. Virgin Islands, ban text messaging for all drivers. Of these, all but five have primary enforcement for this offense, meaning law enforcement can stop and cite them for using a cell phone while driving (Governors' Highway Safety Association, 2015).

To raise awareness of the risk of distractions involving cell phones, one needs an effective communication tool. The following section discusses a successful tool in health communication utilized to address many serious public safety and health issues: the public service announcement.

## Public Service Announcements

### History of Public Service Announcements

A public service announcement (PSA) is "an announcement for which no charge is made and which promotes programs, activities or services of federal, state or local governments or programs or services of non-profit organizations and other announcements regarded as serving community interest" (Dessart, n.d., p.1). Lory (2014) described PSAs as "formal informational advertisements whose main goal is to prevent or encourage certain actions" (p. 54). PSAs are short in length and seek to inform, persuade, or motivate positive healthy behaviors (Borzekowski & Poussaint, 1999). These appeals can take the form of either video or radio

broadcasts. With the advent of social media, specifically YouTube, many amateur producers of PSAs have entered the arena.

The U.S. government was the first entity to use PSAs. During the Civil War, northern newspapers allowed the government to post free advertisements selling bonds to raise money in support of the war. Soon thereafter, the use of such advertisements to inform the public and gather support on specific issues became common (Goodwill, n.d.). The success of these programs continued after the war and branched out into other health and public concerns (Dessart, 1982; Kulkarni, 2010).

The type of PSA that is familiar today originated during World War II. Similar to the efforts during the Civil War, the U.S. Government promoted the war effort and marketed war bonds to help finance the war, which led to the development of the War Advertising Council (Goodwill, n.d.). However, instead of using the newspaper as a primary method, the government used the popular media of the times; movies and radio. Creative short films and radio segments addressing these topics were created and shown prior to movies and radio programs. After the war, these methods were applied to social issues (Kulkarni, 2010) and the War Advertising Council was changed to the Advertising Council (Goodwill, n.d.) The Smokey the Bear campaign was born in 1944 and is still in circulation. Due to the success of this campaign, 96% of adults and 88% of children recognize the bear's message of preventing forest fires (Fulton, 2014). With the onset of the television in the 1950s, television became the primary route of dissemination of PSAs (Dessart, 1982).

**Purpose and Function**

Mass media, due to its constant presence, has the ability to influence and orient public opinion, establishing how people think and what they think about (Ivan, 2013). PSAs can do

three things simultaneously. First, they spread knowledge and awareness nationwide on public issues; second, they can influence attitudes; third, effective PSAs can result in behavior change (Borzekowski & Poussaint, 1999).

Many of the most familiar PSA characters and slogans exist due to the efforts of the Advertising Council, or Ad Council for short. The Ad Council is a private, non-profit organization that obtains talent from the advertising industry to produce critical messages on pressing social issues in America (AdCouncil, 2014). Some of the most memorable PSAs have involved characters and slogans, such as Smokey the Bear saying, "Only you can prevent forest fires," McGruff the Crime Dog's challenge to "Take a bite out of crime," and the Crash Test Dummies, who promoted seat belt usage. Some other campaigns for which the Ad Council has been responsible included "Friends don't let friends drive drunk" and "A mind is a terrible thing to waste," the latter produced jointly with the National Association for the Advancement of Colored People (NAACP). The PSA campaign on drunk driving was a combined effort of the Ad Council and the NHTSA and ran from 1983 to 1999. When it was released, there were an estimated 21,000 drunk driving crashes annually; during the life of the campaign, this number declined to 12,500 per year (PR Newswire, 2014).

With the advent of personal computers, laptops, electronic tablets, smartphones, and social media, these video appeals promoting change are no longer created solely by professional advertising groups, the government, or experts in the field. Many websites maintain PSA-type material produced by users, often called user-generated content (UGC). A cursory review of these sites indicates PSAs are being created by local or state government, public and private colleges and universities, private industries, and even students at various school districts.

Anyone with a video camera, editing equipment, and passion about a subject can create video appeals in PSA format.

On its website, the Ad Council has 10 PSAs pertaining to cell phone use while operating a vehicle. Using a search engine to search for PSAs concerning this subject, an individual can find more than 200 video appeals on the popular social media YouTube. According to Cheng (2007), "YouTube draws approximately 20% of all Hyper Text Transfer Protocol (HTTP) traffic that links the web, which is nearly 10% of all traffic on the Internet" (Cheng, 2007, p.1); Paek, Hove, Jeong, & Kim, 2011). The Pew Internet and American Life Project reported that "among Internet users aged 18–29, 89% report they view content on video-sharing sites, and 36% do so on a typical day"(Madden, 2009, p.3). Paek et al. (2011) observed that encouraging Internet users' creation and delivery of public service messaging and video appeals has the positive effect of reinforcing professionally developed PSAs and furthering the promotion of social causes and issues to target audiences. The researchers added that PSAs found on YouTube were frequently developed by groups led by teenage peers. Their study comparing PSAs produced by issue experts and by teenage peers found that, with one exception (a PSA concerning child abuse prevention developed by an issue expert), the PSAs created by similar peer groups were more effective.

**Appeal Types and Messaging**

To be effective, PSAs must be relevant to the audience. The message must be interesting and leave the audience with a clear message resulting in attitude or behavior change (Goodwill, n.d.). Viewers watching the same PSA may have different interpretations, which can lead to alternative opinions and conduct (Petty, 1991; Santa & Cochran, 2008). PSAs can identify the negative consequences of an activity such as drug use or lack of seatbelt use, a method called

negative message framing, or they can focus on the positive consequences of stopping the activity, thus engaging in positive message framing (Jung & Villegas, 2011). There are many ways to impact an audience with a PSA. The most common ways are fear, empathy, humor, and an informational approach (Santa & Cochran, 2008).

Threatening messages regarding health risks, referred to in the social and health psychology literature as fear appeals, are widely used in health communication (Ruiter, Kessels, Peters, & Kok, 2014). These PSAs create fear and worry in the target audience due to perceived negative effects from the behavior of concern, such as drinking and driving, texting and driving, drug use, and so on (Bagozzi & Moore, 1994). Stephenson found the fear approach affects the viewer in one of three ways: the viewer will process the suggested action and follow it, ignore it, or hear the threat but ignore the message (Stephenson & Whitte, 2001; Santa & Cochran, 2008). The level of fear exhibited in the PSA plays an important role in the message's effectiveness. Boster and Mongeau found moderate fear appeals are appropriate, as too little fear does not motivate people to change their behavior and too much fear creates aversion to the PSA. This is known as the "curvilinear hypothesis" (Boster & Mongeau, 1984; Weber, Dillow, & Rocca, 2011). Roseman, Wiest, and Swartz concluded that humans' natural reaction to high fear-inducing stimuli is to escape. Thus, when a PSA engenders too much fear in viewers, they will stop paying attention to the appeal and that particular PSA becomes useless (Boster & Mongeau, 1984; Weber, Dillow, & Rocca, 2011). PSA developers must be careful with fear appeals as they may occasionally provoke censorship by a public service director who considers the material too explicit or controversial (Goodwill, n.d.).

Whereas fear appeals focus more on the message's recipient, or direct appeal, empathy appeals are indirect and encourage viewers to help others (Bagozzi & Moore, 1994). Empathy is

the feeling of understanding and sharing another person's experiences and emotions; the ability to share someone else's emotions or feelings (Empathy, n.d.). Slater stated PSAs often attempt to evoke empathy by highlighting what can happen to others as a result of the targeted behavior (Slater, 1999; Santa & Cochran, 2008). There are three different types of empathy: affective empathy, in which viewers share emotions with the PSA characters; cognitive empathy, in which the viewers adopt the characters' perspective; and associative empathy, when viewers experience the message as if it were happening to them (Shen, 2011).

In addition to empathy and fear, PSAs often use humor to stimulate the desired behavior change (Swanson, 1996). Humor is a social construct. Martineau (1972) stated, "Humor is a pervasive phenomenon in the social fabric of most, if not all, societies" (p. 101). However, humor is also deeply entrenched in each individual society, so what is perceived as funny in the United States may not be perceived as funny in Europe or Asia. The key point is almost everyone likes to laugh and is therefore affected favorably by presentations causing people to laugh.

Research on the role of humor in PSAs is limited. Some research has suggested a positive correlation between the use of humorous clips and students' understanding of course content, improved engagement in lessons, and critical thinking (Gordon, 2014). Bleakley et al., (2015) found that supposed argument strength was the key mediator for the indirect effects on young viewers watching humorous PSAs concerning health concerns from sweetened beverages. Smith (2003) stated "Humor is a format that is useful, though often PSA topics do not lend themselves to levity and comedy" (Smith, 2003, p. 347). Swanson contended humor can be used to support appropriate behavior, generate dialogue, and make effective connections with the audience about public service campaigns (Swanson, 1996).

The informational approach is based on the belief that the knowledge, or awareness, of the problem will lead to behavior change (Santa & Cochran, 2008). This type of appeal is the most commonly used approach. In a 1999 study, this appeal was found to be the most common in anti-DUI PSAs appearing in 48% of them (Slater, 1999). Slater (1999) added an informational appeal often raises awareness of a problem through testimonials, usually with a celebrity who presents information on the topic. Facts and statistics are usually provided to the viewers, along with information on how to stop this problem (e.g., drunk driving, HIV, smoking). Slater noted this form of PSA is not very effective for viewers who do not identify with the celebrity featured in the testimonials. Informational PSAs provide the viewers with data and require cognitive processing to comprehend the message which can lead to greater persuasive effects. If the viewer finds the PSA relevant, then he or she is capable of processing its content (Weber, Dillow, & Rocca, 2011).

Identifying the most effective message strategies is vital in influencing health-related attitudes and behaviors (Baillie, 1996; Slater, 1999). Information-based messages are the most common approach in health education (Slater, 1999). The empathy approach was perceived to be the most effective at eliminating undesired behavior followed by fear and informational approaches (Santa & Cochran, 2008). On the other hand, fear appeals may have limited potential because fear messages are volatile and unstable in their ability to increase recall (Walters, Walters & Priest, 1999). Concerning the actors in video appeals, research using PSA videos on smoking resistance identified a connection between actor appeal and the PSA message (Slater, 1999). Actor appeal was associated with stronger smoking resistance self-efficacy among teenagers (Shadel, Fryer, & Tharp-Taylor, 2009). When creating effective PSAs, the appeal type must be considered. The best bet for a successful campaign is to start with a single strategy that

is then adapted to the audience by considering political, social, and cultural conditions (Walters, Walters, & Priest, 1999).

## Examination of Theoretical Constructs

The primary goal of PSAs is to produce change through a combination of education and persuasion. Therefore, PSA research has focused mainly on evaluating persuasion, behavior change, influence, and emotions elicited. This section of the literature review discusses PSA research, focuses on theoretical constructs used, including the Limited Capacity Model for Motivated Mediated Message Processing (LC4MP), Protection Motivation Theory, and the Extended Parallel Process Model. A brief discussion of these theories led to the rationale for the use of the Health Belief Model as the theoretical framework chosen for this study.

The LC4MP is a data-driven model that explains how the viewer's cognitive processes mediate messages (Fulton, 2014). The model is designed to elucidate how appeal messaging and media work together with the viewer's information processing system (Blake & Schlütz, 2012). When viewers process health messages, three major subprocesses occur: encoding, storage, and retrieval. It is noted that these operations occur constantly, continuously, and simultaneously (Lang, 2006). To develop a successful message, it is important to ensure that important parts of the message are encoded and sufficient amount of time is given to the viewer to permit retrieval. If the message is too fast, retrieval will suffer (Lang, 2006). The allocation of resources for the message is influenced by viewer characteristics as well as features of the appeal, such as its content and the media used (Lang, Borse, Wise, & David, 2002). Eventually, the desired viewer motivation—either a positive response or an avoidance or defensive response—is the primary determinant of the approach taken (Lang, Sanders-Jackson, Wang, & Rubenking, 2013).

Moore (2009) posited that various types of personalities process health communication messages differently. He found sensation seekers and risk takers are more likely to process high message sensation value (MSV) advertisements, which combine video, audio, and content to create new, emotional, or dramatic messages that will produce emotional arousal (Moore, 2009). This information can be used when designing health communication campaigns. Fulton's (2014) research using the LC4MP model as an interpretive framework indicated as the viewer's interest and entertainment level increased, so did long-term recall, but the same was not seen in short-term responses.

In this study, the focus was on the impact of appeal types in cell phone PSAs and how they change attitudes and information retention. The LC4MP can help to explain how different types of appeals have an impact in processing the information into long-term retention, which would be a beneficial result. However, this study is primarily focused on how the appeal types impact college student's attitudes both immediately and long-term and LC4MP is limited in that capacity. A model is needed that provides data on how appeals effect viewer's attitudes as well as information retention.

**Protection Motivation Theory**

The Protection Motivation Theory (PMT) has been used extensively in health communication research. It was developed to decode health behavior motivation based on disease prevention and/or health threat perspectives (Plotnikoff et al., 2010). Cameron (2009) explained that PMT involves "evaluating the perceived harm, perceived susceptibility and perceived efficacy of the behavioral response" (p. 310) the viewer obtains from the PSA or health communication. The efficacy segment was later subdivided into two separate values: response efficacy, or whether the proposed behavior can actually reduce the threat, and self-

efficacy, or whether a person can enact the proposed behavior (Cameron, 2009). PMT is often used in PSAs to direct a behavioral change that involves a cognitive mediation process by utilizing threat and coping appraisals (Banerjee & Greene, 2012).

The term *threat* describes the extent to which people feel susceptible to an identified health or safety risk and their perception of the severity of the risk, and *coping* is the extent to which the suggested prevention method will protect them and to which they can implement such behavior (e.g., due to factors of expense or ability) (Lee, Kilbreath, Sullivan, Refshauge, & Beith, 2007). Threat appraisal includes both a maladaptive response reward (both intrinsic and extrinsic rewards) and risk or threat perception. Simply, if the person perceives any type of rewards from the undesired behavior, that perception will increase the chance of selecting the unfavorable response (e.g., drinking and driving, or smoking during pregnancy). Conversely, if subjects view the threat to be greater than the rewards, then the desire to perform the undesired activity decreases (Bui, Mullan, & McCaffery, 2013). Courneya and Hellsten found that the level of concern regarding a threat is affected by perceived vulnerability and perceived threat level, while response appraisal includes the individual's assessment of the effectiveness of the suggested response and their ability to perform that particular response (Courneya & Hellsten, 2001; Singh, Orwat & Grossman, 2001). Emotional appeals, especially fear appeals, affect people differently and may make them more receptive to the message.

A study conducted by Henley, Gollnow, Ranganathan, and Cherian (2012) using the PMT theory found college students who assess the health risk vulnerability resulting from drinking and driving are less inclined to engage in this behavior. The study also indicated PSAs showing drinking and driving as socially unacceptable provided better results than others. Banerjee and Greene (2012) examined the efficacy of anti-cocaine visual messages on college

students—specifically, before-and-after images of cocaine users from a variety of anti-cocaine websites. The research showed greater perceived severity and self-efficacy with intentions to stay away from cocaine than control group participants (Banerjee & Greene, 2012).

The PMT model is more subjective and suggests individuals will choose an action focusing on a reward to avoid a punishment (Cameron, 2009). Limitations identified by Ch'ng (2014) raises questions that the theory is more behaviorally-driven as opposed to cognitively-driven. Although PMT could be used in PSA research, the PMT is limited in the overall constructs utilized, focusing primarily on threat and coping appraisal, and assumes rational information processing (Cameron, 2009). Unfortunately, this model does not include some valuable constructs such as barriers and cues to action which may capture valuable information pertaining to participant's attitudes that the appeals may impact. Therefore, this model is not as comprehensive as the Health Belief model.

In the current study, the focus was on the impact of messaging techniques contained in cell phone PSAs and how they changed attitudes and affected information retention. Also, the current study investigated a variety of appeal types, not limited to only fear appeals.

**Extended Parallel Process Model**

The Extended Parallel Process Model (EPPM) (Witte, 1992) builds on previous models, such as Howard Leventhal's (1970) Danger Control and Fear Control Framework. The first assessment is of one's perceived susceptibility and the severity of the threat. If the perceived susceptibility and perceived severity are low, the EPPM posits the individual will ignore and not process the message. If the susceptibility and severity of the proposed risk are considered high, then the individual will move to an efficacy appraisal (Cameron, 2009). Perceived efficacy also comprises two components: self-efficacy, or how the person feels about being able to carry out

the recommended response to the event, and response efficacy, or the person's confidence that the recommended response action will be effective (Duong & Bradshaw, 2013).

When a threatening message produces a high threat appraisal along with self-efficacy, then individuals are both capable of taking and willing to take adaptive steps to address the threat. However, if a frightening message results in low efficacy, it can lead viewers to "tune out" and avoid information on the fear-inducing issue (Goodall & Reed, 2013). This result occurs when emotion-based "fear control processes" are activated, causing individuals to activate a defense mechanism (Brown & Lewis, 2003).

Research by Basil, Basil, Deshpande, and Lavack (2013) on workers' response to workplace safety messages showed using graphic images with fear appeals increased the value of efficacy messaging. Use of graphic threat depiction without evidence of self-efficacy resulted in the highest levels of fear. In contrast, the messages that added a self-efficacy segment lowered the identified level of fear and resulted in a positive attitude toward the message (Basil et al., 2013). A study by Smith et al., (2008) on the use of hearing protection by farmers and landscapers also applied the EPPM theory. Brochures were created to increase the perception of the threat of hearing loss and the perceived efficacy of hearing protection. After reviewing the brochures, participants felt an increase in threat perception, efficacy, and intention to use hearing protection (Smith et al., 2008).

The EPPM model requires the combination of an emotional response and a desire to eradicate the danger triggered by fear appeals (Cameron, 2009). Although the EPPM could have been used in the current research, due to its ability to tap into the susceptibility and the severity of appeals, it was not chosen since the current study investigated a variety of appeal types, and

did not limiting itself to fear appeals. To that end, this study needed a more complete model. Therefore, the EPPM model was not used in the current study.

**Health Belief Model**

This study utilized the Health Belief Model (HBM) to understand how specific messaging in video PSAs, pertaining to cell phone use while driving, can influence attitudes and affect information retention. Bandura (2004) explains the HBM this way; unless individuals think their actions will lead to desired outcomes, they are not motivated to act or keep trying when facing a difficult situation.

The Health Belief Model (HBM) remains one of the most recognized conceptual frameworks in understanding health behaviors (Guvenc, Akyuz, & Açikel, 2011). It is used to predict health and safety behaviors by providing a framework that analyzes personal attitudes toward preventative health behaviors. HBM has been used to analyze a wide variety of health behaviors, such as use of vaccines and wearing seatbelts or bicycle helmets (Ross, Ross, Rahman, & Cataldo, 2010). This study used the HBM to predict how cell phone PSA messaging techniques impact college students' attitudes and information retention.

The HBM proposes that people show a positive reaction toward a proposed health behavior when: (a) They feel that they are at risk, (b) The risk is serious, (c) A change of behavior is beneficial for them, (d) They can eliminate any barriers to the health behavior, and (e) They have the willingness to take such actions (Vazini & Barati, 2014).

The HBM was developed in the 1950s by social psychologists Irwin Rosenstock, Godfrey Hochbaum, S. Stephen Kegels, and Howard Leventhal, who were working with the U.S. Department of Health to predict health behaviors based on individuals' attitudes and beliefs (Adams, Hall, & Fulghum, 2014). The primary conceptual framework consists of five

constructs: perceived susceptibility, perceived severity, perceived benefits, perceived barriers, and cues to action

These components are organized similar to a multiple regression equation, with the behavior as the criterion and the separate components as predictors (Prentice-Dunn & Rogers, 1986). A more in-depth look at the five constructs follows.

First, perceived susceptibility refers to people's intuitive belief with regard to the risk of the health or safety threat, or how individuals perceive vulnerability to the threat (Ross et al., 2010). Second, perceived severity is the individual's belief regarding the seriousness of the threat, such as the possibility of illness, injury or even death (Ahadzadeh, Pahlevan-Sharif, Ong, & Khong, 2015). A combination of perceived susceptibility and severity constitutes the threat to an individual (Adams et al., 2014).

On the other hand, the perceived benefits construct represents the person's belief that participating in the promoted health behavior will minimize the susceptibility and severity of the threat. The person may believe intervention will result in positive benefits such as early disease detection (e.g., by means of colonoscopy or mammography) or eliminating the potential risk (e.g., through vaccines). Fourth, perceived barriers are the obstacles the individual needs to overcome to complete the recommended action or behavior (Adams et al., 2014). Individuals then assess the apparent barriers and consider whether they can overcome the difficulties or negative consequences of executing the recommended action (Montanaro & Bryan, 2014). For example, an individual must consider and overcome the fear of pain from a vaccine injection in order to receive its benefits (i.e., not getting the illness). Rosenstock posited that people ask whether the benefits outweigh the barriers to performing the behaviors and also whether there are

cues to action that remind individuals to engage in the safety or health behavior (Rosenstock, 1974; King, Singh, Bernard, Merianos, & Vidourek, 2012).

The fifth construct, cues to action, represents "accelerating forces causing a person to feel a need to act" (Hoseini, Maleki, Moeini, & Sharifirad, 2014, p. 648). Such cues can include information sources, parents, friends, and events (such as an accident or death of which the individual is aware) that lead an individual toward the proposed action (Adams et al., 2014).

A sixth construct, self-efficacy, was added to the original HBM in 1988 to increase its explanatory power. Self-efficacy, as noted above, is a strong predictor of positive health behaviors and refers to the individual's confidence in his or her ability to perform the advised action. The lack of self-efficacy is the perceived ability to overcome the perceived barriers in order to taking the health action (Adams, 2013). The current study modified Champion's Health Belief Model Constructs Instrument (Champion, 1984) which breaks down each HBM construct by using a variety of assessing statements and uses a Likert scale to quantify these statements. This instrument was later adapted by Adams, Hall and Fulghum (2014). The results provide the researcher evidence on self-efficacy which indicates whether the participants can overcome perceived barriers and perform the acceptable health activity.

**HBM and PSAs**

The HBM's constructs are straightforward and easily understood, and this model can be used to analyze nearly all health and safety scenarios. Understanding how the HBM can be utilized in this study to assess video appeals is also straightforward. The steps include: (a) gauging the video PSAs' content and messaging to identify what HBM constructs are incorporated, (b) assessing how the information and emotional appeal within each PSA creates or eliminate the model's six constructs to allow for a health behavior change by the receiver, and

(c) evaluating the constructs that play a part in information retention. This model can also be used to evaluate how specific emotional appeals affect the impact of the constructs for specific demographics.

## Previous Studies

No previous studies using the HBM specifically on video PSAs were identified, but the HBM has been used extensively in health education and communication research, primarily with regard to a range of health disorders. One study pertaining to bicycle helmet use by college students was reported. Ross et al., (2010) found bicycle helmet wearers reported a higher regard for severity of consequences, more perceived vulnerability, greater benefits and cues to action, and fewer barriers to using helmets than those who did not wear helmets (Ross et al., 2010).

Among the studies involving health issues, El-Rahman Mona, Mahmoud, Amal, & Mahmoud (2014) investigated the application of alcohol intervention on hospitalized alcoholism patients. They found providing health education increased the patient's level of awareness and the person's perceived susceptibility and severity of the disease, two important pieces of the HBM. In a study using HBM, Nexøe, Kragstrup & Søgaard (1999) found a correlation between age and perceived susceptibility for the influenza vaccine. More specifically, older participants felt more susceptible to influenza; therefore they sought out the vaccine. Going further, the study found where there was an increase in perceived severity from influenza combined with an increase in the perceived benefits from the vaccine, barriers towards the vaccine decreased. This combination ultimately influenced the participant's decision to obtain the immunization.

Hoseini et al., (2014) looked into the effects of health education on the physical activity of women at risk for hypertension using the HBM as an analytical tool. They identified a significant increase in levels of physical activity in the group who obtained health education

pertaining to hypertension compared to the control group. This education program helped the patients change their behaviors to include physical activity.

The HBM assists in explaining how health communication and education impacts individuals. (Field et al., (2013) and El-Rahman Mona et al., (2014) explained that the main feature of the HBM explains why individuals make decisions regarding their health and safety interests. Whether people take a particular action to protect their health is affected by whether they believe they are susceptible to the occurrence of a health or safety event. People who are aware of and concerned about their wellness may be more motivated to improve or maintain their health (El-Rahman Mona et al., 2014). Champion (1984) created an instrument for HBM using the HBM constructs and found this model useful in predicting breast self-examination to detect early breast cancer in women. The instrument analyzed answers to conceptual statements within the five original constructs to provide the researcher enough data to determine the likelihood of self-efficacy, in this case to conduct self-examinations. A version of this HBM instrument was utilized by Adams, Hall and Fulghum (2014) to assess attitudes of patients receiving outpatient hemodialysis pertaining to vaccine acceptance. The findings suggested identifying specific parameters within the HBM can aid in the development of education materials and strategies to increase acceptance of vaccine by this population (Adams, Hall & Fulghum, 2014).

Chapter 2 discussed the literature related to this study to include the issues that have arisen pertaining to cell phone use and focused more intently on the hazards of distracted driving, more specifically texting and driving. The chapter also examined a variety of theoretical constructs and previous studies before focusing on the Health Belief Model which is the

theoretical framework used in this study.  Chapter 3 will discuss the methodology and subjects used in this study

# CHAPTER THREE

# METHODS

## Introduction

Motor vehicle crashes are the leading cause of death for teens in the United States, more than homicide and suicide combined. Furthermore, drivers who text while driving are 20 times more likely to have an accident than those drivers who are not texting (Department of Transportation, 2015). The average college student is part of the millennial generation; these young adults have grown up in a world where cell phones and technology have been a daily influence and they have become dependent on the technology. This dependence on the cell phone may become a hazard to them, and other motorists, when operating vehicles and using the cell phone. Given this information, along with the proliferation of cell phones and smartphones, and the statistical data on hazards associated with this form of communication, this study of PSAs on texting and driving is a valuable study within the communication field.

This study focused on the impact that video public service announcements (PSAs) discouraging the use of cell phones while driving have on college students. The research concentrated on how messaging techniques influence college student's attitudes towards cell phone use while driving and also investigated how these messages affect information retention. As Bigsby, Cappella and Seitz (2013) analyzed, the most direct way to assess effectiveness of a message is testing in the field with the target population.

As stated earlier, Champion's Health Belief Model Constructs Instrument (1984), with enhancements from Adams, Hall and Fulghum (2014), was modified for the current study. A quasi-experimental design was used to capture data. Such methods can help provide insights into possible cause and effect relationships (Buddenbaum & Novak, 2001).

The subjects completed a pre-survey which obtained demographic data, general driving safety attitudes, baseline HBM data and dates for PSA viewing (Appendix C). When the subjects arrived at the viewing location they were assigned to one of four groups. Three groups each watched a different PSA appeal pertaining to cell phone use while driving; the fourth group was the control group who watched two video clips on general driving discussions. Upon completion the subjects were cued to complete a follow-up survey which focused on HBM data and details pertaining to the PSA content. To determine information retention and impact on attitudes, a follow-up survey was administered approximately two weeks after the initial exposure. This survey was identical to the immediate survey.

The researcher developed a survey based on Champion's (1984) instrument, to include Adams (2014) modifications (Appendix C). As was explained prior, the instrument breaks down the five original constructs of the HBM: susceptibility, severity, benefits, barriers and cues to action with conceptual statements. The researcher created survey questions under each construct that were rated using a 7-point Likert scale. This allowed quantification of participants' attitudes pertaining to each construct. A composite health belief index was derived by adding four constructs and subtracting the barrier construct response to reveal a clear positive/negative quantification. As the current study is looking at attitude change pertaining to texting and driving, the data did not include the likelihood of self-efficacy.

## The Stimulus

Video PSAs on the topic of cell phone use while driving abound on the Internet. The researcher reviewed approximately 180 PSAs. These PSAs were produced by a wide variety of countries, for-profit and not-for-profit organizations, and private groups. The production quality included both professional and amateur videos. The majority were produced by health agencies,

telecommunication companies, law enforcement agencies (state and regional) and school districts throughout the United States. The PSAs used in this study were gathered from the Advertisement Council web site, and the NHTSA website; Distraction.com. The PSAs evaluated were chosen from the websites mentioned above and were evaluated by containing the following characteristics; produced in United States, human actors, intended audience, production quality, appeal type, and length. Because the study focused on the impact to college students in the United States, foreign-made PSAs were removed. Human-based PSAs were selected over computer-generated or animated PSAs. The run time of the selected PSAs were between 30 to 90 seconds in length. PSAs that ran shorter or longer were eliminated. From there, the factors considered for inclusion involved target audience (college students), production quality, and appeal types. The target audience was college students so those PSAs that did not appear to impact this group were removed. Although many amateur PSAs were well produced and provided an impactful message, the researcher wanted to use PSAs in this study that were of a higher quality production. The remaining PSAs were narrowed down by focusing on the relevant message and appeal types. The researcher divided the types of PSA video appeals into three types; humorous appeal, fear appeal, and informational appeal. A fourth group was the control group and were shown short general vehicle driving videos where the topic of cell phone use while driving was not mentioned. The remaining PSAs were evaluated and three PSAs were chosen for each appeal type and two were chosen for the control group. Transcripts of each PSA and control group videos are available in Appendix A. As a result eleven PSAs/videos were chosen. The following is a breakdown of the appeal type and video PSAs chosen for this study along with the length, a brief description, and the agency which sponsored the message.

**Humorous Appeals**

*One Unlucky Guy*- :60 seconds (AdCouncil). A young man explains the risks of being in hazardous situations while actually being involved in those situations throughout the PSA. He is mugged, struck by lightning, and in a crashing plane. He ends explaining the odds of car accidents drop dramatically when you stop texting and driving.

*Afterlife*- :60 seconds (AdCouncil). A young woman finds herself in the afterlife along with the grim reaper and two other souls. It is obvious she has been in an accident with cuts and torn clothes. She was explaining how she had to text her friend about a boy while driving and she ran into something. The other souls tell her texting is dangerous. She looks for her missing cell phone and finds it embedded in her stomach, pulls it out and tries to find service.

*Not Safe for Anyone*- :30 seconds (AdCouncil). A car is traveling down a dark road. Headlights catch a young man walking into the roadway and he's texting, oblivious to the car. The car stops and beeps. He is caught in the headlights and stops; he becomes startled and runs across the road. The video cuts to the interior of the car to see two deer heads looking at the man and then at each other. Three more people who are texting run out in front of the stopped car.

**Fear Appeals**

*Manifesto Online*- :31 seconds (U.S. Dept. of Transportation/NHTSA). A young girl is driving her friends and begins to text. She doesn't stop at an intersection and the car is hit by a truck.

*Don't Text and Drive PSA*- :60 seconds (Tranter Grey Media, GA). Two vehicles are driving on opposite sides of the roadway. One car is driven by a teen who is texting and another car is driven by a mother with two children in the car. The teen's car is going into the oncoming lane and motion stops. The two drivers get out to speak to each other. The mother pleading for

the teen to stop texting but the teen explains her text is too long and she will be unable to stop. They return to the cars, look at their passengers and motion begins again. The cars collide.

*No Glance is Worth a Life, It Can Wait*- :30 seconds (AT&T). A woman is texting in her car and crosses into the path of an oncoming truck. The crash is first shown backwards and in slow motion to the point of impact and is then played in its entirety and at regular speed.

**Informative/Celebrity Appeals**

*Demi Lovato PSA*- :31 seconds (AT&T). This young actress and singer talks about her method to keep from texting and driving. The hashtag X program tells others you're driving. (#X)

*Rascal Flatts PSA*- :38 seconds (AT&T). This country singing trio talks about the dangers of texting while driving and discusses a method to keep from texting and driving. The hashtag X program tells others you're driving. (#X)

*Chandler PSA*- :32 seconds (AT&T). A young man discusses an accident he caused by texting while driving where three children were killed.

**Control/General Driving**

*Driving Pre-Test*- 2:30 minutes (Washington State Department of Licensing). A voice-over/narrator explains the important points of preparing for a driver's test while actors portraying a young driver and examiner act out the narration.

*Lane Change and Turning*- 1:25 minutes (Washington State Department of Licensing). A voice-over/narrator explains how to safely conduct turns and lane-changes while operating a vehicle while actors portray a young driver and examiner who act out the narration.

## Production Qualities and Safety Effectiveness

Production qualities of each video PSA used in this study were evaluated by doctoral candidates in the Communications Media and Instructional Technology (CMIT) program at Indiana University of Pennsylvania, a mid-size Mid-Atlantic university. This rigorous program contains curriculum that provides the candidates media production and media/communication theory and criticism. Each video PSA was watched and evaluated by the participants who completed a survey (Appendix E). The PSAs sound, lighting, talent, effectiveness, and overall quality were evaluated using a five-point Likert scale. The safety effectiveness of the PSAs messaging was evaluated by faculty who currently teach a safety management curriculum at a different medium sized-Mid-Atlantic university. These individuals have industrial safety experience and also hold a Certified Safety Professional (CSP) certification, a PhD in Safety, or both. The evaluators watched each PSA and completed a survey (Appendix F). For this evaluation, the PSAs' message effectiveness, clarity, content and attention grabbing abilities were also rated on a five-point Likert scale. Both production quality and safety effectiveness data are outlined and quantified in Chapter 4.

## Sample

The research was conducted at Indiana University of Pennsylvania, a mid-sized, mid-Atlantic state-funded university with approximately 12,000 undergraduate students and 2,500 graduate students. The university is located on 375 acres in a small town, surrounded by a rural area. This institution was chosen due to geographic convenience, size, and because the student body is culturally diverse:

- 56 percent female, 44 percent male
- 17 percent minorities, 6 percent international

- 86 percent of the students are in-state, 7.5 percent out-of-state
- The student body represents 45 states and 56 countries
- 27 percent live on campus, 73 percent live off-campus (IUP, 2014).

Using convenience sampling, and to obtain a broad range of subject demographics and backgrounds, subjects were drawn from students in introductory courses in the Political Science and Communications departments. The researcher sent emails to faculty within these departments requesting a visit to their classes to solicit students. Care was taken to not solicit students in the upper level Communication classes, who may have completed video production courses. The concern is such experience may introduce bias regarding the production elements of the PSAs. When permitted to visit selected classes, the researcher explained the experiment process and answered all questions the students had pertaining to the research. To encourage participation, the students were informed that if they completed all three surveys, they were entered in a drawing for one of three gift cards. In addition, some faculty offered bonus points to encourage student participation in this study. Students were not made aware that they would be tested specifically on how the appeals influenced attitudes towards cell phone use while driving or the retention of the information. Students were told they would be evaluating the information and messaging of the PSAs. All students were given a sign-up form provided by the researcher. If students were interested in participation they completed the form with contact information and returned it to the researcher.

Interested participants were then sent an email from the researcher. The body of the email contained a copy of the informed consent along with a Qualtrics link (Appendix B). Students who elected to participate were directed to the link to complete a demographic survey and obtain information on the participants pre-existing attitudes towards texting and driving.

Participants also scheduled a date, time, and location for the quasi-experiment (Attachment C). A unique ID number was assigned to each subject. After all the data was collected, the link of the ID to individual subjects was destroyed to preserve the confidentiality of the data.

## Experiment Process

When the subjects reported to the experiment location they were assigned to specific groups. This was in order to maintain as equal a distribution as possible based on gender. The grouping is shown in Table 1.

Table 1

*Grouping of PSAs used in Experiment*

| PSA Type | Number | PSA #1 | PSA #2 | PSA #3 |
|---|---|---|---|---|
| Fear | 26 | Manifesto Online | Don't Text and Drive | No Glance is Worth a Life. It Can Wait |
| Humorous | 26 | One Unlucky Guy | Afterlife | Not Safe for Anyone |
| Informative | 25 | Demi Lovato PSA | Rascal Flatts PSA | Chandler |
| Control | 25 | Driving Pre-Test | Driving Test #4 | |

The participants reported to the experiment location on their specific day and time and were asked to read and sign an informed consent. Based on their group assignment, they were placed at individual computer stations and provided video PSAs and a set of personal headphones. The participants viewed the assigned video PSAs twice and were asked to complete a paper-based post-survey (Appendix D). As stated earlier, each participant's was assigned a specific identification number so it could be paired with the follow-up surveys and ensured confidentiality. Students who viewed the video PSAs and completed the immediate post-survey were contacted via email approximately two weeks after the initial experiment and asked to complete an online long-term survey that was identical to the immediate survey. Those who did

not complete the emailed post-survey were sent two reminder emails. After the online survey was closed, participants were then contacted via email to debrief them on the purpose and focus of the experiment. The winners of the prizes were also contacted by email.

## Data Collection

Data from this experiment was collected using the three separate self-reporting surveys. As stated previously, the first screening survey sent via email to interested students gathered demographic data, general driving safety attitudes, baseline HBM data and set dates and times for the quasi-experiment (Appendix B). This data also allowed the researcher to place participants into similar groupings during the experiment. The second survey gathered data upon immediate viewing of the video PSAs. This survey utilized the constructs of the Health Belief Model to ascertain the PSAs ability to initiate attitude change (Appendix D) and included an information recall component. Lastly, a third survey, identical to the second survey, attempted to ascertain long-term recall of the PSAs along with any long-term evidence of the HBM constructs (Appendix D).

## Conclusion

For this study, participants completed numerous surveys to identify individual beliefs and perceptions pertaining to cell phone use while driving. The surveys were developed using the HBM constructs, similar to an instrument developed by Champion (1984) and later modified by Adams, Hall and Fulghum (2014). This activity discerned participants' perceived susceptibility, perceived severity of risk, perceived benefits, perceived barriers, cues to action, and self-efficacy/motivation in order to take the suggested action, namely eliminating texting and driving. The subjects then viewed video PSAs that fell within a specific appeal type and were asked to complete a post-viewing survey immediately after watching the video PSAs. Finally,

approximately two-weeks later, a third, long-term survey was completed. The statistics and interpretation of the collected data is explained in Chapter 4.

# CHAPTER FOUR

# FINDINGS

## Introduction

As outlined in the literature, cellular phones have become pervasive in society; so much that risks from distracted driving are increasing, especially in younger drivers. According to the AAA, distracted driving was a more serious problem than was previously identified. More recent data found distraction as a factor in nearly six out of ten moderate to severe teen crashes (AAA Newsroom, n.d.). The Health Belief Model, developed by Hochbaum, Leventhal, Kegeles and Rosenstock in the 1950s, stands as the foundation for this study.

This study examined how video PSA appeals, concerning texting while driving, impacted college student's attitudes and their retention of information. Three types of video appeals were chosen: humorous, fear, and information/celebrity. A fourth group, the control group, was shown general driving videos and included only as a check for possible history effects. Using a health belief model instrument designed by Champion (1984) and later adapted by Adams, Hall and Fulghum (2014), questions were developed to gauge responses/attitudes concerning texting and driving to each of the Health Belief Model's five constructs: perceived susceptibility, perceived severity, perceived benefits, perceived barriers and cues to action. A 7-point Likert scale, seen in Table 2 (Appendix C & D), was used for these responses.

The demographic survey (Appendix C) asked the participants questions derived from the HBM along with additional questions to obtain general attitudes related to safe behavior while driving. The second and third questionnaires (Appendix D) (taken immediate after watching PSAs and approximately two-weeks later) asked the HBM questions along with multiple choice

questions directly related to the content of the PSAs in order to gauge immediate and long-term retention.

Table 2

*Health Belief Constructs*

| Variable | # Questions | Possible Range of Values |
|---|---|---|
| Perceived Susceptibility | 4 | 1-Disagree Very Strongly<br>2-Disagree Strongly |
| Perceived Severity | 3 | 3-Disagree |
| Perceived Benefits | 3 | 4-Neither Agree or Disagree |
| Perceived Barriers | 7 | 5- Agree |
| Cues to Action | 5 | 6-Strongly Agree<br>7-Agree Very Strongly |

To identify the effects of the video PSAs, a quasi-experiment with matched groups was utilized. A pre-survey identified demographics and pre-experimental attitudes towards texting while driving. The survey was followed by two post-tests measuring attitudes and retention, both immediately and two-weeks later.

**The Stimulus**

As outlined in Chapter 3, several elements were considered when choosing video PSAs as the stimulus. The video PSAs included the following: 1) target college students; 2) professional production quality; 3) PSAs fell into chosen appeal types (humor, fear, informative/celebrity). The length for each PSA was between 30 seconds and one minute. The control group viewed a one-minute and a two and a half minute general driving videos.

Subjects were asked to complete an initial demographic survey in order to obtain general demographic data and attitudes pertaining to safe driving and texting and driving. The next phase of the study involved the subjects reporting to the experiment location. There they were placed into one of four matched groups in order to balance gender between the groups. The

participants watched multiple PSAs per group followed by a questionnaire to obtain recall data and attitudes post-viewing. Table 3 outlines the groupings along with the associated stimuli. Two weeks after watching the PSAs, subjects were asked to complete a long-term survey, once again to obtain recall data and attitudes pertaining to texting and driving.

Table 3

*Description of Video PSA Stimuli*

| Group | PSA Video Appeals | # Subjects |
|---|---|---|
| Control | General Driving Videos | 26 |
| Group 1 | Fear | 27 |
| Group 2 | Humorous | 26 |
| Group 3 | Informative/Celebrity | 26 |

**Stimulus Assessment**

An assessment of the stimulus used in this study was conducted to gather production quality and message effectiveness data to see if this criterion had a larger impact on the subjects than the appeal type. Simply put, the evaluation wanted to determine if there were elements in the PSAs, other than the appeal type, that may have been a factor in this study. To do this, the researcher obtained two separate expert groups; one to watch and rank the production aspects of the PSAs and the second to focus on the safety messaging component of the PSAs.

To assess the production quality of each appeal, eight CMIT doctoral candidates at Indiana University of Pennsylvania were asked to watch the PSAs and complete a survey (Appendix E) to evaluate the production quality and determine if there was a difference that may impact the effect on the participants. Each video appeal was assessed for the following: image quality, sound quality, lighting, talent/acting, impact, overall quality and effectiveness. A 5-point ordinal rating scale was used to evaluate these components from very good (1) to very poor

(5). To develop the composite score, an overall mean was comprised from the response mean of each element. The composite results can be found in Table 4 and a summary of the rankings in Table 5.

Next, five safety experts were asked to examine the safety messaging of the PSAs. After watching the PSAs, they completed a survey (Appendix F) to gauge the effectiveness, impact and accuracy of each video's safety content and messaging. The experts were asked to watch each video PSA and assess the following: attention grabbing, valid content, useful content, accurate content, clear safety message, bias-free and effectiveness. A 5-point Likert scale was used to evaluate these components from strongly agree (1) to strongly disagree (5). As with production components, the composite safety score was created by obtaining the overall means from the response means of each element. These composite results are also found in Tables 4 and 5.

Table 4

*PSA Production and Safety Quality Rankings*

| PSA | Appeal Type | Composite Production Rating | Production Rank | Composite Safety Rating | Safety Rank |
|---|---|---|---|---|---|
| Manifesto Online | Fear | 1.09 | 1 | 1.00 | 1 |
| Don't Text and Drive | | 1.25 | 3 | 1.15 | 3 |
| No Glance is Worth a Life | | 1.16 | 2 | 1.05 | 2 |
| One Unlucky Guy | Humorous | 2.93 | 9 | 1.73 | 6 |
| Afterlife | | 2.25 | 8 | 1.91 | 7 |
| Not Safe for Anyone | | 1.91 | 6 | 1.48 | 5 |
| Demi Lovato | Informative/ Celebrity | 2.14 | 7 | 1.93 | 8 (Tie) |

| | | | | | |
|---|---|---|---|---|---|
| Rascal Flatts | | 1.89 | 5 | 1.93 | 8 (Tie) |
| Chandler | | 1.86 | 4 | 1.40 | 4 |

Production Rating Key: 1 = Very Good, 2 = Good, 3 = Fair, 4 = Poor, 5 = Very Poor
Safety Rating Key: 1 = Strongly Agree, 2 = Agree, 3 = Uncertain, 4 = Disagree, 5 = Strongly Disagree

Table 5

*PSA Production and Safety Rankings by Appeal Type*

| Appeal Type | Composite Production Ranking | Production Rank | Composite Safety Rating | Safety Rank |
|---|---|---|---|---|
| Fear | 1.17 | 1 | 1.07 | 1 |
| Humorous | 2.36 | 3 | 1.71 | 2 |
| Informative/ Celebrity | 1.96 | 2 | 1.75 | 3 |

In terms of production quality, the fear appeal type rated best overall. Within this group the PSA called *Manifesto Online* ranked highest, followed by *No Glance is Worth a Life* and last, *Don't Text and Drive*. The Informative/Celebrity type appeals followed in second place. Breaking down this appeal type, we see the PSA called *Chandler* led followed by *Rascal Flatts* and *Demi Lovato*. The appeal type with the lowest ranking for production quality was the humorous appeal type. *Not Safe for Anyone* led this group in production qualities, followed by *Afterlife* and finally, *One Unlucky Guy*.

When looking at the safety composite ratings, the fear appeal again rated best overall. Within this group, *Manifesto Online* ranked highest followed by *No Glance is Worth a Life* and last, *Don't Text and Drive*. Humorous appeals came in second place led by the PSA *Not Safe for Anyone*, followed by *One Unlucky Guy* and lastly the video *Afterlife* rounded out this grouping. The final appeal group Informative/Celebrity had the lowest safety composite ranking and was led by the PSA called *Chandler* with the final two videos tied for second.

From this information it can be surmised that if production quality is a dominant factor then fear appeals would have the biggest impact, informative/celebrity second and humorous third. Correspondingly, if safety content is a prevailing factor, the results should reveal that fear appeals would show the largest impact followed by humorous appeals and lastly, informative/celebrity appeals. Conversely, if the hypotheses results do not follow these rankings, one must take into account the appeal type may be more important than the production quality and safety effectiveness.

## Profile of the Sample

Using convenience sampling, in order to obtain a broad range of subject demographics and backgrounds, subjects were recruited from students in various introductory courses in the Political Science and Communication departments in the fall of 2015. To eliminate any bias towards the production elements of the PSAs, these students were selected with the assumption they did not have advanced video production courses. Instructors were contacted, via email, requesting permission to visit their courses to recruit subjects. The researcher visited the classes, once receiving permission, to solicit volunteers for the study. The majority of the participants were from the Communication department. Initially, 195 completed the demographic and pre-experiment attitude survey, from there 105 completed the viewing portion with the immediate post-test survey, and 97 of these also completed the two-week post-test survey.

The division of gender among the sample was nearly even with 51 female and 54 male participants. The researcher attempted an even division between genders within the groups and subjects were grouped as they reported to the experiment location in a campus computer lab. Table 6 illustrates the distribution of gender among the appeal types.

Table 6

*Gender and PSA Appeal Type*

| Gender | | Control | Fear | Humorous | Informative | Total |
|---|---|---|---|---|---|---|
| Female | # | 12 | 9 | 14 | 16 | 51 |
| | % | 46% | 33% | 54% | 62% | 49% |
| Male | # | 14 | 18 | 12 | 10 | 54 |
| | % | 54% | 67% | 46% | 38% | 51% |
| Total | # | 26 | 27 | 26 | 26 | 105 |
| | % | 100% | 100% | 100% | 100% | 100% |

Table 7 shows the distribution of ages among the four groups all being 18 and older. As one can see, 19 year olds had the largest single grouping (28%) and combined with 18 year olds the two groups combined accounted for 41% of the participants. The majority of participants were 20 years or older (59%) but it is important to note that participants older than 22 only accounted for 12% of the total participants. Age was not a factor in grouping students. However, the most evenly distributed groups were 18 and 19 year olds.

Table 7

*Age and Video Appeals*

| Age | | Control | Fear | Humor | Informative/Celebrity | Total |
|---|---|---|---|---|---|---|
| 18 | # | 3 | 3 | 3 | 5 | 14 |
| | % | 11% | 11% | 11% | 19% | 13% |
| 19 | # | 9 | 6 | 7 | 7 | 29 |
| | % | 35% | 22% | 27% | 27% | 28% |
| 20 | # | 1 | 3 | 6 | 6 | 16 |
| | % | 4% | 11% | 23% | 23% | 15% |
| 21 | # | 3 | 6 | 2 | 6 | 17 |
| | % | 11% | 22% | 8% | 23% | 16% |
| 22 | # | 8 | 4 | 4 | 1 | 17 |
| | % | 31% | 15% | 15% | 4% | 16% |
| 23 | # | 1 | 0 | 1 | 0 | 2 |
| | % | 4% | 0% | 4% | 0% | 2% |
| 24 | # | 1 | 2 | 2 | 0 | 5 |
| | % | 4% | 8% | 8% | 0% | 5% |

| | | | | | | |
|---|---|---|---|---|---|---|
| 25 | # | 0 | 3 | 1 | 1 | 5 |
| | % | 0% | 11% | 4% | 4% | 5% |
| Total | # | 26 | 27 | 26 | 26 | 105 |
| | % | 100% | 100% | 100% | 100% | 100% |

## Control Group

This study looked at the impact of PSA appeal types using a quasi-experimental method with a pre-survey, an immediate survey and a second survey administered two-weeks later. To gauge if any external factors could be compounding the results, a fourth group, the control group, was utilized to examine if there was a significant change in their attitudes from the initial demographic survey through the long-term survey. The control group responded to the three surveys but was not shown any of the PSAs on texting and driving. Instead, they saw general driving videos that did not touch on the texting issue during the laboratory portion of the study.

In order to test for possible historical effects, the control group data was analyzed using the paired sample t-test to ascertain whether there were any significant changes in the control group between the demographic survey and the immediate recall survey and again between the demographic survey and the long-term survey. The analysis also examined the correlation between these scores. The results of these correlations and paired t-tests can be found in Tables 8 and 9.

Table 8

*Control Group: Demographic vs. Immediate Recall Comparison - Paired Sample Statistics and Correlation*

| Measure | Demographic | | | Immediate Recall | | | t-test | | Correlation | |
|---|---|---|---|---|---|---|---|---|---|---|
| | N | Mean | SD | N | Mean | SD | Value | Sig. | Value | Sig. |
| Susceptibility | 26 | 4.62 | .908 | 26 | 4.58 | .827 | .175 df=25 | .862 | .171 | .403 |
| Severity | 25 | 5.06 | .981 | 25 | 5.32 | .796 | -1.26 df=24 | .220 | .374 | .065 |
| Benefits | 25 | 5.98 | .02 | 25 | 6.31 | .849 | -1.64 df=24 | .114 | .473 | .017 |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Barriers | 26 | 3.03 | 1.11 | 26 | 3.00 | 1.08 | .179 df=25 | 859 | .634 | .001 |
| Cues to Action | 25 | 5.04 | 1.25 | 25 | 5.35 | 1.23 | -1.21 df=24 | .240 | .459 | .021 |
| Health Belief Index | 26 | 17.61 | 3.31 | 26 | 17.91 | 4.40 | -.364 df=25 | .719 | .435 | .026 |

Looking at the results of the paired sample t-test in Table 8, there was no significant change identified between the demographic survey and the immediate recall survey. The results also show stronger correlations exist in five between the demographic survey (pre-test) and the immediate survey (post-test) in all of the measures. Five out of the six measure with correlations of 0.374 to 0.634. The combination of the lack of significant change, along with the mostly stronger correlations between the demographic survey and the immediate survey, indicates that historical factors that may have affected the results of this study are unlikely.

Table 9

*Control Group: Demographic vs. Long-Term Recall Comparison - Paired Sample Statistics and Correlation*

| Measure | Demographic | | | Long-Term Recall | | | t-test | | Correlation | |
|---|---|---|---|---|---|---|---|---|---|---|
| | N | Mean | SD | N | Mean | SD | Value | Sig. | Value | Sig. |
| Susceptibility | 19 | 4.72 | .763 | 19 | 4.62 | .679 | .517 df=18 | .611 | .248 | .307 |
| Severity | 19 | 5.07 | .947 | 19 | 5.35 | .662 | -1.21 df=18 | .240 | .254 | .294 |
| Benefits | 19 | 6.12 | .976 | 19 | 6.14 | .796 | -.081 df=18 | .936 | .453 | .051 |
| Barriers | 19 | 2.93 | 1.09 | 19 | 2.98 | 1.11 | -.196 df=18 | .846 | .436 | .062 |
| Cues to Action | 19 | 5.33 | 1.12 | 19 | 5.33 | 1.32 | .000 df=18 | 1.00 | .230 | .343 |
| Health Belief Index | 19 | 18.31 | 3.41 | 19 | 18.45 | 2.85 | -.167 df=18 | .869 | .322 | .179 |

Table 9 reveals that the paired sample t-test shows no significant changes among the HBM constructs between the demographic survey and the long-term survey. It also shows

positive correlations between the demographic survey and the long-term survey in all six measures. While the correlations are not as strong as for the demographic to the immediate timeframe, the data suggests that control group did not reflect significant differences between the two surveys. This indicates it was unlikely there was a notable or systematic history effect that would impact the results of this study.

## Statistical Techniques

This study compared three different types of video PSAs pertaining to texting and driving and how they impacted the HBM constructs (see Table 2 above). The first two research questions use these constructs to study whether, and which, PSA appeal types created a change in attitude immediately and for long-term periods. Each hypothesis under the first two research questions related directly to the health belief model constructs. The last hypotheses in each research question looked at the overall health index. This resulted in six hypotheses for the first two research questions. The third research question, having two hypotheses, investigates whether the appeal type impacted information retention both immediately and two weeks later. For RQ1 and RQ2 the measures were based on combining the scores on individual questions related to the health belief model constructs (Table 2 and Appendix D). These questions were developed using a 7-point Likert scale which allowed for a wider range of possible values and the opportunities to utilize interval and ratio level statistics bolstering the research value of the study. For RQ3, the scores for both immediate and long-term retention were measured using ratio data. A multiple choice question format was used with one correct answer per question. Each score was based on 9 points; the number of questions on the recall portion of the surveys.

Statistical analysis was conducted using SPSS Version 23. Each research question began with an analysis of homogeneity using the Levene's test. If the Levene's test was not significant,

a one-way ANOVA test was used. If, however, the Levene's test was significant, revealing a concern with homogeneity of variances, a Welch's F test was used. For RQ1, the Levene's test revealed the health belief constructs; benefits and cues to action as significant, along with the health belief index, therefore a Welch's F test was conducted for these hypotheses. The Levene's tests for RQ2s hypotheses were not significant and all hypotheses were analyzed using one-way ANOVA. Lastly, the Levene's test for RQ3 revealed significance with the immediate recall scores, therefore a Welch's F test was run for the first hypothesis. In addition, if the ANOVA or Welch's F test identified significance the researcher administered post-hoc comparisons between the appeal types using the Fisher's least significant difference (LSD) test.

## Results

### RQ1: Does the type of appeal in a cell phone video PSA create an immediate change in college student's attitudes as measure by the Health Belief Model?

The first research question focused on the immediate impact of video PSAs pertaining to texting and driving on college students' attitudes between the three appeal types: fear, humorous and informative. The amount of attitude change of those exposed to one of the three appeal types (fear, humorous and informative) were measured by comparing attitudes from the demographic survey to participants' attitudes after watching video PSAs.

**H1.1: The type of appeal in a video PSA will impact the amount of immediate change in a college student's perceived susceptibility towards texting while driving.**

Susceptibility gauges the extent to which an individual feels vulnerable to possible harm from texting and driving. In such cases, it might seem that a fear type appeal would have a greater impact than a humor-based message. This would also support the production quality and safety effectiveness index which both suggested that fear appeals would be more dominant.

Informative approaches may have also increased perceived susceptibility but without the emotional impact of a fear appeal the resulting change would have been expected to be less.

Table 10

*Immediate Susceptibility Based on Appeal Type-One Way ANOVA*

| Appeal Type | N | Mean | Standard Deviation | Standard Error | F-value | Sig. |
|---|---|---|---|---|---|---|
| Fear | 27 | .213 | 1.12 | .215 | .666 | .517 |
| Humor | 26 | -.067 | .814 | .159 | | |
| Informative | 26 | .009 | .759 | .149 | df=2,76 | |
| Total | 79 | .053 | .911 | .102 | | |

*Note.* Levene's = .831 (df = 2, 76) p = .440

While not statistically significant, some preliminary observations were made using Table 10. As expected, and also identified by the production and safety effectiveness index, the largest change in susceptibility was seen with the fear appeals, revealing a slight mean increase of 0.213, and showing the largest standard deviation. This might suggest that while the fear appeal created a larger amount of change in perceived susceptibility than the minimal changes with the other appeals, the amount of change was highly variable. Humor and informative appeals showed very little change and relatively high variability. Looking at overall change in susceptibility, the differences among the appeal types were very minor.

**H1.2: The type of appeal in a video PSA will impact the amount of immediate change in a college student's perceived severity towards texting while driving.**

Severity measures the individual's perception of the seriousness of the threat when texting and driving. As with susceptibility, fear appeals may emphasize the potential severity of texting and driving and have a greater impact. This appeal type was also ranked highest on the productivity and safety composite index. On the other hand, humorous appeals may downplay

the risks, and therefore actually reduce the perception of the severity while informative appeals may create a neutral attitude resulting in little to no change.

Table 11

*Immediate Severity Based on Appeal Type-One Way ANOVA*

| Appeal Type | N | Mean | Standard Deviation | Standard Error | F-value | Sig. |
|---|---|---|---|---|---|---|
| Fear | 27 | 1.00 | 1.42 | .273 | 1.57 | .214 |
| Humor | 26 | .653 | 1.27 | .249 | | |
| Informative | 26 | .397 | .979 | .192 | df=2,76 | |
| Total | 79 | .687 | 1.25 | .140 | | |

*Note.* Levene's = 2.05 (df = 2, 76) p = .135

The results in Table 11 were not statistically significant but some interpretations were made. Once again, the largest change in severity was observed in the fear appeal (1.00). This appeal also had the largest standard deviation. Again, it may be interpreted that while fear appeals resulted in the largest amount of change in severity, this change was also highly variable. The safety effectiveness and production quality index also suggested similar results. We can also see that humor (.653) and informative (.397) appeals showed increased changes along with higher variabilities. This data suggested there is increase across the appeals; however, the relative size of the change across appeal types was not significantly different.

**H1.3: The type of appeal in a video PSA will impact the amount of immediate change in a college student's perceived benefits towards texting while driving.**

Benefits represent the individual's belief that participating in the promoted health behavior, in this case to not text and drive, will result in positive benefits. In such cases, it may seem that an informative type appeal would have provided more changes in benefits because the data within the appeal may highlight actual benefits or perhaps offer tangible reasons to stop texting and driving. Therefore these types of appeals may have had a greater impact than the

other two appeal types. This would go against the production and safety composite indexes which listed informative appeals second and third respectively. The emotional impact of the fear appeals may have caused viewers to seek out the benefits. Finally, it was expected the humor appeal would create the least amount of change overall.

Table 12

*Immediate Benefits Based on Appeal Type-Welch's F*

| Appeal Type | N | Mean | Standard Deviation | Standard Error | Welch's F | Sig. |
|---|---|---|---|---|---|---|
| Fear | 27 | .802 | .992 | .191 | 3.91 | .027 |
| Humor | 26 | .512 | 1.22 | .239 | df=2,48 | |
| Informative | 26 | .153 | .694 | .136 | | |
| Total | 79 | .493 | 1.01 | .114 | | |

*Note.* Levene's = 3.40 (df = 2, 76) p = .038

Given that the Levene's test was significant, a Welch's F was used which revealed a statistically significant difference was found between the three appeal types. Looking at Table 12, it is obvious the largest change in benefits resulted from the fear appeals (.802). This also coincided with the production and safety composite scores that ranked fear as having better production qualities and more impactful safety messages. The interpretation may have suggested the fear appeal created such a powerful emotion it also promoted the elimination of risk. Humor appeals followed (.512) and the informative appeals had the least amount of change (.153). This data suggested that the appeal type, based on the PSAs used in this study, did result in a significant change in benefits across the appeal types. A post-hoc analysis was conducted using Fisher's LSD test to conduct a head-to-head comparison of the means between the appeals and found the fear appeal versus the informative/celebrity differed significantly (p=.020) with a mean difference of .649.

**H1.4: The type of appeal in a video PSA will impact the amount of immediate change in a college student's perceived barriers towards texting while driving.**

Barriers are the obstacles individuals perceive which prevent them from completing a recommended action or behavior, in this case eliminating access to the phone while operating a vehicle. The benefits must outweigh the barriers in order for the completion of the positive action. For this construct, a reduction in a score would identify a move away from these perceived barriers and towards safe driving behavior. It would seem that the informative appeals would result in a greater reduction due to the educational material provided to the individual. Fear appeals would also have shown a change due to the high impact emotional content. Once again, because of the content, it was expected that the humor appeals would reveal only a slight decrease.

Table 13

*Immediate Barriers Based on Appeal Type-One-Way ANOVA*

| Appeal Type | N | Mean | Standard Deviation | Standard Error | F-value | Sig. |
|---|---|---|---|---|---|---|
| Fear | 27 | -.216 | 1.81 | .349 | 4.03 df=2,76 | .022 |
| Humor | 26 | .010 | 1.37 | .270 | | |
| Informative | 26 | .939 | 1.44 | .284 | | |
| Total | 79 | .238 | 1.62 | .182 | | |

*Note.* Levene's = .990 (df = 2, 76) p = .376

The result was statistically significant. As expected the largest change created was seen within the informative appeal with a mean increase of .939. However, this positive change was opposite of what was expected. In this case, the barriers became even more prevalent immediately after viewing the informational/celebrity appeals. Perhaps the information in the appeals did not impact the participants as expected as they may have identified with the celebrity and not the message. This goes against the ranking given by the production quality and safety

effectiveness indexes. The next change involved the fear appeal which had a negative change of -.216. This is what was expected. The negative change revealed that individuals, after watching the fear appeals, felt the barriers weren't as important as the recommended safe behavior. Rounding out the three appeal types we found humorous appeals had a slightly positive change which, again, goes against logic. The humor of these appeals may have masked the dangers of this risky behavior. Overall, this data implied the amount of change between the appeal types was significantly different. Results of the Fisher's LSD post-hoc tests found two significant differences. First, the fear appeal versus the informative/celebrity differed significantly (p=.009) with a mean difference of 1.15. Also, the difference between the humor and informative/celebrity appeal was significant (p=.035) with a mean difference of .928.

**H1.5: The type of appeal in a video PSA will impact the amount of immediate change in a college student's cues to action towards texting while driving.**

Cues to action refer to the forces or events that cause a person to act positively towards a health benefit**.** A positive score means an event, action, or even a thought will promote the safe or healthy behavior. In contrast, a negative score reveals these negative events, actions, or thoughts do not result in a safe behavior or action. Similar to the barrier construct, it would seem an informative appeal that provided data and facts would have a greater impact than a fear-based message. Conversely, the emotion elicited by the fear appear may have implanted some lasting information. Humor may not have had the same impact due to the lack of seriousness pertaining to the events.

Table 14

*Immediate Cues to Action Based on Appeal Type-Welch's F*

| Appeal Type | N | Mean | Standard Deviation | Standard Error | F-value | Sig. |
|---|---|---|---|---|---|---|
| Fear | 27 | .407 | 1.07 | .206 | 3.14 df=2,47 | .052 |
| Humor | 26 | .676 | 1.72 | .338 | | |
| Informative | 26 | -.392 | 1.59 | .312 | | |
| Total | 79 | .232 | 1.53 | .172 | | |

*Note.* Levene's = 3.88 (df = 2, 76) p = .025

When looking at the Health Belief model construct cues to action, the Levene's test was significant, therefore a Welch's F-test was used. In Table 14, the data implies that the appeal type, while not significant, suggested a real difference between appeal types may have occurred. This is worth further investigation and a larger sample may help reveal if a significant difference exists. It is interesting to note the largest change in cues to action was observed in the humor appeal with a mean increase of .676. The humor appeal also showed the largest standard deviation. This suggested that while the humor appeal created a larger amount of change in cues to action, the change was highly variable. It can also be said that, due to these results, production quality and safety effectiveness may not have played a notable factor in this construct because the humor appeal type received marginal rankings in both categories by the experts. The next substantial change involved the fear appeal (.407). The appeals within the informative/celebrity group had a negative change with a mean of -.392. This negative change implied that this appeal type reduced the viewer's intention to act positively towards safe driving. Perhaps the simplicity of this appeal type lowered these cues to action.

**H1.6: The type of appeal in a video PSA will impact the amount of immediate change in a college student's perceived overall health belief towards texting while driving.**

This measure evaluated how the appeals impacted the overall health belief of the participants and gauged how the participants felt pertaining to texting and driving. For this hypothesis, the researcher was focused on the amount of immediate change. It would be within reason to assume these rankings would have reflected the rankings derived in the production quality index; fear appeals first, followed by informative/celebrity appeals and finally humorous appeals. On the opposite hand, it could have also been assumed the appeals would follow the ranking of the safety effectiveness; fear appeals, humorous and finally, informative/celebrity.

Table 15

*Immediate Overall Health Belief Index Based on Appeal Type-Welch's F*

| Appeal Type | N | Mean | Standard Deviation | Standard Error | F-value | Sig. |
|---|---|---|---|---|---|---|
| Fear | 27 | 2.64 | 4.22 | .812 | 8.32 df=2,46 | .001 |
| Humor | 26 | 1.77 | 4.28 | .840 | | |
| Informative | 26 | -.771 | 2.32 | .454 | | |
| Total | 79 | 1.22 | 3.96 | .445 | | |

*Note.* Levene's = 3.92 (df = 2, 76) p = .024

The Levene's test was significant, therefore a Welch's F-test was used. In Table 15, when the overall health belief between the three groups was compared, there was a statistically significant difference. Fear (2.64) and humor (1.77) appeals had a positive impact on the subjects' overall health belief, with fear appeals having the largest positive impact. This could have reflected the results of the production and safety effectiveness scores. There was also some degree of variability with these appeals. The informative appeals reflected a negative mean (-.771) and at the same time had the lowest standard deviation which suggested a much lower

variability. This may have been attributed to the lack of participant's ability to grasp these celebrities as experts on this subject. It could also be said the subject's focus on the celebrity may have caused the message to get lost. Lastly, it could be these appeal types simply lack the level of entertainment of the other appeals. This data implied there was a significant difference pertaining to the level of impact among the appeal types. This data, along with results from the safety and production scores, presented information that would benefit from future research.

The post-hoc LSD comparison test revealed two significant differences in this construct. The fear appeal and the informative/celebrity differed significantly (p=.001) with a mean difference of 3.41 while the informative/celebrity differed significantly (p=016) with the humorous appeal revealing a mean difference of 2.53. These results indicated the fear and humorous appeals performed better than the informative/celebrity appeals, however, the added change by the fear appeal was not significantly greater than the humorous appeal type. The large standard deviations in the fear and humor appeal must be taken into consideration.

**RQ2: Does the type of appeal in a video PSA create a longer-term change in college students' attitudes as measured by the Health Belief Model?**

The second research question focuses on the long-term impact on college students' attitudes from video PSAs pertaining to texting and driving. The impact of the appeal types was gauged by comparing the amount of change in the HBM constructs from the demographic to long-term survey conducted approximating two-weeks later. As stated before, this research question is related directly to the health belief model constructs. The measures were based on combining the scores on individual questions related to the health belief model constructs. For each hypothesis, the Levene's test was used to test the homogeneity of variances among groups.

As none of the Levene's tests were significant, the one-way ANOVA F-value was used to determine the significance levels for each inquiry.

**H2.1: The type of appeal in a video PSA will impact the amount of long-term change in a college student's perceived susceptibility towards texting while driving.**

This measure evaluated how the appeals impact the long-term susceptibility of the participants and gauges the degree to which an individual feels vulnerable by texting and driving. For this hypothesis, the researcher is looking at the amount of long-term change in susceptibility. It would seem the emotional impact of the fear appeals will create a lasting impression and thus would show a larger positive change. This would mirror the production and safety effectiveness index which recorded this appeal type as more impactful. Conversely, the humor appeals may provide lasting amusing images that may be retained long-term. Lastly, the informational/celebrity appeals may not provide the necessary impact to parlay into long-term retention. As was discussed in Chapter 2, the fact that participants may not identify with the celebrity used in the PSAs may limit its impact or appeal. One may also consider that the known celebrity is now seen in a different context which may have lessened their impact.

Table 16

*Long-Term Susceptibility Based on Appeal Type-One-Way ANOVA*

| Treatment | N | Mean | Std. Dev. | Std. Error | F-value | Sig. |
|---|---|---|---|---|---|---|
| Fear | 20 | -.025 | .996 | .222 | 1.30 | .280 |
| Humor | 22 | .125 | 1.34 | .286 | | |
| Info | 18 | -.513 | 1.47 | .348 | df=2,57 | |
| Total | 60 | -.116 | 1.29 | .166 | | |

*Note.* Levene's = .810 (df = 2, 57) p = .450

While not statistically significant, some preliminary observations were made. While the fear appeal was expected to have the greatest positive impact, the actual impact was negligible (-

.025). Humor also showed a minimal impact (+.125) with a large standard deviation suggesting its impact was highly variable. The largest change was with the informational appeals (-.513). While not significant, the finding on the informative appeals warrants additional study. It may be these types of appeals had the opposite effect from what was intended by making participants feel less susceptible to hazards of texting and driving. Also, seeing the celebrity out of their element may have lessened the impact, possibly by confusing the message intent or, perhaps, the focus on the celebrity may have diluted the intended message.

**H2.2: The type of appeal in a video PSA will impact the amount of long-term change in a college student's perceived severity towards texting while driving.**

This measure evaluates how the appeals impact the long-term perceived severity of the participants and their evaluation of the seriousness of texting and driving. As with susceptibility, it would seem the emotional impact of the fear appeals would create a lasting impression and thus retention would have created a continued increase in perceived severity. Again, this will align with the production and safety effectiveness index. The humor appeals may mask the seriousness of the PSA message, perhaps even producing the wrong effect. Finally, the informational/celebrity appeals may create a neutral attitude. This may occur if the participants focus on the celebrity, rather than the message, and may not allow for sustained long-term change.

Table 17

*Long-Term Severity Based on Appeal Type-One-Way ANOVA*

| Treatment | N | Mean | Std. Dev. | Std. Error | F-value | Sig. |
|---|---|---|---|---|---|---|
| Fear | 20 | .416 | 1.66 | .371 | .569 | .569 |
| Humor | 22 | .454 | 1.35 | .289 | | |
| Info | 18 | -.018 | 1.53 | .362 | df=2,57 | |
| Total | 60 | .300 | 1.50 | .194 | | |

*Note.* Levene's = .170 (df = 2, 57) p = .844

Table 17 revealed the results were not statistically significant, but some observations were made. The humor (.454) and fear (.416) appeals each showed a positive change with the humor appeals slightly edging out the fear appeals. However, each also reflected a high standard deviation suggesting the impact of the appeal types was highly variable across subjects. We expected the fear appeals to have a larger change due to its content and the ratings from the production and safety rankings. Instead, we found a high standard deviation and relatively modest change. The informational/celebrity appeal revealed a mean of -.018 which is a negligible change. These findings did not show a clear pattern and future research would be warranted.

**H2.3: The type of appeal in a video PSA will impact the amount of long-term change in a college student's perceived benefits towards texting while driving.**

The benefits construct from the health belief model is the belief that following a specific health or safety behavior will result in positive benefits. For this hypothesis, the researcher was looking at the amount of long-term change these appeals have on perceived benefits. Once again, it is believed the fear appeals will create a greater, long-term impact. This could be due to high rankings in production quality and safety effectiveness along with increased emotional impact. The informational/celebrity appeal would also reveal a positive long-term change because this appeal type provides information on the benefits of not texting and driving, which can be retained long-term by participants. Finally, humor may create the least amount of change overall due to the message being blurred by the humor injected into the PSA.

Table 18

*Long-Term Benefits Based on Appeal Type-One-Way ANOVA*

| Treatment | N | Mean | Std. Dev. | Std. Error | F-value | Sig. |
|---|---|---|---|---|---|---|
| Fear | 20 | .316 | 1.28 | .287 | 1.36 | .263 |
| Humor | 22 | .060 | 1.43 | .306 | | |
| Info | 18 | -.407 | 1.34 | .317 | df=2,57 | |
| Total | 60 | .005 | 1.37 | .176 | | |

*Note.* Levene's = .363 (df = 2, 57) p = .697

Some preliminary observations can be made from these results. While not significant, the largest change identified was a negative (-.407) in the informational group. The negative result indicated the informational appeal type was having a negative effect on the subjects and it appeared the proposed benefits gained from not texting and driving offered little appeal in this case. To understand this effect, further research is warranted. As anticipated by the production and safety data, the fear appeals showed a small positive long-term change in benefits with a mean increase of (+.316). However, this appeal also showed a large standard deviation suggesting the impact was highly variable. The humor appeals showed a negligible increase with a mean of .06. This data indicated there is no significant difference between these appeal types.

**H2.4: The type of appeal in a video PSA will impact the amount of long-term change in a college student's perceived barriers towards texting while driving.**

Once again, barriers are obstacles that individuals perceive which prevented them from completing a safety or health action or behavior such as not texting while driving. This measure evaluates how the appeal type impacts the perceived barriers long-term. A positive result identifies a move away from barriers to a less safe action or behavior. To that end, it will seem the fear appeal, again due to its emotional messaging, will result in greater long-term retention and, therefore, a reduction of barriers. Next, the data found in the informative appeals will result in a decrease of barriers due to the content provided to the individual within the appeal. Once

again, because of the content, we may not see a large long-term change (or lowering) of perceived barriers with the humor appeals which parallels the low production qualities and safety messaging rankings.

Table 19

*Long-Term Barriers Based on Appeal Type-One-Way ANOVA*

| Treatment | N | Mean | Std. Dev. | Std. Error | F-value | Sig. |
|---|---|---|---|---|---|---|
| Fear | 20 | -.314 | 1.46 | .326 | 4.15 | .021 |
| Humor | 22 | -.071 | 1.59 | .340 | | |
| Info | 18 | .936 | 1.06 | .251 | df=2,57 | |
| Total | 60 | .150 | 1.48 | .191 | | |

*Note.* Levene's = .212 (df = 2, 57) p = .809

Table 19 provides statistically significant results. This does not suggest that each appeal type had a significant change, it indicates the change across appeal types were different. Going further, the largest change created was seen with the informative appeal with a mean increase of .936. However, this positive change was opposite of what was expected. In this case, the barriers to putting the phone down while driving had become more prevalent long-term, especially for the subjects who viewed the informational/celebrity appeals. Perhaps the focus was on the celebrity rather than the information which may have only strengthened the barriers. This goes against the ranking given by the production quality and safety effectiveness index.

The next substantial change involved the fear appeal which had a negative change of -.314. This was in the expected direction, but a relatively modest change. The negative change revealed two weeks after watching the appeals, the individuals' sensed the barriers were less important than the recommended safe behavior. This also coincided with the production quality and safety effectiveness index. Humor had no real impact with a very slight negative change of -.071. Overall barriers showed a very slight increase (0.150). Post-hoc comparisons using Fisher's LSD test revealed two significant differences. First, the fear appeal versus the

informative/celebrity differed significantly (p=.008) with a mean difference of 1.25. Also, the difference between the humor and informative/celebrity appeal was significant (p=.028) with a mean difference of 1.01. This overall change in barriers reflected the large positive long-term change in the informative appeal type with the minimal, if not negative, or somewhat negative impacts of the other two types. This data implied the type of appeal, based on the PSAs used in this study, did have a significantly different level of impact on barriers, with some positive and others negative.

**H2.5: The type of appeal in a video PSA will impact the amount of long-term change in a college student's cues to action towards texting while driving.**

Cues to action are forces or events that cause a person to act positively towards a health benefit such as not texting and driving. A positive score reveals an event, action, or even a thought would promote the safe or healthy behavior. In contrast, a negative score reveals these events, actions, or thoughts do not result in safer behavior or action. Because of the quality of production and the emotion elicited, it seems that a fear based appeal would result in a significant, positive, long-term change by the subjects. This goes hand-in-hand with the production qualities which ranked the fear appeals highest. It may also appear that an informative appeal, one providing information and facts, would also have a positive, long-term impact. Finally, due to the lack of seriousness pertaining to texting and driving, the humor appeals may not have long-term impact to affect cues to action.

Table 20

*Long- Term Cues to Action Based on Appeal Type-One-Way ANOVA*

| Treatment | N | Mean | Std. Dev. | Std. Error | F-value | Sig. |
|---|---|---|---|---|---|---|
| Fear | 20 | .290 | 1.09 | .245 | 3.68 | .031 |
| Humor | 22 | .145 | 1.49 | .319 | | |
| Info | 18 | -.822 | 1.46 | .344 | df=2,57 | |
| Total | 60 | -.096 | 1.42 | .184 | | |

*Note.* Levene's = .733 (df = 2, 57) p = .485

In Table 20, when comparing cues to action among the three groups, there was a statistically significant difference across appeal types. To begin, the largest change occurred in the informative/celebrity appeal group, being a negative change with a mean of -.822. This negative change implies that two-weeks after watching this appeal type, the cues to action towards safe driving behavior diminished among these individuals. This also coincided with the lower production quality and lower safety effectiveness scores. The fear appeal showed the largest positive increase long-term with a modest mean of .290. These appeals may have provided the participants with enough emotion to create a long-term increase in identifying and keeping these change agents to stop texting and driving. Again, this runs parallel to the composite production and safety rankings. Humor appeals elicited a slight positive change with a mean increase of .145. Overall cues to action showed a slight decrease, being attributed to the relatively large negative long-term change in the informative appeal type. The Fisher's LSD test revealed the fear appeal versus the informative/celebrity differed significantly (p=.015) with a mean difference of 1.11. Also, the difference between the humor and informative/celebrity appeal was significant (p=.030) with a mean difference of .967.

**H2.6: The type of appeal in a video PSA will impact the amount of long-term change in a college student's perceived overall health belief towards texting while driving.**

This measure evaluates how the appeals impact the overall health belief of the participants and integrates the results of each health belief component to gauge the participants' overall feelings pertaining to texting and driving. For this hypothesis, the researcher looked at the amount of long-term change. It would be within reason to assume these rankings would reflect the rankings derived in the production quality index; fear appeals first, followed by informative/celebrity appeals, and finally humorous appeals. It could also be assumed the appeals would follow the ranking of the safety effectiveness; fear appeals, humorous, and finally, informative/celebrity.

Table 21

*Long-Term Overall Health Belief Index Based on Appeal Type-One-Way ANOVA*

| Treatment | N | Mean | Std. Dev. | Std. Error | F-value | Sig. |
|---|---|---|---|---|---|---|
| Fear | 20 | 1.31 | 3.66 | .819 | 5.16 | .009 |
| Humor | 22 | .857 | 4.51 | .961 | | |
| Info | 18 | -2.70 | 4.34 | 1.02 | df=2,57 | |
| Total | 60 | .058 | 4.48 | .578 | | |

*Note.* Levene's = .241 (df = 2, 57) p = .787

In Table 21, when comparing the overall health belief between the three groups, the results revealed a statistically significant difference. The humor (.857) and fear (1.31) appeals each show a strong positive change with the fear appeals slightly leading the humor appeals. These appeal types also had a larger standard deviation which can infer the impact of these appeal types was highly variable across subjects. The fear appeals were expected to have had a larger change overall due to the content and the rating from the production and safety rankings. The informative appeals revealed the largest long-term change of -2.70. A negative

change can be translated as a lowering of the overall perception of risk or perhaps a reluctance to change attitudes pertaining to texting and driving. As stated earlier, perhaps the informative/celebrity appeals had the opposite effect from what was intended by making the subjects less concerned with texting and driving and perhaps they were distracted by the celebrity. Post-hoc comparisons revealed the fear appeal versus the informative/celebrity with a significant mean difference of 4.01 (p=.005) and the informative/celebrity appeals and the humorous appeals showing a significant mean difference of 3.55 (p=.010).

**RQ3. Does the type of appeal in a cell phone video PSA impact college students' retention of information?**

The third research question focused on the overall impact of the video PSAs on both immediate and long-term information retention. The performance of those in each of the three groups (fear, humor and informational/celebrity PSAs) were measured using a post-test, quizzing the participants on details derived from each appeal, immediately following the viewing of the PSA and again two weeks later.

**H3.1: The type of appeal in a video PSA will impact college students' retention of information immediately after watching the PSA.**

When considering immediate retention it would seem that the informational/celebrity appeal type, which presented data in a straightforward manner, would result in higher recall. The humor appeals would then follow as they are also produced with less action and more dialogue. It is expected that the fear appeal type will result in the lowest recall scores. This is due to the fact that each fear appeal showed a violent vehicle accident caused by texting and driving. These stimulating visuals may overwhelm the participants, thus causing diversion from specific details which may result in lower recall scores.

Table 22

*Immediate Retention of Information Based on Appeal Type-Welch's F*

| Treatment | N | Mean Score | Std. Dev. | Std. Error | Welch's F | Sig. |
|---|---|---|---|---|---|---|
| Fear | 27 | 81% | .192 | .037 | 11.97 | .000 |
| Humor | 26 | 84% | .216 | .042 | | |
| Info | 26 | 97% | .065 | .013 | df=2,40 | |
| Total | 79 | 87% | .183 | .021 | | |

*Note.* Levene's = 7.28 (df = 2, 76) p = .001

As the Levene's test was significant, a Welch's F test was used. In Table 22, when comparing immediate retention among the three groups, there was a statistically significant difference. The results fell into line as to what was expected. The highest retention score involved the informative appeal type at 97%. This appeal type also had the least amount of variability. This was followed by humor (84%) and lastly, fear (81%). Once again, these results may suggest that simplicity of appeal types may relate to higher retention. Results of the Fisher's LSD post-hoc tests revealed two significant differences. First, the fear appeal versus the informative/celebrity differed significantly (p=.001) with a mean difference of .163. Also, the difference between the humor and informative/celebrity appeal was significant (p=.007) with a mean difference of .132.

**H3.2: The type of appeal in a video PSA will impact college students' retention of information two-weeks after watching the PSAs.**

When considering long-term retention of information, the emotional impact of the fear appeals may have created a lasting impression, which would reflect in higher long-term retention scores among all appeal types. This would also align with the production and safety effectiveness rankings. Next, it would seem that the simplicity of data provided in the informational/celebrity appeals would allow for significant long-term retention. However, as

was seen in hypotheses (H2.1, H2.3 and H2.6), the participants may have focused more on the celebrity advocate, rather than the message, which may counter the case of simplicity and result in lower long-term retention scores. Lastly, the humor appeals may have provided lasting images that may be retained long-term and reveal a continued positive change.

Table 23

*Long-term Retention of Information Based on Appeal Type-One-Way ANOVA*

| Treatment | N | Mean Score | Std. Dev. | Std. Error | F-value | Sig. |
|---|---|---|---|---|---|---|
| Fear | 20 | 76% | .142 | .032 | 9.49 | .000 |
| Humor | 22 | 83% | .140 | .030 | | |
| Info | 18 | 94% | .095 | .022 | df=2,57 | |
| Total | 60 | 84% | .146 | .019 | | |

*Note.* Levene's = 1.66 (df = 2, 57) p = .198

Table 23, illustrated a significant change among appeal types when comparing long-term retention among the three groups. These results, although lower, mirrored the rankings of the immediate recall scores. The informative appeal type had the highest mean at 94% and also had the lowest standard deviation which indicates the results had less variability. As was the case in the immediate recall, the content of the informational/celebrity messages were simple and clear which may assist in long-term retention. The humorous appeals followed with a mean score of 83%. Perhaps the memorable characters in these appeals allowed for long-term retention. Going against the production and safety scores, fear appeals resulted in the lowest long-term recall score (76%). It is possible the impact of the violent crashes in these PSAs distracted the participants from specific details resulting in lower long-term recall scores. Post-hoc comparisons using Fisher's LSD test revealed two significant differences. First, the fear appeal versus the informative/celebrity differed significantly (p=.000) with a mean difference of .182. Also, the difference between the humor and informative/celebrity appeal was significant

(p=.013) with a mean difference of .105. Overall, this information showed the appeal types had a different level of impact when it came to long-term retention.

## Conclusion

The purpose of this study was to understand the impact of video messaging of PSAs on college student's attitudes and information retention by using constructs of the Health Belief Model which analyzes the participants' perceptions of: severity, susceptibility, benefits, barriers and cues to action. This chapter outlined the results of this investigation, which were calculated using a series of ANOVAs, Welch's F and, as applicable, Fisher's LSD.

The first research question sought to find if there was a relationship between the type of appeal in a texting and driving video PSA and the amount of immediate change in college students' attitudes. As illustrated in Hypotheses 1.3 and 1.4, there was a difference in change between appeal types concerning the benefit and barrier constructs that was significant. Also, it was revealed that the overall health belief index (H1.6) also identified significant difference in the level of impact across appeal types.

The second research question sought to find the amount of long-term change, based on appeal types of texting and driving PSA videos, on college students' attitudes towards texting and driving. Significant results were found when evaluating the health belief model's perceived barriers (H 2.4) and cues to action (H2.5) along with overall health belief (H2.6).

The third research question looked at how the appeal type impacted information retention, both immediate and two-weeks following the viewing of the video appeal types. Significant differences pertaining to retention were found among the appeal types in both immediate and long-term retention and it appears that the informative type appeals led the others

when it comes to information retention. Results and interpretations from these three research questions will be examined further in Chapter 5.

# CHAPTER FIVE

# DISCUSSION AND RECOMMENDATIONS

## Introduction

Texting and driving, also known as distracted driving, is a menace and is making our roadways unsafe. The key purpose of this study was to examine the impact of texting and driving video PSAs on college students. Digging deeper, the research intended to determine if a specific appeal type, such as fear, humor or informational/celebrity, created an immediate and/or long-term change in attitudes pertaining to texting and driving in the targeted group. The research also sought to determine if a specific appeal type influenced information retention, both immediately and long-term.

Davidhizar (1983) implied that understanding and being able to predict and influence a health behavior is crucial if a specific action is the goal. To that end, the HBM was used as a foundation for this study due to its ability to understand and predict health behaviors and to analyze attitudes. The goal in the case of texting and driving is having young people put the phone down when operating a motor vehicle. In this study, we were attempting to understand the influence of texting and driving appeals on college-aged people to help combat texting and driving. To understand and measure college students' attitudes, the five primary constructs of the HBM, along with a composite index, were used. These constructs include; susceptibility, severity, benefits, barriers and cues to action. The surveys used in this study were derived using an instrument that allowed quantification of each construct. In order to measure the immediate and long-term retention of these video PSAs, a simple post-test was given immediately and again two-weeks after watching video appeals on texting and driving. These were compared to the demographic survey administered prior to watching the PSAs.

Careful selections were made of the video PSAs used in order to meet specific qualities and contain necessary information. The chosen PSAs all had similar attributes such as: length, target audience, production quality and appeal type. Three video PSAs were chosen for each appeal type. Participants were solicited from Political Science and Communication departments at Indiana University of Pennsylvania. The study began with 105 students who completed the demographic survey. The demographic survey was intended to obtain the participants' initial attitudes towards texting and driving and general vehicle safety. Next, the subjects were divided into three appeal categories and one control group. The control group watched two short general driving videos that did not discuss texting and driving. All subjects then watched the video PSAs or the driving videos and completed an immediate survey to gauge attitudes and retention. Approximately two weeks later, the same surveys were distributed to test long-term attitudes and recall. The control group was used to ensure there were no major historical or external effects that impacted the study. The data revealed no significant changes were found for the control group and also revealed strong correlations which indicated any historical effects did not impact this study. At the end of the study, a total of 97 students had completed all three segments. The findings were presented in Chapter 4.

## Discussion

### Patterns of Dependent Variables

The dependent variables in the study reflect eight cases of significance. Three were found among the immediate survey (RQ1) and are summarized in Table 24, three were found in the long-term survey (RQ2) and are discussed in Table 25, and finally, two were found in the retention of information survey (RQ3). These tables indicate where each appeal type fell in

relationship with each other, as well as whether the changes were positive, negative, or if they showed no real noticeable change.

This information reflects that fear and humor appeals produced the desired HBM change for several of the constructs, to include the overall Health Belief Index. To that end, the informative appeals reflected higher retention. This can possibly be interpreted that the messages that impact attitude change may be different from those that impact information retention. This contrast can benefit from future research.

**Immediate**

Looking at Table 24 we can see the benefit and barrier constructs of the health belief model, along with the overall health belief index, experienced a significant change immediately after watching the PSAs. As a reminder, this change does not suggest whether each appeal type had a significant change or not; rather, it signifies that there was a difference in the amount of change resulting from the different appeal types. The data below reflects some patterns that are beginning to emerge.

Table 24

*Immediate Effects by Appeal Types*

| Health Belief Constructs | Sig. | Positive Change (>0.25) Greatest→Least | No Change | Negative Change (<-0.25) Greatest→Least |
|---|---|---|---|---|
| Susceptibility H1.1 | No | | Fear→Humor→Info. | |
| Severity H1.2 | No | Fear→ Humor→ Info. | | |
| Benefits H1.3 | Yes | Fear→ Humor | Informative | |
| Barriers H1.4 | Yes | *Informative | Fear→Humor | |

| | | | | |
|---|---|---|---|---|
| Cues to Action H1.5 | No | Humor→Fear | | Informative |
| Health Belief Index H1.6 | Yes | Fear→Humor | | Informative |

*A positive result in the barrier construct reflects a negative change.

Focusing on the immediate results, Table 24 shows there was a pattern beginning to emerge pertaining to the fear and humor appeals. These appeals experienced a positive change which may have influenced the significant change found among appeal types in the benefit construct (H1.3) as well as the significant positive change among appeals in the overall health belief index (H1.6). Although not significant, these appeal types also led in the severity (H1.2) and cues to action constructs (H1.5).

These results reflect, and align, with the overall production and safety scores. It can be assumed that the production and safety effectiveness of these appeal types may have positively impacted and increased the subject's perception of the benefits to not texting and driving. These benefits are personal and differ from person to person. This could be attributed to anything from avoiding accidents and injuries, to simply reducing the chance of being cited for texting and driving.

Another trend that emerged involved the informative/celebrity appeals. These appeals reflected a negative trend in two of the three significant findings; barriers (H1.4) and the health belief index (H1.6). Though not significant, this appeal type also reflected negatively towards the cues to action construct (H1.5). It appears the participants who watched the informative/celebrity appeal type had a positive change towards barriers, not a beneficial result when it comes to personal safety. To ensure clarity, and to reiterate, this positive change is actually an increase of perceived barriers recognized by the participants. In the case of texting and driving, these barriers cause the subjects to accept the risk and text while driving to avoid a

negative situation such as missing an anticipated text message, or worrying that parents or significant others would be angry if not receiving an immediately reply. This appeal type fell in the middle on the production and safety effectiveness scores. The appeals apparently did not impact the subjects enough to change perceptions on barriers to allow engagement of positive safe behaviors. As stated in Chapter 4, perhaps the focus on the celebrity in these appeals could have possibly camouflaged the message which reduced the impact of the PSA. A simple reason behind this negative trend could be that these appeals did not entertain the selected audience or capture their attention. It can also be said the participant's may not have identified with the celebrity used in the appeal.

**Long-Term**

Table 25 summarizes the results of the long-term survey. Results reveal the barriers and cues to action constructs of the health belief model, along with the overall health belief index, experienced a significant change approximately two-weeks after watching the PSAs. The data also reveals some developing trends.

Table 25

*Long-Term Effects by Appeal Types*

| Health Belief Constructs | Sig. | Positive Change (>0.25) Greatest→Least | No Change | Negative Change (<-0.25) Greatest→Least |
|---|---|---|---|---|
| Susceptibility H2.1 | No | | Humor→Fear | Informative |
| Severity H2.2 | No | Humor→Fear | Informative | |
| Benefits H2.3 | No | Fear | Humor | Informative |
| Barriers H2.4 | Yes | *Informative | Humor | *Fear |
| Cues to Action H2.5 | Yes | Fear | Humor | Informative |

| | | | | |
|---|---|---|---|---|
| Health Belief Index H2.6 | Yes | Fear→Humor | | Informative |

*A positive result in the barrier construct reflects a negative change, whereby a negative result reflects a positive change.

When looking at Table 25 a pattern began to emerge pertaining to the fear appeals. Looking at the barriers construct, we see the fear appeal experienced a positive change which may have influenced the significant changes found among appeal types in barriers (H2.4), cues to action construct (H2.5) and led the increase in the overall health belief index (H2.6). Fear also led the benefits construct which was not a significant finding. These results also align with the high scores this appeal type received on production quality and safety effectiveness. This is the direction safety professionals and producers of texting PSAs want to see.

The humor appeals led one construct (severity), however, this did not reflect a significant change. Looking deeper at this appeal type, we see that in four of the six hypotheses, humor did not appear to have impacted long-term changes in any of the constructs. As can be seen, this appeal type fell into the 'no change' criteria in four out of the six hypotheses. This trend was not at all surprising when considering the lower scores this appeal type received on the production quality and safety effectiveness. In this study, it appears that creating humor out of a serious situation does not create the anticipated change in college student's attitudes.

The informative appeal type reflected negative trends in five of the six constructs. Three of the five constructs were found to have had significant changes that occurred across appeal types. Again, the lower production quality and safety effectiveness scores for these appeal types may reflect why this appeal type did not incur the intended results. As stated numerous times, the messages in these PSAs may be overshadowed by the celebrity. The participants may be focused on the celebrities themselves, and perhaps their lack of expertise on this topic, and not on the

message. Producers of video PSAs may reconsider the use of celebrities and attempt to focus more on providing information and data pertaining to texting and driving.

**Retention of Information**

Table 26 reveals the data concerning the retention of information for both immediate and long-term. The retention of information by subjects immediately after viewing the appeals revealed significant differences (H3.1) across the appeal types. The long-term retention, which took place approximately two-weeks after viewing the video PSAs, also showed significant differences (H3.2).

Table 26

*Retention Data Comparison*

| Retention | Mean Scores | | | |
|---|---|---|---|---|
| | Fear | Humor | Informative/Celeb. | Sig. |
| Immediate H3.1 | 81% | 84% | 97% | Yes |
| Long-Term H3.2 | 76% | 83% | 94% | Yes |
| Difference | 5% | 1% | 3% | |

First, it must be considered that the immediacy of the post-survey allowed material to be retained and is reflected in the higher means. Looking at the immediate results, the highest scores reflected the informative appeal type. Although this appeal type resulted in lower results pertaining to participants' attitudes towards cell phone use while driving both immediate and long-term, it does reflect well when looking at information retention. Apparently, the simplicity of this appeal type equated to high retention both immediate and long-term.

Referencing the long-term retention, the results showed a slight lowering of the means. However, the order of the results mirrored the immediate recall with informative having the

highest results followed by humor and lastly, fear. Although the results were very similar, some observations can be made. As stated in Chapter 4, the higher scores of the informational/celebrity appeal types may be attributed to the simplicity of this information provided in this appeal type. Perhaps the straightforwardness of this appeal type reinforced long-term retention. When considering the fear appeal, one can assume that the barrage of production elements and emotions elicited from this appeal type could result in less long-term information retention.

Interestingly, when comparing the immediate recall scores to the long-term scores, the appeal types reflect rather interesting data. The fear appeals resulted in a 5% drop, the informative reflected a 3% drop and the humorous appeals showed a minimal difference of 1%. This may support the argument that the shocking, emotion filled aspects of the fear appeals may have distracted the participants from focusing on the entire PSA which created a noticeable difference between immediate and long-term recall. The lower scores within the informative appeals could be attributed to the participants focusing on the celebrity and not the message. Finally, the humorous message reflected the least change between the immediate and long-term retention. As stated earlier, this may be attributed to the unique characters and settings in this video PSA.

**Immediate and Long-Term Retention**

Looking at the overall results (both immediate and long-term), we witnessed a trend identifying the content in the fear appeals as having impacted the participants enough to create an immediate and lasting change in attitudes towards texting and driving. The humor appeals reflected no change in 50% of the overall results. With this information it can be inferred that this appeal type did not consistently send a clear message impacting the participant's perception

to avoid texting and driving. Lastly, the informative/celebrity appeal type had the least impact on immediate or long-term change in the overall health belief of the participants. With that being said, this appeal type, which didn't support the desired health belief change, revealed a significant lead in information retention. Conversely, the fear appeals reflected the lowest score in information retention, yet, led the appeal types pertaining to positive health belief changes. This is an area that would benefit from future studies.

## Limitations

This study examined the effects of texting and driving PSAs on college students. While the study produced several statistically significant results, there were some limitations to this study that should be mentioned and considered.

First, while the sample size for this study was acceptable, a larger sample would have been desirable. Also, the sample consisted of a large representation from the Communication department. This is noted due to the fact that these participants, because of their chosen major, have an interest in media and message and may be more attuned to media production and messaging, including PSAs. Having more majors represented could bring more interesting results. Lastly, there were limitations of using one college campus as opposed to numerous across the region or, perhaps, the country.

This study was intended to focus on younger, college-aged, vehicle operators and, because of the recruitment process, a few of the subjects who participated were non-traditional students who did not fall into this demographic. Also, this study did not account for how demographics may impact the participants' attitudes towards texting and driving appeal types. To obtain more diverse and rich data, a larger sample is needed.

While the PSAs used in this study met the requirements for this research, better quality versions may have been obtained directly from the producers of the material. Furthermore, the development of PSAs produced specifically for a future study, should be considered. Having the PSAs created would allow for manipulating messaging consistency, length and production qualities.

Some of the PSAs used had been previously aired on prime time network along with cable/satellite channels and were also present on social media sites such as LinkedIn, Flickr and Facebook, which the participants may have previously viewed. This could have either strengthened or diluted the messages or the impact of some of the elements. Although a test with a control group was conducted to assess that history didn't play a part in this study, this must be mentioned.

The immediate surveys were paper-based surveys and the long-term surveys were online using the Qualtrics survey program. This difference between the two types may have affected processing and recall. The experiment location was controlled and free of distractions, whereas the location of the long-term survey is unknown and may have affected recall.

## Recommendations for Future Research

This study is just a small step towards understanding how the elements of a PSA impacts specific populations and addressing individual differences. As discussed in Chapter 4 and earlier in this chapter, there are many avenues for future research on this topic. Future research can be used to create guidelines for the production of these PSAs. Echoing what Slater (1999) stated, there is a need to create PSAs based on similar research, looking at the elements and how those may impact specific populations and/or address individual differences. Future research can

branch out a multitude of ways to delve into understanding the influence of PSAs on specific demographics, socio-economic levels and cultures.

As mentioned earlier in this chapter and in Hypothesis 1.5, broadening and enlarging the sample size, to gain deeper insight into understanding the impact of texting and driving PSAs on college-students, will allow for a richer understanding of these appeals as well as the demographic. This study did not assess how demographics play a part in the impact of texting and driving appeals. Expanding this study and conducting future studies to include a variety of ages and demographics will allow researchers to ascertain more accurate data behind distracted driving/texting and driving PSAs. This data can be used to develop production campaigns to develop more impactful texting and driving PSAs that could branch out into other areas of transportation.

The results of the current study identified that fear and humor appeal types had a more positive change on attitudes, while the informative appeal types had a greater impact on information retention. An area for future study would determine which appeal type leads to desired behavior change. More specifically, do PSAs that produce attitudinal changes result in greater behavior change compared to PSAs that inform?

As mentioned in Hypothesis 2.1, findings pertaining to the informational appeals raised the question of the value of utilizing entertainers in PSAs. As noted numerous times throughout Chapter 4, the participants may have identified more with the celebrity in the PSA than the message. However, while this group did not produce attitude change, it had the highest information recall level among all appeal types. Future studies focused on entertainers in PSAs could address this issue. Another area to investigate would be the impact of non-celebrity informative appeals. This may determine if the celebrity is indeed a confounding factor.

Studies can also be conducted on how far we can push the emotional aspects of PSAs. Video technology and techniques seen in this study take viewers into the cars during mishaps caused by texting and driving and onto the roadway milliseconds from an impact. Studies can understand how PSA producers use technology to push emotional barriers even further without causing emotional distress in the viewers.

Employing a qualitative study or a mixed methodology study may create valuable data to understand how college students respond to PSA messages. This information would assist producers of PSAs to develop more effective texting and driving messages and provide suggestions for researchers for studying this phenomenon from other perspectives in the future.

Lastly, new technologies and smart screens are currently being manufactured in newer model cars and trucks. These devices create a new and additional source of distraction and temptation for automobile operators thus increasing driving risks. These new technologies will increase the need for meaningful and impactful PSAs.

## Conclusion

Cell phones are not going away. Research must identify ways to eliminate the risks of distracted driving while driving. As cellular technologies improve so does the enticing features of these smartphones such as facetime, apps, locator assistance, etc. This study researched the impact of video messaging pertaining to cell phone use and texting and driving on college students' attitudes and information retention. This study can serve as groundwork for future research regarding texting and driving PSAs. It can also serve as the basis for health or safety related PSA directed at college-students or other demographics. As there has been little research conducted on this subject, the few significant findings identified in this research can be the springboard for future research.

As this is being written, car companies are rolling out vehicles with ever increasing technologies. Many automobiles now have multi-functioning touch screens allowing drivers to answer phones, use maps, search for information, and/or answer texts. This tells us that distracted driving will not go away. Therefore, continued research is needed to identify how to broaden alerts and educate the populace on these hazards in order to improve safe behaviors and provide safe roadways.

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# Appendix A

## Transcripts of PSAs

**Humorous PSA #1-Afterlife PSA:**

The PSA opens in a dark, deserted place, like a cavern.
A close up of a young woman who is has a bloody face and torn clothing.
Medium shot of her talking to someone in a dark cloak similar to the Grim Reaper. "Listen to me. I am the captain of the track team and if I a late…" her lecture trails off.
Medium cut to a man and a woman. They're talking, both are wearing clothing from another era and both are bloody and gray as if they're dead. The man says "she doesn't really thinks she's going to get out of here does she? The woman responds "be nice, she's new!".
Cut to the young woman trying to get the Grim Reapers attention by waving her arms in front of his face; "Hello, are you there?". With no response she grunts in frustration "Ugh" and stomps away.
She walks towards the man and woman. The man says to the young woman; "Wow, even from our standards you look awful" The lady replies "Oh, Sweetie, what happened?"
The young woman: "Me? My friend Becky got to talk to this super cute boy and I tried to act like I wasn't jealous, but I so totally was. And then, out of nowhere this concrete barrier just popped up. Maybe it was a Semi."
The older woman says: "You mean you were driving?"
The young woman: "Yeah, I mean I know the whole 'eyes on the road thing' but this was a super important text. Maybe you have to know Becky".
Cut to the man: "Texting? Great"
Cut to the girl: "But it was only like five seconds and I'm a really fast texter, so it wasn't even a big deal."
The man and woman shake their heads.
The young woman: "Actually, has she texted me back yet?" She pulls open her jacket to reveal her cell phone imbedded in her stomach. She pulls out the cell phone to check it.
She looks at her phone and says "Oh I get like no bars in this place." She wanders away from the man and woman.
The PSA ends with the text 'Accidents Don't Have Autocorrect, A Message From the Afterlife"

**Humorous PSA #2- One Unlucky Guy PSA:**

The PSA opens to a young man dressed in a business suit and in what appears to be an alleyway.
He says: "I am one unlucky guy"
He then becomes a victim of a mugging. He's pushed against a wall and says; "the chances of being involved in a robbery is one is 757."
Cut to the young man in a field during a thunderstorm. "The chances of being struck by lightning" and then he is struck by lightning. His clothes are now more damaged and he's now showing burns on his face. He continues "is one in 750,0000."
Cut to a plane flying in the air.
Cut to the man in the airplane with a view of the wing and sky behind him.
The wing suddenly explodes and is on fire.
The man looks at the camera and says "The chances of being a victim of an airline crash, one in 29 million"
A flight attendant runs past and he asks for peanuts and an oxygen mask falls into view.

Cut to the young man behind the wheel of a car.
He says "The chances of being involved in a car crash are far greater than lightning strikes and plane crashes. And if you are texting while driving your risk of crashes increases 23 times. Now, I may be an unlucky guy but I don't have to be part of that statistic and neither do you. Drive responsibly"
The video PSA ends with the text STOPTEXTSTOPWRECKS.ORG.

**Humorous PSA #3 - Not Safe For Anyone PSA:**

The PSA opens on a car driving on a dark, lonely road at night.
The headlights catch a person walking into the roadway.
The person is a man looking at his cell phone and texting.
The car slams on the brakes.
The car driver blares the horn.
The man is caught in the cars headlights and stops texting and looks at the car unmoving.
The headlamp in the car reveals the driver and his passenger are deer.
The man finally runs off across the roadway.
The deer and his passenger look at each other and shake their heads.
A long shot of the car from the rear shows three more humans, who are texting, cross the front of the car illuminated by the headlights.
Text comes across the bottom of the screen "Don't text when on the road" scrolls across the bottom of the screen.
The car pulls away.
Text on the screen says "It's not safe for deer….or humans".

**Fear PSA #1 - AT&T's No Glance is Worth a Life: It Can Wait PSA:**

The PSA begins with a quiet neighborhood with a head-on accident in progress. Close-up of glass is on the roadway. The video is in reverse, and slow motion.
An aerial view of the head-on rollover accident between a pickup truck and a SUV and a young boy who is in the way of the airborne vehicle. Again, the video is in reverse and slow-motion.
The truck and SUV are moving away from each other and a boy riding his bike.
The shots jump between the boy on the bicycle watching the action, the vehicles colliding and neighbors who are witnessing the accident all in slow motion.
The video then shows the aerial view of the two vehicles at impact moving away from each other (in reverse).
The shot cuts to the child passenger in the SUV her face frozen in fear.
Cut to a shot behind the female driver of the SUV her air bag deployment is in reverse glass is flying in the air.
An aerial shot of the vehicles of the vehicles as they move back towards their respective lanes.
A close-up shot of the woman driver of the SUV looking down at her cell phone in the center console.
A shot of the little girl in the back seat who says; "Mommy, I'm hungry?"
Woman: "We're almost there baby. Want to play a game on Mommy's phone?"
Child: "No"
Woman is looking down at her cell phone. "I think you will when you see…" She is interrupted by a head-on crash with a truck.
The next shot shows the two vehicles colliding head-on, quick cuts to all the scenes shown earlier. The boy on the bike in the line of the vehicles, the neighbors in the yards.
The next shot shows the interior of the woman's SUV, the airbag deploying and glass blowing around.

The video ends with the text: “No email is worth a life”. The text changes to “No post is worth a life” then, “No glance is worth a life” and finally “No search is worth a life”.
Narrator comes on saying “AT&T reminds you, it can wait”.

**Fear PSA #2 - Don’t Text and Drive PSA:**

Video opens on a car full of teenagers in a SUV. The view is looking towards the dash from the rear seats. One can see the back of the driver’s hands. There is music playing and light chatter between them.
The cell phone in the center console buzzes.
The driver picks up the cell phone and viewers can see the text message from her mother asking when she’ll be home.
Close up of the driver’s hand and the cell phone while she’s begins to text her mother.
The shot moves to an aerial view of the roadway and the vehicle which begins to cross the center line towards and oncoming SUV.
The next shot is at road level and the two vehicles are very clearly heading for a head on collision stop mid- action.
While both cars remain stopped the teen gets out of the vehicle. The other driver, a young mother, gets out of the opposing vehicle and meet in the roadway and begin to talk to each other.
The woman says: “do you know that you’re in my lane?”
The teen replies; “no, not at all”
Woman: “are you not paying attention?”
Close up shot of the cell phone in the teen’s hand.
Woman: “are you texting?”
Teen: “I was just checking in with my Mom, I was telling her I thought I’d be home by 6”
Woman: “it’s OK, there’s enough time. Just pay attention”
Teen: “I’m not even halfway through my text, there’s no way, I’m not even going to look up”
Woman: “my babies are in the car, you have to pay attention”
Teen: “This was supposed to be a quick text. I’m so sorry”
Both driver’s get back into their respective stopped (mid-action) cars and look at their passengers who are also stopped mid-action. The teen looks at her friends and the mother looks at her young children.
The real-time action resumes and both vehicle collide head-on the screen goes black.
The video ends with the text “Don’t text and Drive”.

**Fear PSA #3 - Manifesto PSA:**

The video opens with a teen in the rear seat of a car driving down the street windows are down and you can hear girls talking. One girl, the driver, asks “How many letters?”. Another girl, the front seat passenger replies “five letters”
A close up of the front seat passenger who is holding a crossword puzzle.
Cut to a view from the front of the vehicle into the car showing two girls in the front and the boy in the backseat.
The driver is talking to the passenger and says; “Think about it. What am I doing right now?”
The passenger replies “SMILE?” They laugh.
Close up of the driver who’s cell phone buzzes and she looks over to it and picks it up from the center console. She begins to text on her cell phone her eyes diverted from the road.
Cut to a shot from inside the vehicle looking out at a STOP sign. The car doesn’t stop and enters the intersection.

Cut to a shot from inside the vehicle looking out the driver's side window. A truck hits the car on the side.
The video is now slow motion view of the inside of the car. The teens are being thrown around and glass is flying through the air.
The last shot is a long shot of the car rolling and coming to a stop.
Cut to glass on the roadway and a police officer's shoe.
Voiceover "Nobody likes to be stopped by the police"
Cut to a medium shot of a police officer; "but if I had seen her texting while driving, and given her a ticket, it just might have saved her life."
The video PSA ends with the text "U drive, U text, U pay".

**Celebrity/Informative PSA #1 - Rascal Flatts #X PSA:**

Video opens with a medium shot of the three members of the country singing group Rascal Flatts; Gary LeVox, Joe Don Rooney and Jay DeMarcus.
Joe Don Rooney: "We love playing live but that means a lot of time on the road and time away from some of the things most important to us."
Gary LeVox: "Friends and family. You know our phones are the best way to stay connected to them but we know that texting while driving carries entirely too much risk".
Jay DeMarcus: "That's why we use hashtag X (#X) before we drive to pause the conversation until we reach our destination safely. Whether you texting a loved one or getting a little payback like our new single suggests, it can wait."
All three say together: "No text is worth a life"
The video ends with #X before you drive on the screen.

**Celebrity/Informative PSA #2 – Demi Lovato #X PSA**

Outside shot of a soundstage.
Cut to a medium shot of Demi Lovato, young actress and singer on a soundstage.
She's on a stage and the crew behind her are working on the set and lights.
She is sitting in her dressing room looking at her cell phone.
Demi Lovato Voiceover: "When I'm working things can get so hectic"
Shot of her talking to the camera: "so sometimes I need to find an easy way to express what's important to me"
Shot of her on stage with the crew working behind her. "like when I'm with my crew, I use short hand to tell them what I need". She points upward and the lights behind her get brighter.
Medium shot of her in her dressing room; "and when I need to talk to my fans" she places her hands in the shape of a heart.
Medium shot of her walking towards her car; "But the most meaningful shorthand of all is the one I use when I'm about to drive.
Hashtag X (#X), it's an easy way to tell everyone that I'm about to drive and I do it every time before I get behind the wheel"
Shot of her texting #X and getting into her car to drive.
"Use #X to pause the conversation before you drive because no text is worth a life"
The video ends with #X before you drive on the screen.

**Celebrity/Informative PSA #3 - Chandler PSA:**

Video opens with a young man sitting in a chair. He is clean cut with short blonde hair.
Medium shot of him talking about an accident.

“The windshield (pause) glass broke and….and…screetching. I saw a body come down rom off the top of the…the…van. And I just thought ‘Oh my gosh, what have I done..sigh…what have I done?”
The screen goes black with writing: “Chandler was texting “I love you” when he killed three children.
Cut back to Chandler sitting in the chair: “There’s never…never a day that I…I wake up that I don’t think about it.” He closes his eyes and swallows hard and looks uncomfortable.
The PSA ends with the text: Texting and Driving It Can Wait.

## Appendix B

### Initial Email to Students Volunteering to Participate

Hello!

As discussed in your recent course, your help is needed with research regarding video public service announcements (PSAs) regarding cell phone use while driving a vehicle. If you would like to participate in this project, please click the link included in this email. This survey will take no more than 5 minutes of your time.

As part of this survey, you will be selecting a date and time to watch a few short video PSAs in a computer lab setting in Stouffer Hall. This portion of the research will take approximately 10-15 minutes of your time. After viewing the video PSAs, you will be presented with a paper-based survey related to the information included in the PSA.

Approximately 2 weeks after viewing the PSAs you will be contacted via email and asked to complete a third and final survey. This should not take more than 10 minutes of your time.
If you complete this survey, the viewing portion of the study along with the follow-up survey and the final emailed survey you will be entered to win a $300 Amazon gift card. Your participation is voluntary. Individual responses will be kept confidential and will not be tied with any identifying information. Please click on the following link to take the demographic survey.

**QUALTRICS LINK WILL BE INSERTED HERE**

Thank you for your time!

Rona Smeak, Principle Investigator
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Dr. Mark Piwinsky (Co-Investigator/Advisor)
Chairperson and Professor
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Indiana University of Pennsylvania

This project has been approved by the Indiana University of Pennsylvania Institutional Review Board for the Protection of Human Subjects (Phone 724-357-7730).

## Appendix C

## Demographic and Scheduling Survey

Q1: Thank you for your time in this important dissertation research. Your participation in this survey is voluntary and individual responses will be kept confidential. If at any time you do not wish to continue the survey, you may quit by closing your web browser. This project has been approved by the Indiana University of Pennsylvania Institutional Review Board for the Protection of Human Subjects.
Please select this response to continue (1)

- ❍ Click here if you choose not to participate (2)

If Click here if you choose no... Is Selected, Then Skip To End of Survey

Q2: What is your age? (Note: if you are under 18, the survey will end)

- ❍ Under 18 (1)
- ❍ 18 (2)
- ❍ 19 (3)
- ❍ 20 (4)
- ❍ 21 (5)
- ❍ 22 (6)
- ❍ 23 (7)
- ❍ 24 (8)
- ❍ 25 or older (9)

If Under 18 Is Selected, Then Skip To End of Survey

Q3: Do you have a valid state vehicle driver's license?

- ❍ Yes (1)
- ❍ No (2)

If No Is Selected, Then Skip To End of Survey

Q4: What is your gender?

- ❍ Male (1)
- ❍ Female (2)

Q5: What is your Major?

- ❍ Type in your Major? (1) _____

Q6: What is your academic classification?

- ❍ Freshman (30 earned credits or less) (1)
- ❍ Sophomore (30-59 earned credits) (2)
- ❍ Junior (60-89 earned credits) (3)
- ❍ Senior (90 earned credits or more) (4)

Q7: What is your approximate GPA?

- ❍ 3.5-4.0 (1)
- ❍ 3.01-3.49 (2)
- ❍ 2.5 - 3.0 (3)
- ❍ 2.01 - 2.49 (4)
- ❍ Under 2.0 (5)

Q8: In which class did you hear about this study?

- ❍ COMM 101: Communication Media in American Society (1)
- ❍ COMM 103 Digital Instructional Technology (11)
- ❍ COMM 150: Aesthetic & Theory of Comm. Media (12)
- ❍ COMM 230: Global Media and Communications (2)
- ❍ COMM 249: Basic Audio Recording Techniques (3)
- ❍ COMM 271: Beginning Photography (4)
- ❍ COMM 325: Women in Media (5)
- ❍ COMM 371: Photo II (13)
- ❍ BCOMM 321: Business and Interpersonal Communications (6)
- ❍ PLSC 101: World Politics (7)
- ❍ PLSC 284: American Foreign Policy (14)
- ❍ PLSC 280: Comprehensive Government Western Political Systems (8)
- ❍ PLSC 383: Political Systems-Asia (9)
- ❍ PLSC 388: Dimensions of National Security (15)
- ❍ Other: Please add (10) _____

Q9: When you operate a vehicle do you wear a seat belt?

- ❍ Always (1)
- ❍ Sometimes (2)
- ❍ Rarely (3)
- ❍ Never (4)
- ❍ Depends on whether it's a short trip, then No (5)
- ❍ Only on long trips (6)

Q10: Are you aware of the safety concerns with texting while driving?

- ❍ Yes- A lot (1)
- ❍ A little (2)
- ❍ No (3)

Q11: Do you use your cell phone to send or receive text messages while you are operating a motor vehicle?

- ❍ Always (4)
- ❍ Sometimes (2)
- ❍ Rarely (5)
- ❍ Never (1)
- ❍ If it's an emergency (6)

Q12: Match your attitudes towards the following statements,

| | Sometimes (1) | Often (2) | Always (3) | Never (4) | If it's an emergency (5) |
|---|---|---|---|---|---|
| I text when I drive. (1) | ❍ | ❍ | ❍ | ❍ | ❍ |
| My parents text while driving (2) | ❍ | ❍ | ❍ | ❍ | ❍ |
| My friends text while driving (3) | ❍ | ❍ | ❍ | ❍ | ❍ |
| Texting and driving is OK if you're going slow. (4) | ❍ | ❍ | ❍ | ❍ | ❍ |
| Texting and driving is OK in light traffic. (5) | ❍ | ❍ | ❍ | ❍ | ❍ |
| Texting and driving is OK on back roads. (6) | ❍ | ❍ | ❍ | ❍ | ❍ |

Q13: Please answer the following questions pertaining to using a cell phone while driving.

| | Disagree Very Strongly (1) | Disagree Strongly (2) | Disagree (3) | Neither Agree or Disagree (4) | Agree (5) | Agree Strongly (6) | Agree Very Strongly (7) |
|---|---|---|---|---|---|---|---|
| I worry about texting and driving (1) | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ |
| I feel confident I can safely drive a car and text at the same time. (2) | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ |
| I feel less confident about others ability to drive and text at the same time (3) | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ |
| I feel that my chances of being in a car accident from texting are high. (4) | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ |

Q14: Please answer the following questions pertaining to using a cell phone while driving.

| | Disagree Very Strongly (1) | Disagree Strongly (2) | Disagree (3) | Neither Agree or Disagree (4) | Agree (5) | Agree Strongly (6) | Agree Very Strongly (7) |
|---|---|---|---|---|---|---|---|
| The thought of texting and driving scares me. (1) | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ |
| If I texted while driving my life would be in danger (2) | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ |
| Texting and driving would endanger my future (3) | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ |

Q15: Please answer the following questions pertaining to using a cell phone while driving.

| | Disagree Very Strongly (1) | Disagree Strongly (2) | Disagree (3) | Neither Agree or Disagree (4) | Agree (5) | Agree Strongly (6) | Agree Very Strongly (7) |
|---|---|---|---|---|---|---|---|
| I do not want to be in an accident caused by my texting and driving. (1) | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ |
| Putting the phone down while driving can prevent future problems for me. (2) | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ |
| I have a lot to gain by not texting while driving. (3) | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ |

Q16: Please answer the following questions pertaining to using a cell phone while driving.

| | Disagree Very Strongly (1) | Disagree Strongly (2) | Disagree (3) | Neither Agree or Disagree (4) | Agree (5) | Agree Strongly (6) | Agree Very Strongly (7) |
|---|---|---|---|---|---|---|---|
| My friends would make fun of me if I didn't text while driving. (1) | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ |
| My girlfriend (or boyfriend) will get upset with me if I don't respond to their texts quickly. (2) | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ |
| My parents will get upset with me if I don't respond to their texts quickly. (3) | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ |
| My friends will get upset with me if I don't respond to their texts quickly. (4) | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ |
| It is so hard to resist reading a text when I am driving when I hear the text message alert sound. (9) | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ |
| It's hard to resist texting when I am driving when I am in a serious conversation (10) | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ |
| It is hard to resist texting when I am driving when a | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| person I am interested in texts me. (11) | | | | | | | |

Q17: Please answer the following questions pertaining to using a cell phone while driving.

| | Disagree Very Strongly (1) | Disagree Strongly (2) | Disagree (3) | Neither Agree or Disagree (4) | Agree (5) | Agree Strongly (6) | Agree Very Strongly (7) |
|---|---|---|---|---|---|---|---|
| It is safe for me to stop texting while I'm driving. (10) | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ |
| I will stop texting and driving when I get stopped by police and ticketed. (1) | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ |
| I will stop texting and driving when I cause an accident because of texting and driving. (9) | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ |
| I will stop texting and driving when someone I know was in an accident (2) | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ |
| I will stop texting and driving when my parents tell me to stop (5) | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ |

Q18: Please choose at least one of the following dates and times for the lab portion of this study. This will take approximately 30 minutes.

- ❍ Thursday, October 22nd 10:00-10:30 (1)
- ❍ Thursday, October 22nd 10:30-11:00 (2)
- ❍ Thursday, October 22nd 11:00-11:30 (3)
- ❍ Thursday, October 22nd 11:30-12:00 (4)
- ❍ Thursday, October 22nd 12:00-12:30 (5)

- Thursday, October 22nd 12:30-1:00 (6)
- Thursday, October 22nd 1:30-2:00 (7)
- Thursday, October 22nd 430-5:00 (9)
- Tuesday, October 27th 10:00-10:30 (11)
- Tuesday, October 27th 10:30-11:00 (12)
- Tuesday, October 27th 11:00-11:30 (13)
- Tuesday, October 27th 11:30-12:00 (14)
- Tuesday, October 27th 12:00 - 12:30 (15)
- Tuesday, October 27th 12:30-1:00 (16)
- Tuesday, October 27th 1:00-1:30 (17)
- Tuesday, October 27th 1:30-2:00 (18)
- Tuesday, October 27th 2:00-2:30 (19)
- Tuesday, October 27th 2:30-3:00 (20)
- Tuesday, October 27th 3:00-3:30 (21)
- Tuesday, October 27th 3:30-4:00 (22)
- Wednesday October 28th 1:00-1:30 (23)
- Wednesday, October 28th 1:30-2:00 (24)
- Wednesday, October 28th 2:00-2:30 (25)
- Wednesday, October 28th 2:30-3:00 (26)
- Wednesday, October 28th 3:00-3:30 (27)
- Wednesday, October 28th 3:30-4:00 (8)
- Thursday, October 29th 10:00-10:30 (29)
- Thursday, October 29th 10:30-11:00 (30)
- Thursday, October 29th 11:00-11:30 (10)
- Thursday, October 29th 11:30-12:00 (31)
- Thursday, October 29th 12:00-12:30 (33)
- Thursday, October 29th 12:30-1:00 (34)

Appendix D

Immediate and Long-Term Recall Surveys

Fear:

Q1: How interesting did you find the Manifesto Online video? (The video that began with girls talking)

- ❍ Extremely interested (1)
- ❍ Very Interested (2)
- ❍ Mildly interested (3)
- ❍ Not interesting at all (4)

Q2: How effective did you find the Manifesto Online video?(The video that began with girls talking)

- ❍ Extremely effective (1)
- ❍ Very effective (2)
- ❍ Mildly effective (3)
- ❍ Not effective at all (4)

Q3: How interesting did you find the Don't Text and Drive video? (The video with an older woman talking with a young driver)

- ❍ Extremely interested (1)
- ❍ Very Interested (2)
- ❍ Mildly interested (3)
- ❍ Not interesting at all (4)

Q4: How effective did you find the Don't Text and Drive video? (The video with an older woman talking with a young driver)

- ❍ Extremely effective (1)
- ❍ Very effective (2)
- ❍ Mildly effective (3)
- ❍ Not effective at all (4)

Q5: How interesting did you find the No Glance is Worth a Life, It Can Wait video? (The video focusing on the mother and child in the car)

- ❍ Extremely interested (1)
- ❍ Very Interested (2)
- ❍ Mildly interested (3)
- ❍ Not interesting at all (4)

Q6: How effective did you find the No Glance is Worth a Life, It Can Wait video? (The video focusing on the mother and child in the car)

- ❍ Extremely effective (1)
- ❍ Very effective (2)
- ❍ Mildly effective (3)
- ❍ Not effective at all (4)

Q7: After watching the videos rank the following statements.

| | Disagree Very Strongly (1) | Disagree Strongly (2) | Disagree (3) | Neither Agree or Disagree (4) | Agree (5) | Agree Strongly (6) | Agree Very Strongly (7) |
|---|---|---|---|---|---|---|---|
| I worry about texting and driving (1) | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ |
| I feel confident I can safely drive a car and text at the same time. (2) | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ |
| I feel less confident about others ability to drive and text at the same time (3) | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ |
| I feel that my chances of being in a car accident from texting are high. (4) | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ |

Q8: After watching the videos rank the following statements.

| | Disagree Very Strongly (1) | Disagree Strongly (2) | Disagree (3) | Neither Agree or Disagree (4) | Agree (5) | Agree Strongly (6) | Agree Very Strongly (7) |
|---|---|---|---|---|---|---|---|
| The thought of texting and driving scares me. (1) | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ |
| If I texted while driving my life would be in danger (2) | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Texting and driving would endanger my future (3) | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ |

Q9: After watching the videos rank the following statements.

| | Disagree Very Strongly (1) | Disagree Strongly (2) | Disagree (3) | Neither Agree or Disagree (4) | Agree (5) | Agree Strongly (6) | Agree Very Strongly (7) |
|---|---|---|---|---|---|---|---|
| I do not want to be in an accident caused by my texting and driving (1) | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ |
| Putting the phone down while driving can prevent future problems for me (2) | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ |
| I have a lot to gain by not texting while driving (3) | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ |

Q10: After watching the videos rank the following statements.

| | Disagree Very Strongly (1) | Disagree Strongly (2) | Disagree (3) | Neither Agree or Disagree (4) | Agree (5) | Agree Strongly (6) | Agree Very Strongly (7) |
|---|---|---|---|---|---|---|---|
| My friends would make fun of me if I didn't text while driving. (1) | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ |
| My girlfriend (or boyfriend) will get upset with me if I don't respond to their | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| text quickly. (2) | | | | | | | |
| My parents will get upset with me if I don't respond to their text quickly. (3) | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ |
| My friends will get upset with me if I don't respond to their text quickly. (4) | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ |
| It is hard to resist reading a text when I am driving when I hear the text message alert. (5) | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ |
| It is hard to resist texting when I am driving when I am in a serious conversation (6) | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ |
| It is hard to resist texting when I am driving when a person I am interested in texts me. (7) | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ |

Q11: After watching the videos rank the following statements.

| | Disagree Very Strongly (1) | Disagree Strongly (2) | Disagree (3) | Neither Agree or Disagree (4) | Agree (5) | Agree Strongly (6) | Agree Very Strongly (7) |
|---|---|---|---|---|---|---|---|
| I will stop texting and driving when I get stopped by police and ticketed. (1) | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ |
| I will stop texting and driving when someone I know is in an accident (2) | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ |
| I will stop texting and driving when my parents tells me to stop (3) | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ |
| I will stop texting and driving when I am in an accident because of texting and driving. (4) | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ |
| It is safe for me to stop texting while I'm driving (5) | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ |

Q12: Do you pay attention to these videos on television?

- ❍ Yes (1)
- ❍ No (2)

Q13: Where do you see most of the videos you see?

- ❍ Television (1)
- ❍ Facebook (2)
- ❍ YouTube (3)
- ❍ Other social networking sites (4)

Q14: What were the girls doing at the beginning of the Manifesto Online video? (The video that began with girls talking)

- ❍ Soduku (1)
- ❍ Crossword puzzle (2)
- ❍ Talking about a boy (3)

Q15: How many kids were in the car in the Manifesto Online video? (The video that began with girls talking)

- ❍ Two (1)
- ❍ Three (2)
- ❍ Four (3)

Q16: How did the accident happen?

- ❍ She ran off the road. (1)
- ❍ She ran a stop sign (2)
- ❍ She rear ended another car (3)

Q17: How many kids were in the teens car in the Don't Text and Drive video? (The video with an older woman talking with a young driver)

- ❍ One (1)
- ❍ Two (2)
- ❍ Three (3)

Q18: How many children did the woman have in her car in the Don't Text and Drive video? (The video with an older woman talking with a young driver)

- ❍ One (1)
- ❍ Two (2)
- ❍ Three (3)

Q19: Who was the girl texting in the Don't Text and Drive video? (The video with an older woman talking with a young driver)

- ❍ Friend (1)
- ❍ Mom (2)
- ❍ Dad (3)

Q20: What was the mother doing with her cell phone in the No Glance is Worth a LIfe, It Can Wait video? (The video focusing on the mother and child in the car)

- ❍ Taking a Call (1)
- ❍ Texting (2)
- ❍ Online game (3)

Q21: What kind of vehicle did the woman texting hit in the No Glance is Worth a Life, It Can Wait video? (The video focusing on the mother and child in the car)

- ❍ Van (1)
- ❍ Sedan (2)
- ❍ Truck (3)

Q22: What color was the bicycle the boy was riding in the No Glance is Worth a Life, It Can Wait video? (The video focusing on the mother and child in the car)

- ❍ Orange (1)
- ❍ Blue (2)
- ❍ Red (3)

Humor:
Immediate/Long-Term Recall Survey-Humor

Q1: How interesting did you find the Afterlife video? (This has the main character who is female)
- ❍ Extremely interested (1)
- ❍ Very Interested (2)
- ❍ Mildly interested (3)
- ❍ Not interesting at all (4)

Q2: How interesting did you find the Afterlife video? (This has the main character who is female)
- ❍ Extremely effective (1)
- ❍ Very effective (2)
- ❍ Mildly effective (3)
- ❍ Not effective at all (4)

Q3: How interesting did you find the One Unlucky Guy video? (The main character is male)

- ❍ Extremely interested (1)
- ❍ Very Interested (2)
- ❍ Mildly interested (3)
- ❍ Not interesting at all (4)

Q4: How effective did you find the One Unlucky Guy video? (The main character is male)

- ❍ Extremely effective (1)
- ❍ Very effective (2)
- ❍ Mildly effective (3)
- ❍ Not effective at all (4)

Q5: How interesting did you find the Not Safe for Anyone video? (The video with a car on a dark street)
- ❍ Extremely interested (1)
- ❍ Very Interested (2)
- ❍ Mildly interested (3)
- ❍ Not interesting at all (4)

Q6: How effective did you find the Not Safe for Anyone video? (The videonwith a car on a dark street)

- ❍ Extremely effective (1)
- ❍ Very effective (2)
- ❍ Mildly effective (3)
- ❍ Not effective at all (4)

Q7: After watching the videos rank the following statements.

| | Disagree Very Strongly (1) | Disagree Strongly (2) | Disagree (3) | Neither Agree or Disagree (4) | Agree (5) | Agree Strongly (6) | Agree Very Strongly (7) |
|---|---|---|---|---|---|---|---|
| I worry about texting and driving (1) | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ |
| I feel confident I can safely drive a car and text at the same time. (2) | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ |
| I feel less confident about others ability to drive and text at the same time (3) | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ |
| I feel that my chances of being in a car accident from texting are high. (4) | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ |

Q8: After watching the videos rank the following statements.

| | Disagree Very Strongly (1) | Disagree Strongly (2) | Disagree (3) | Neither Agree or Disagree (4) | Agree (5) | Agree Strongly (6) | Agree Very Strongly (7) |
|---|---|---|---|---|---|---|---|
| The thought of texting and driving scares me. (1) | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ |
| If I texted while driving my life would be in | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| danger (2) Texting and driving would endanger my future (3) | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ |

Q9: After watching the videos rank the following statements.

| | Disagree Very Strongly (1) | Disagree Strongly (2) | Disagree (3) | Neither Agree or Disagree (4) | Agree (5) | Agree Strongly (6) | Agree Very Strongly (7) |
|---|---|---|---|---|---|---|---|
| I do not want to be in an accident caused by my texting and driving (1) | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ |
| Putting the phone down while driving can prevent future problems for me (2) | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ |
| I have a lot to gain by not texting while driving (3) | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ |

Q10: After watching the videos rank the following statements.

| | Disagree Very Strongly (1) | Disagree Strongly (2) | Disagree (3) | Neither Agree or Disagree (4) | Agree (5) | Agree Strongly (6) | Agree Very Strongly (7) |
|---|---|---|---|---|---|---|---|
| My friends would make fun of me if I didn't text while driving. (1) | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ |
| My girlfriend (or boyfriend) will get upset with me if I don't | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| respond to their text quickly. (2) | | | | | | | |
| My parents will get upset with me if I don't respond to their text quickly. (3) | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ |
| My friends will get upset with me if I don't respond to their text quickly. (4) | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ |
| It is hard to resist reading a text when I am driving when I hear the text message alert. (5) | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ |
| It is hard to resist texting when I am driving when I am in a serious conversation (6) | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ |
| It is hard to resist texting when I am driving when a person I am interested in texts me. (7) | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ |

Q11: After watching the videos rank the following statements.

| | Disagree Very Strongly (1) | Disagree Strongly (2) | Disagree (3) | Neither Agree or Disagree (4) | Agree (5) | Agree Strongly (6) | Agree Very Strongly (7) |
|---|---|---|---|---|---|---|---|
| I will stop texting and driving when I get stopped by police and ticketed. (1) | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ |
| I will stop texting and driving when someone I know is in an accident (2) | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ |
| I will stop texting and driving when my parents tells me to stop (3) | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ |
| I will stop texting and driving when I am in an accident because of texting and driving. (4) | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ |
| It is safe for me to stop texting while I'm driving (5) | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ |

Q12: Do you pay attention to these videos on television?

- ❍ Yes (1)
- ❍ No (2)

Q13: Where do you see most of the videos you see?

- ❍ Television (1)
- ❍ Facebook (2)
- ❍ YouTube (3)
- ❍ Other social networking sites (4)

Q14: Who was the girl talking to in the video Afterlife? (Where the main character is a female)

- ❍ Other dead people (1)
- ❍ Grim Reaper (2)
- ❍ Both dead people and the Grim Reaper (3)

Q15: Who was the girl texting when she crashed?

- ❍ Her Parents (1)
- ❍ Her Boyfriend (2)
- ❍ Her Best Friend (3)

Q16: Where did the girl find her cell phone?

- ❍ In her pocket (1)
- ❍ In her stomach (2)
- ❍ In her hand (3)

Q17: What's the first thing that happened to the Unlucky Guy? (Where the main character is male)

- ❍ Robbery (1)
- ❍ Lightning Strike (2)
- ❍ Plane Crash (3)

Q18: What did the Unlucky Guy ask for in the crashing plane?

- ❍ Oxygen (1)
- ❍ A drink (2)
- ❍ Peanuts (3)

Q19: Where was the Unlucky Guy when he was struck by lightning?

- ❍ Forest (1)
- ❍ Beach (2)
- ❍ Open Field (3)

Q20: Who is driving the car in the Not Safe for Anyone video? (This is the video with a car on a dark street)

- ❍ A couple (1)
- ❍ A man (2)
- ❍ A deer (3)

Q21: The man texting in Not Safe For Anyone video was meant to be imitating what type of animal? (This is the video with a car on a dark street)

- ❍ Dog (1)
- ❍ Possum (2)
- ❍ Deer (3)

Q22: What did the couple in the car do after a large group of people crossed the road in the darkness? (This is the video with a car on a dark street)

- ❍ Laughed (1)
- ❍ Rolled eyes (2)
- ❍ Looked at each other (3)

Informational/Celebrity:

Immediate/Long-Term Recall Survey-Informational/Celebrity

Q1: How interesting did you find the Demi Lovato video? (Demi Lovato is the actress/musician discussing texting and driving)

- ❍ Extremely interested (1)
- ❍ Very Interested (2)
- ❍ Mildly interested (3)
- ❍ Not interesting at all (4)

Q2: How effective did you find the Demi Lovato video? (Demi Lovato is the actress/musician discussing texting and driving.)

- ❍ Extremely effective (1)
- ❍ Very effective (2)
- ❍ Mildly effective (3)
- ❍ Not effective at all (4)

Q3: How interesting did you find the Rascal Flatts video? (Rascal Flatts are the country/pop singing trio)

- ❍ Extremely interested (1)
- ❍ Very Interested (2)
- ❍ Mildly interested (3)
- ❍ Not interesting at all (4)

Q4: How effective did you find the Rascal Flatts video? (Rascal Flatts are a country/pop trio)

- ❍ Extremely effective (1)
- ❍ Very effective (2)
- ❍ Mildly effective (3)
- ❍ Not effective at all (4)

Q5: How interesting did you find the Chandler video? (Chandler is the young man talking about his texting and driving experience)

- ❍ Extremely interested (1)
- ❍ Very Interested (2)
- ❍ Mildly interested (3)
- ❍ Not interesting at all (4)

Q6: How effective did you find the Chandler video? (Chandler is the young man talking about his texting and driving experience)

- ❍ Extremely effective (1)
- ❍ Very effective (2)
- ❍ Mildly effective (3)
- ❍ Not effective at all (4)

Q7: After watching the videos rank the following statements.

| | Disagree Very Strongly (1) | Disagree Strongly (2) | Disagree (3) | Neither Agree or Disagree (4) | Agree (5) | Agree Strongly (6) | Agree Very Strongly (7) |
|---|---|---|---|---|---|---|---|
| I worry about texting and driving (1) | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ |
| I feel confident I can safely drive a car and text at the same time. (2) | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ |
| I feel less confident about others ability to drive and text at the same time (3) | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ |
| I feel that my chances of being in a car accident from texting are high. (4) | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ |

Q8: After watching the videos rank the following statements.

| | Disagree Very Strongly (1) | Disagree Strongly (2) | Disagree (3) | Neither Agree or Disagree (4) | Agree (5) | Agree Strongly (6) | Agree Very Strongly (7) |
|---|---|---|---|---|---|---|---|
| The thought of texting and | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| driving scares me. (1) | | | | | | | |
| If I texted while driving my life would be in danger (2) | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ |
| Texting and driving would endanger my future (3) | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ |

Q9: After watching the videos rank the following statements.

| | Disagree Very Strongly (1) | Disagree Strongly (2) | Disagree (3) | Neither Agree or Disagree (4) | Agree (5) | Agree Strongly (6) | Agree Very Strongly (7) |
|---|---|---|---|---|---|---|---|
| I do not want to be in an accident caused by my texting and driving (1) | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ |
| Putting the phone down while driving can prevent future problems for me (2) | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ |
| I have a lot to gain by not texting while driving (3) | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ |

Q10: After watching the videos rank the following statements.

| | Disagree Very Strongly (1) | Disagree Strongly (2) | Disagree (3) | Neither Agree or Disagree (4) | Agree (5) | Agree Strongly (6) | Agree Very Strongly (7) |
|---|---|---|---|---|---|---|---|
| My friends would make fun of me if I didn't text while driving. | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| (1) My girlfriend (or boyfriend) will get upset with me if I don't respond to their text quickly. | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ |
| (2) My parents will get upset with me if I don't respond to their text quickly. | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ |
| (3) My friends will get upset with me if I don't respond to their text quickly. | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ |
| (4) It is hard to resist reading a text when I am driving when I hear the text message alert. | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ |
| (5) It is hard to resist texting when I am driving when I am in a serious conversation | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ |
| (6) It is hard to resist texting when I am driving when a person I am interested in texts me. | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ |
| (7) | | | | | | | |

Q11: After watching the videos rank the following statements.

| | Disagree Very Strongly (1) | Disagree Strongly (2) | Disagree (3) | Neither Agree or Disagree (4) | Agree (5) | Agree Strongly (6) | Agree Very Strongly (7) |
|---|---|---|---|---|---|---|---|
| I will stop texting and driving when I get stopped by police and ticketed. (1) | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ |
| I will stop texting and driving when someone I know is in an accident (2) | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ |
| I will stop texting and driving when my parents tells me to stop (3) | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ |
| I will stop texting and driving when I am in an accident because of texting and driving. (4) | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ |
| It is safe for me to stop texting while I'm driving (5) | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ |

Q12: Do you pay attention to these videos on television?

- Yes (1)
- No (2)

Q13: Where do you see most of the videos you see?

- Television (1)
- Facebook (2)
- YouTube (3)
- Other social networking sites (4)

Q14: Where was the singer and actress Demi Lovato in her video?

- School (1)
- Sound stage (2)
- Concert Hall (3)

Q15: What was singer and actress Demi Lovato's sign for her fans?

- Heart with hands (1)
- Palm on heart (2)
- Thumbs up (3)

Q16: What does singer and actress Demi Lovato text when she's getting ready to drive?

- STOP (1)
- #X (2)
- Shut off phone (3)

Q17: How many guys are in the country band Rascal Flatts?

- One (1)
- Two (2)
- Three (3)

Q18: What did country band Rascal Flatts say #X means?

- Tells others your driving (1)
- Call me (2)
- Don't call (3)

Q19: The members of the country band Rascal Flatts were all wearing the same color shirt/jacket in the #X video, what was it?

- ❍ Green (1)
- ❍ Blue (2)
- ❍ Black (3)

Q20: How many children did the young man Chandler kill in his accident described in the Chandler video?

- ❍ One (1)
- ❍ Two (2)
- ❍ Three (3)

Q21: What type of vehicle did Chandler hit?

- ❍ Sedan (1)
- ❍ Truck (2)
- ❍ Mini Van (3)

Q22: What was the message he was texting when he caused the accident in the Chandler video?

- ❍ Call me (1)
- ❍ OK (2)
- ❍ I love you (3)

Control Group:

Immediate/Long-Term Recall Survey:

Q1: After watching the videos rank the following statements.

| | Disagree Very Strongly (1) | Disagree Strongly (2) | Disagree (3) | Neither Agree or Disagree (4) | Agree (5) | Agree Strongly (6) | Agree Very Strongly (7) |
|---|---|---|---|---|---|---|---|
| I worry about texting and driving (1) | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ |
| I feel confident I can safely drive a car and text at the same time. (2) | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ |
| I feel less confident about others ability to drive and text at the same time (3) | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ |
| I feel that my chances of being in a car accident from texting are high. (4) | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ |

Q2: After watching the videos rank the following statements.

| | Disagree Very Strongly (1) | Disagree Strongly (2) | Disagree (3) | Neither Agree or Disagree (4) | Agree (5) | Agree Strongly (6) | Agree Very Strongly (7) |
|---|---|---|---|---|---|---|---|
| The thought of texting and driving scares me. (1) | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| If I texted while driving my life would be in danger (2) | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ |
| Texting and driving would endanger my future (3) | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ |

Q3: After watching the videos rank the following statements.

| | Disagree Very Strongly (1) | Disagree Strongly (2) | Disagree (3) | Neither Agree or Disagree (4) | Agree (5) | Agree Strongly (6) | Agree Very Strongly (7) |
|---|---|---|---|---|---|---|---|
| I do not want to be in an accident caused by my texting and driving (1) | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ |
| Putting the phone down while driving can prevent future problems for me (2) | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ |
| I have a lot to gain by not texting while driving (3) | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ |

Q4: After watching the videos rank the following statements.

| | Disagree Very Strongly (1) | Disagree Strongly (2) | Disagree (3) | Neither Agree or Disagree (4) | Agree (5) | Agree Strongly (6) | Agree Very Strongly (7) |
|---|---|---|---|---|---|---|---|
| My friends would make fun of me if I didn't text while driving. (1) | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| My girlfriend (or boyfriend) will get upset with me if I don't respond to their text quickly. (2) | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ |
| My parents will get upset with me if I don't respond to their text quickly. (3) | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ |
| My friends will get upset with me if I don't respond to their text quickly. (4) | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ |
| It is hard to resist reading a text when I am driving when I hear the text message alert. (5) | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ |
| It is hard to resist texting when I am driving when I am in a serious conversation (6) | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ |
| It is hard to resist texting when I am driving when a person I am interested in texts me. (7) | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ |

Q5: After watching the videos rank the following statements.

| | Disagree Very Strongly (1) | Disagree Strongly (2) | Disagree (3) | Neither Agree or Disagree (4) | Agree (5) | Agree Strongly (6) | Agree Very Strongly (7) |
|---|---|---|---|---|---|---|---|
| I will stop texting and driving when I get stopped by police and ticketed. (1) | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ |
| I will stop texting and driving when someone I know is in an accident (2) | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ |
| I will stop texting and driving when my parents tells me to stop (3) | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ |
| I will stop texting and driving when I am in an accident because of texting and driving. (4) | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ |
| It is safe for me to stop texting while I'm driving (5) | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ |

Q6: What is the hand signal for left turn?

- ❍ Drivers left arm out straight (1)
- ❍ Drivers left arm bent at the elbow (2)
- ❍ Drivers left arm down. (3)

Q7: What side of the road was the vehicle being driven on?

- ❍ Right (1)
- ❍ Left (2)

Q8: What must drivers do when they are attempting to change lanes or make turns?

- ❍ Accelerate (1)
- ❍ Stop (2)
- ❍ Ensure the road is clear (3)

Q9: What will happen if the driver arrives at the driver testing center without proper forms?

- ❍ Examiner will stop the test (1)
- ❍ Examiner will allow the test (2)
- ❍ Driver will be fined (3)

Appendix E

Production Quality Survey

Q1 For the video Public Service Announcement Called Afterlife (Main Character is hanging with the Grim Reaper and other dead folks) please rate the following:

| | Very Good (1) | Good (2) | Fair (3) | Poor (4) | Very Poor (5) |
|---|---|---|---|---|---|
| Image Quality (1) | ❍ | ❍ | ❍ | ❍ | ❍ |
| Sound Quality (2) | ❍ | ❍ | ❍ | ❍ | ❍ |
| Impact (3) | ❍ | ❍ | ❍ | ❍ | ❍ |
| Lighting (4) | ❍ | ❍ | ❍ | ❍ | ❍ |
| Talent/Acting (5) | ❍ | ❍ | ❍ | ❍ | ❍ |
| Overall Quality (6) | ❍ | ❍ | ❍ | ❍ | ❍ |
| Message Effectiveness (7) | ❍ | ❍ | ❍ | ❍ | ❍ |

Q2 For the video Public Service Announcement Called One Unlucky Guy (Main Character is a guy with VERY bad luck) please rate the following:

| | Very Good (1) | Good (2) | Fair (3) | Poor (4) | Very Poor (5) |
|---|---|---|---|---|---|
| Image Quality (1) | ❍ | ❍ | ❍ | ❍ | ❍ |
| Sound Quality (2) | ❍ | ❍ | ❍ | ❍ | ❍ |
| Impact (3) | ❍ | ❍ | ❍ | ❍ | ❍ |
| Lighting (4) | ❍ | ❍ | ❍ | ❍ | ❍ |
| Talent/Acting (5) | ❍ | ❍ | ❍ | ❍ | ❍ |
| Overall Quality (6) | ❍ | ❍ | ❍ | ❍ | ❍ |
| Message Effectiveness (7) | ❍ | ❍ | ❍ | ❍ | ❍ |

Q3 For the video Public Service Announcement Called Not Safe For Anyone (The video with Deer as Main Characters) please rate the following:

| | Very Good (1) | Good (2) | Fair (3) | Poor (4) | Very Poor (5) |
|---|---|---|---|---|---|
| Image Quality (1) | ❍ | ❍ | ❍ | ❍ | ❍ |
| Sound Quality (2) | ❍ | ❍ | ❍ | ❍ | ❍ |
| Impact (3) | ❍ | ❍ | ❍ | ❍ | ❍ |
| Lighting (4) | ❍ | ❍ | ❍ | ❍ | ❍ |
| Talent/Acting (5) | ❍ | ❍ | ❍ | ❍ | ❍ |
| Overall Quality (6) | ❍ | ❍ | ❍ | ❍ | ❍ |
| Message Effectiveness (7) | ❍ | ❍ | ❍ | ❍ | ❍ |

Q4 For the video Public Service Announcement Called Manifesto Online (The video with the Teenagers and the Crossword Puzzle) please rate the following:

| | Very Good (1) | Good (2) | Fair (3) | Poor (4) | Very Poor (5) |
|---|---|---|---|---|---|
| Image Quality (1) | ❍ | ❍ | ❍ | ❍ | ❍ |
| Sound Quality (2) | ❍ | ❍ | ❍ | ❍ | ❍ |
| Impact (3) | ❍ | ❍ | ❍ | ❍ | ❍ |
| Lighting (4) | ❍ | ❍ | ❍ | ❍ | ❍ |
| Talent/Acting (5) | ❍ | ❍ | ❍ | ❍ | ❍ |
| Overall Quality (6) | ❍ | ❍ | ❍ | ❍ | ❍ |
| Message Effectiveness (7) | ❍ | ❍ | ❍ | ❍ | ❍ |

Q5 For the video Public Service Announcement Called No Glance is Worth a Life (The video with the Mom and Little Girl in the Car and a boy riding a bike) please rate the following:

| | Very Good (1) | Good (2) | Fair (3) | Poor (4) | Very Poor (5) |
|---|---|---|---|---|---|
| Image Quality (1) | ❍ | ❍ | ❍ | ❍ | ❍ |
| Sound Quality (2) | ❍ | ❍ | ❍ | ❍ | ❍ |
| Impact (3) | ❍ | ❍ | ❍ | ❍ | ❍ |
| Lighting (4) | ❍ | ❍ | ❍ | ❍ | ❍ |
| Talent/Acting (5) | ❍ | ❍ | ❍ | ❍ | ❍ |
| Overall Quality (6) | ❍ | ❍ | ❍ | ❍ | ❍ |
| Message Effectiveness (7) | ❍ | ❍ | ❍ | ❍ | ❍ |

Q6 For the video Public Service Announcement Called Don't Text and Drive (The stop action video where the young teen driver talks with the older woman driver ) please rate the following:

| | Very Good (1) | Good (2) | Fair (3) | Poor (4) | Very Poor (5) |
|---|---|---|---|---|---|
| Image Quality (1) | ❍ | ❍ | ❍ | ❍ | ❍ |
| Sound Quality (2) | ❍ | ❍ | ❍ | ❍ | ❍ |
| Impact (3) | ❍ | ❍ | ❍ | ❍ | ❍ |
| Lighting (4) | ❍ | ❍ | ❍ | ❍ | ❍ |
| Talent/Acting (5) | ❍ | ❍ | ❍ | ❍ | ❍ |
| Overall Quality (6) | ❍ | ❍ | ❍ | ❍ | ❍ |
| Message Effectiveness (7) | ❍ | ❍ | ❍ | ❍ | ❍ |

Q7 For the video Public Service Announcement with Demi Lovato (The young female musician) please rate the following:

| | Very Good (1) | Good (2) | Fair (3) | Poor (4) | Very Poor (5) |
|---|---|---|---|---|---|
| Image Quality (1) | ❍ | ❍ | ❍ | ❍ | ❍ |
| Sound Quality (2) | ❍ | ❍ | ❍ | ❍ | ❍ |
| Impact (3) | ❍ | ❍ | ❍ | ❍ | ❍ |
| Lighting (4) | ❍ | ❍ | ❍ | ❍ | ❍ |
| Talent/Acting (5) | ❍ | ❍ | ❍ | ❍ | ❍ |
| Overall Quality (6) | ❍ | ❍ | ❍ | ❍ | ❍ |
| Message Effectiveness (7) | ❍ | ❍ | ❍ | ❍ | ❍ |

Q8 For the video Public Service Announcement with Rascal Flatts (The country music group) please rate the following:

| | Very Good (1) | Good (2) | Fair (3) | Poor (4) | Very Poor (5) |
|---|---|---|---|---|---|
| Image Quality (1) | ❍ | ❍ | ❍ | ❍ | ❍ |
| Sound Quality (2) | ❍ | ❍ | ❍ | ❍ | ❍ |
| Impact (3) | ❍ | ❍ | ❍ | ❍ | ❍ |
| Lighting (4) | ❍ | ❍ | ❍ | ❍ | ❍ |
| Talent/Acting (5) | ❍ | ❍ | ❍ | ❍ | ❍ |
| Overall Quality (6) | ❍ | ❍ | ❍ | ❍ | ❍ |
| Message Effectiveness (7) | ❍ | ❍ | ❍ | ❍ | ❍ |

Q9 For the video Public Service Announcement with Chandler (The young boy who gives an interview about his accident) please rate the following:

| | Very Good (1) | Good (2) | Fair (3) | Poor (4) | Very Poor (5) |
|---|---|---|---|---|---|
| Image Quality (1) | ❍ | ❍ | ❍ | ❍ | ❍ |
| Sound Quality (2) | ❍ | ❍ | ❍ | ❍ | ❍ |
| Impact (3) | ❍ | ❍ | ❍ | ❍ | ❍ |
| Lighting (4) | ❍ | ❍ | ❍ | ❍ | ❍ |
| Talent/Acting (5) | ❍ | ❍ | ❍ | ❍ | ❍ |
| Overall Quality (6) | ❍ | ❍ | ❍ | ❍ | ❍ |
| Message Effectiveness (7) | ❍ | ❍ | ❍ | ❍ | ❍ |

Appendix F

Safety Effectiveness Survey

Q1 For the video Public Service Announcement called Afterlife (Main Character is hanging with the Grim Reaper and other dead folks) please rate the following:

| | Strongly Agree (1) | Agree (2) | Uncertain (3) | Disagree (4) | Strongly Disagree (5) |
|---|---|---|---|---|---|
| There was a Clear Safety Message (8) | ❍ | ❍ | ❍ | ❍ | ❍ |
| There was an Effective Safety Message (11) | ❍ | ❍ | ❍ | ❍ | ❍ |
| The PSA Caught my Attention (1) | ❍ | ❍ | ❍ | ❍ | ❍ |
| The PSA Content Was Valid (4) | ❍ | ❍ | ❍ | ❍ | ❍ |
| The PSA Content Was Useful (5) | ❍ | ❍ | ❍ | ❍ | ❍ |
| The PSA Content was Accurate (6) | ❍ | ❍ | ❍ | ❍ | ❍ |
| There was an Obvious Safety Objective (9) | ❍ | ❍ | ❍ | ❍ | ❍ |
| The PSA Content was Bias-Free (10) | ❍ | ❍ | ❍ | ❍ | ❍ |

Q2 For the video Public Service Announcement called On Unlucky Guy (Main Character is a guy with VERY bad luck) please rate the following:

| | Strongly Agree (1) | Agree (2) | Uncertain (3) | Disagree (4) | Strongly Disagree (5) |
|---|---|---|---|---|---|
| There was a Clear Safety Message (8) | ❍ | ❍ | ❍ | ❍ | ❍ |
| There was an Effective Safety Message (11) | ❍ | ❍ | ❍ | ❍ | ❍ |
| The PSA Caught my Attention (1) | ❍ | ❍ | ❍ | ❍ | ❍ |
| The PSA Content Was Valid (4) | ❍ | ❍ | ❍ | ❍ | ❍ |
| The PSA Content Was Useful (5) | ❍ | ❍ | ❍ | ❍ | ❍ |
| The PSA Content was Accurate (6) | ❍ | ❍ | ❍ | ❍ | ❍ |
| There was an Obvious Safety Objective (9) | ❍ | ❍ | ❍ | ❍ | ❍ |
| The PSA Content was Bias-Free (10) | ❍ | ❍ | ❍ | ❍ | ❍ |

Q3 For the video Public Service Announcement called Not Safe For Anyone (The video with Deer as Main Characters) please rate the following:

| | Strongly Agree (1) | Agree (2) | Uncertain (3) | Disagree (4) | Strongly Disagree (5) |
|---|---|---|---|---|---|
| There was a Clear Safety Message (8) | ❍ | ❍ | ❍ | ❍ | ❍ |
| There was an Effective Safety Message (11) | ❍ | ❍ | ❍ | ❍ | ❍ |
| The PSA Caught my Attention (1) | ❍ | ❍ | ❍ | ❍ | ❍ |
| The PSA Content Was Valid (4) | ❍ | ❍ | ❍ | ❍ | ❍ |
| The PSA Content Was Useful (5) | ❍ | ❍ | ❍ | ❍ | ❍ |
| The PSA Content was Accurate (6) | ❍ | ❍ | ❍ | ❍ | ❍ |
| There was an Obvious Safety Objective (9) | ❍ | ❍ | ❍ | ❍ | ❍ |
| The PSA Content was Bias-Free (10) | ❍ | ❍ | ❍ | ❍ | ❍ |

Q4 For the video Public Service Announcement called Manifesto Online (The video with the Teenagers and the Crossword Puzzle) please rate the following:

| | Strongly Agree (1) | Agree (2) | Uncertain (3) | Disagree (4) | Strongly Disagree (5) |
|---|---|---|---|---|---|
| There was a Clear Safety Message (8) | ❍ | ❍ | ❍ | ❍ | ❍ |
| There was an Effective Safety Message (11) | ❍ | ❍ | ❍ | ❍ | ❍ |
| The PSA Caught my Attention (1) | ❍ | ❍ | ❍ | ❍ | ❍ |
| The PSA Content Was Valid (4) | ❍ | ❍ | ❍ | ❍ | ❍ |
| The PSA Content Was Useful (5) | ❍ | ❍ | ❍ | ❍ | ❍ |
| The PSA Content was Accurate (6) | ❍ | ❍ | ❍ | ❍ | ❍ |
| There was an Obvious Safety Objective (9) | ❍ | ❍ | ❍ | ❍ | ❍ |
| The PSA Content was Bias-Free (10) | ❍ | ❍ | ❍ | ❍ | ❍ |

Q5 For the video Public Service Announcement called No Glance is Worth a Life (The video with the Mom and Little Girl in the Car and a boy riding a bike) please rate the following:

| | Strongly Agree (1) | Agree (2) | Uncertain (3) | Disagree (4) | Strongly Disagree (5) |
|---|---|---|---|---|---|
| There was a Clear Safety Message (8) | ❍ | ❍ | ❍ | ❍ | ❍ |
| There was an Effective Safety Message (11) | ❍ | ❍ | ❍ | ❍ | ❍ |
| The PSA Caught my Attention (1) | ❍ | ❍ | ❍ | ❍ | ❍ |
| The PSA Content Was Valid (4) | ❍ | ❍ | ❍ | ❍ | ❍ |
| The PSA Content Was Useful (5) | ❍ | ❍ | ❍ | ❍ | ❍ |
| The PSA Content was Accurate (6) | ❍ | ❍ | ❍ | ❍ | ❍ |
| There was an Obvious Safety Objective (9) | ❍ | ❍ | ❍ | ❍ | ❍ |
| The PSA Content was Bias-Free (10) | ❍ | ❍ | ❍ | ❍ | ❍ |

Q6 For the video Public Service Announcement called Don't Text and Drive (The stop action video where the young teen driver talks with the older woman driver ) please rate the following:

| | Strongly Agree (1) | Agree (2) | Uncertain (3) | Disagree (4) | Strongly Disagree (5) |
|---|---|---|---|---|---|
| There was a Clear Safety Message (8) | ❍ | ❍ | ❍ | ❍ | ❍ |
| There was an Effective Safety Message (11) | ❍ | ❍ | ❍ | ❍ | ❍ |
| The PSA Caught my Attention (1) | ❍ | ❍ | ❍ | ❍ | ❍ |
| The PSA Content Was Valid (4) | ❍ | ❍ | ❍ | ❍ | ❍ |
| The PSA Content Was Useful (5) | ❍ | ❍ | ❍ | ❍ | ❍ |
| The PSA Content was Accurate (6) | ❍ | ❍ | ❍ | ❍ | ❍ |
| There was an Obvious Safety Objective (9) | ❍ | ❍ | ❍ | ❍ | ❍ |
| The PSA Content was Bias-Free (10) | ❍ | ❍ | ❍ | ❍ | ❍ |

Q7 For the video Public Service Announcement with Demi Lovato (The young female musician) please rate the following:

| | Strongly Agree (1) | Agree (2) | Uncertain (3) | Disagree (4) | Strongly Disagree (5) |
|---|---|---|---|---|---|
| There was a Clear Safety Message (8) | ❍ | ❍ | ❍ | ❍ | ❍ |
| There was an Effective Safety Message (11) | ❍ | ❍ | ❍ | ❍ | ❍ |
| The PSA Caught my Attention (1) | ❍ | ❍ | ❍ | ❍ | ❍ |
| The PSA Content Was Valid (4) | ❍ | ❍ | ❍ | ❍ | ❍ |
| The PSA Content Was Useful (5) | ❍ | ❍ | ❍ | ❍ | ❍ |
| The PSA Content was Accurate (6) | ❍ | ❍ | ❍ | ❍ | ❍ |
| There was an Obvious Safety Objective (9) | ❍ | ❍ | ❍ | ❍ | ❍ |
| The PSA Content was Bias-Free (10) | ❍ | ❍ | ❍ | ❍ | ❍ |

Q8 For the video Public Service Announcement with Rascal Flatts (The country music group) please rate the following:

| | Strongly Agree (1) | Agree (2) | Uncertain (3) | Disagree (4) | Strongly Disagree (5) |
|---|---|---|---|---|---|
| There was a Clear Safety Message (8) | ❍ | ❍ | ❍ | ❍ | ❍ |
| There was an Effective Safety Message (11) | ❍ | ❍ | ❍ | ❍ | ❍ |
| The PSA Caught my Attention (1) | ❍ | ❍ | ❍ | ❍ | ❍ |
| The PSA Content Was Valid (4) | ❍ | ❍ | ❍ | ❍ | ❍ |
| The PSA Content Was Useful (5) | ❍ | ❍ | ❍ | ❍ | ❍ |
| The PSA Content was Accurate (6) | ❍ | ❍ | ❍ | ❍ | ❍ |
| There was an Obvious Safety Objective (9) | ❍ | ❍ | ❍ | ❍ | ❍ |
| The PSA Content was Bias-Free (10) | ❍ | ❍ | ❍ | ❍ | ❍ |

Q9 For the video Public Service Announcement with Chandler (The young boy who gives an interview about his accident) please rate the following:

| | Strongly Agree (1) | Agree (2) | Uncertain (3) | Disagree (4) | Strongly Disagree (5) |
|---|---|---|---|---|---|
| There was a Clear Safety Message (8) | ❍ | ❍ | ❍ | ❍ | ❍ |
| There was an Effective Safety Message (11) | ❍ | ❍ | ❍ | ❍ | ❍ |
| The PSA Caught my Attention (1) | ❍ | ❍ | ❍ | ❍ | ❍ |
| The PSA Content Was Valid (4) | ❍ | ❍ | ❍ | ❍ | ❍ |
| The PSA Content Was Useful (5) | ❍ | ❍ | ❍ | ❍ | ❍ |
| The PSA Content was Accurate (6) | ❍ | ❍ | ❍ | ❍ | ❍ |
| There was an Obvious Safety Objective (9) | ❍ | ❍ | ❍ | ❍ | ❍ |
| The PSA Content was Bias-Free (10) | ❍ | ❍ | ❍ | ❍ | ❍ |