ABSTRACT

Title of Document: THE MERGING OF COMMERCIAL FILM AND PUBLIC HEALTH: THE DEVELOPMENT AND EVALUATION OF A FOUND FOOTAGE ANTI-TEXTING AND DRIVNG PSA.

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While progress is being made to improve risky driving behaviors, texting and driving is a growing concern for young drivers. Youth are susceptible to film and media influence, and fear appeals are often used in PSAs to discourage risky driving. Found footage filmmaking is common in horror films and is credited with adding to dread and audience connection. This study sought to determine the effectiveness of an anti-texting and driving found footage style PSA on college students. Two PSAs were tested (n=428) using a randomized control pre-posttest study. No significant differences were found between the found footage and external perspective style PSAs. However, the PSAs significantly affected behavioral intent and fear arousal. Qualitative data suggested that quality and realism needed improvement, and that participants viewed both PSAs as potential found footage. More research is needed to determine how found footage and film tactics like these can influence health behaviors.

THE MERGING OF COMMERCIAL FILM AND PUBLIC HEALTH: THE DEVELOPMENT AND EVALUATION OF A FOUND FOOTAGE ANTI-TEXTING AND DRIVNG PSA.

By

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Thesis submitted to the Faculty of the Graduate School of the
University of Maryland, College Park in partial fulfillment
of the requirements for the degree of
Master of Public Health
2014

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Dedication

To my loving husband, best friend, and rock, Peter Conway.

Acknowledgements

Special thanks to Adam Watters, Evan Krenik, and Jen Krenik for all their help during the filming process.

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Chapter 1: Introduction

Problem Statement

Young drivers are the most likely population to engage in risky driving behaviors (Sarkar & Andreas, 2004). Driver error is by far the most common reason for crashes. Among these crashes, young drivers (ages 15 to 18) make the errors almost 80% of the time (Curry, Hafetz, Kallan, Winston & Durbin, 2011). Inadequate surveillance of surroundings, driving too fast, and distracted driving together account for about half of all crashes among this age group (Curry, Hafetz, Kallan, Winston & Durbin, 2011). Young drivers (i.e., those under 20) make up the largest group of distracted drivers in fatal crashes as well, with 11% of young drivers in fatal automobile crashes being distracted at the time of the crash (Ascone, Lindsey & Varghese, 2009). Even more alarmingly, these behaviors are not disappearing over time, with newer issues like texting and driving coming to the forefront. Almost half of youth ages 12 to 17 in the United States say they have been in a car with a driver that was texting (Madden & Lenhart, 2009).

Commercial media and the entertainment industry seem to affect behavior, especially for youth who are more susceptible to its influence (Anderson, Berkowitz, Donnerstein, Huesmann, Johnson, Linz, Malamuth & Wartella, 2003; Song, Ling, Neilands & Glantz, 2007). However, current studies indicate ambiguity as to how media exposure affects perceptions of health hazards and risks (Sjoberg & Engelberg, 2010). The rise and consistency of young risky driving behaviors, combined with the connection between youth and media exposure and influence, gives credence to looking at commercial film and examining what health communication theory and practice can learn and adapt from them. Horror films have the potential to particularly stick with audiences,

and many horror films are now using found footage tactics to add to the sense of dread and realism (Cantor, 2004; Ebert, 2008; Starnes, 2008; Telotte, 2001).

Significance and Research Questions

Since message realism and connection are key constructs that affect health behavior change (Boenker, 2011), using found footage in an anti-texting and driving public service announcement (PSA) could have a significant impact on young adults. This study sought to examine the effects of a found footage style PSA on behavioral intent. The PSA used fear appeals and theoretical constructs of the Extended Parallel Process Model (EPPM), and other constructs such as modeling appeals/observational learning and social norms, to deter young adults from texting and driving.

This research has potential implications for both theory and practice. The potential for film to influence behavior change, and a closer look at how health communication can be enhanced using tactics employed by current commercial films should have implications for health communication and behavior theory. This work should inform the crafting of future health communication messages and PSAs to best fit the needs of this important group of risky drivers, as well as informing future communications research within this population. Specifically, this research could grant insight into how to best reach young adults to discourage texting and driving. Found footage tactics have rarely been used by the public health sector, so this research is a first step in determining the effects this type of blending of the commercial film and PSAs could have on health behaviors. This study sought to accomplish this by testing the effectiveness of this PSA through use of a randomized control trial, while also gathering qualitative reactions to the found footage style.

The following research questions were examined in this study and are pertinent to the theory and practice of health communication and mass media effects:

- The main research questions are:
    - How effective is the found footage style PSA developed for this study in changing college students' perceived susceptibility, perceived severity, self efficacy, response efficacy, and behavioral intent as compared to an identical PSA shot from an external point of view?
        - H_1: The found footage style PSA increases perceived susceptibility, perceived severity, self efficacy, response efficacy, and behavioral intent more significantly than the PSA shot from an external perspective.
    - Did the PSAs generally evoke differing degrees of found footage response (defined by message involvement and fear appeal responses)?
        - H_2: The found footage style PSA makes college students feel more connected to the message, feel more emotional, and have a greater fear response (i.e., found footage response) than the PSA shot from an external perspective.
- An additional exploratory research question is:
    - How do college students react to a found footage style PSA qualitatively?

This study explored these questions by conducting an analysis of a survey administered to college students before and after viewing either a found footage style anti-texting and driving PSA or the same PSA shot from an external perspective, as well as through qualitative survey feedback after the PSA viewing. Youth are a huge box-

office booster (Motion Picture Association of America, 2012), so examining found footage film tactics is particularly pertinent for college students. Driver attitudes, behaviors, beliefs, and behavioral intent were compared between pretest and posttest using constructs of the EPPM to examine the difference between the two PSAs, and modeling appeals/observational learning and social norms were examined as exploratory data to consider message involvement. Additional data (both quantitative and qualitative) was collected regarding the found footage style specifically to explore the potential broader implications of this style, as well as to make recommendations for future research regarding links between the commercial film industry and health communication/behavior change.

Terminology

- *Attitudes*: Overall feelings toward a specific behavior based on all types of evaluation and influence (Fishbein, 1967).
- *Behavioral intent*: What an individual plans to do related to a particular behavior (Fishbein, 1967).
- *Efficacy*: Variable defined by response efficacy and self efficacy in the EPPM (Witte, 1992).
- *Emotional appeals*: Messages designed to touch people and encourage them to sympathize or connect with those portrayed in the message (Sternthal & Craig, 1974).
- *Extended Parallel Process Model (EPPM)*: A communication model examining the effects of perceived threat (through the constructs of perceived susceptibility

and perceived severity) and efficacy (through the constructs of both response efficacy and self efficacy) on behavior change (Witte, 1992).

- *Fear appeals*: Persuasive messages designed to scare people by showing or describing the consequences of not performing the behavior that the message promotes (Witte, 1992).
- *Found footage*: A style of filmmaking that incorporates the use of handheld cameras to create a sense that the film was real documentary-style footage being discovered and displayed to the viewer (Telotte, 2001).
- *Found footage response*: Variable defined as combined reaction to a PSA shot in this style, specifically a combination of message involvement, fear appeals, emotional appeals, and modeling/observational learning responses.
- *Mass media campaigns*: A system of information dissemination on a particular topic, usually through buying/receiving donated time or space in the media via television networks, radio stations, and newspapers for public service advertisements (PSAs). This is often supplemented with the distribution of educational materials or news coverage of the issue using campaign events (Randolph & Viswanath, 2004).
- *Media effects*: The outcomes of the media disseminating various images, ideas, themes, and stories that may shape knowledge, opinion, attitude, and behavior among individuals, groups, and communities of audiences (Bryant & Zillman, 1994; McLeod, Kosicki & Pan, 1991).
- *Message involvement*: The level of connection to a particular media piece, particularly defined by emotional connection and response (Witte, 1992).

- *Modeling appeals*: Related to *observational learning* (a construct of Social Cognitive Theory), learning to perform a behavior through exposure to either media or interpersonal displays of the behavior, especially through peer modeling (Bandura, 1977).
- *Perceived severity*: Belief about the seriousness of coming in contact with or falling victim to the risk of a negative health behavior (Rosenstock, 1974).
- *Perceived susceptibility*: Closely linked with *risk perceptions*, belief about the likelihood of coming in contact with or falling victim to the risk of a negative health behavior (Rosenstock, 1974).
- *Perceived threat*: Variable defined by perceived severity and perceived susceptibility in the EPPM (Witte, 1992).
- *Public Service Announcement (PSA)*: Any message designed to promote positive behavior change or include a call to action for the viewer/listener. This is often a radio or cable advertisement centered around a health topic designed to promote awareness and behavior change.
- *Response efficacy*: Belief that the recommended action effectively prevents the threat being presented (Witte, 1992).
- *Risk perceptions*: Belief or judgment about the overall probability and severity of harm involved in a negative health behavior (Rosenstock, 1974).
- *Risky driving*: Any driving behavior that is against the law or puts the driver, passenger, or other vehicles on the road in danger.
- *Self efficacy*: Belief in one's ability to take action and perform the action being recommended (Witte, 1992).

- *Social norms*: Belief about whether most people approve or disapprove of a behavior; typically accepted behavior (Fishbein, 1967).
- *Young drivers*: For the purposes of this study, young drivers are defined as the population ages 15 – 25. College students are used as a proxy population for this age group in the current study.

Chapter 2: Literature Review

Young Driver Behavior

In this first section, the literature is reviewed to describe driving behavior among young drivers. While young adults (i.e., college students) are the focus of current study, adolescent studies are included in the review, since much of the research has focused on teenage drivers. These studies provide insight into the problem, since teens and young adults are both novice and risky drivers.

Youth are over-represented in crashes involving casualties in most high-income countries; this is a consistently significant public health issue (Twisk & Stacey, 2007; Williams, 2003). Youth have been documented as being involved in more crashes, being more likely to take risks on the road, and having deflated risk perceptions related to driving crashes than older adults (Ryb, Dischinger, Kufera & Read, 2006; Ginsburg, Winston, Senserrick, Garcia-Espana, Kinsman, Quistberg, Ross & Elliot, 2008; Sarkar & Andreas, 2004).

Young drivers (particularly high school teens) make up the largest group of distracted drivers (Madden & Lenhart, 2009). The National Highway Traffic Safety Administration's (NHTSA) National Motor Vehicle Crash Causation Survey collected data at the scene of a nationally representative sample of serious crashes and assigned a single driver, vehicle, or environmental factor as the main cause of each crash. Teens age 15 to 18 were highly represented as the cause of crashes, with driver error being the main issue as opposed to environmental factors. Among these crashes, young drivers (ages 15 to 18) made the error almost 80% of the time. Half of all these crashes could be attributed to distracted driving (Ascone, Lindsey & Varghese, 2009; Curry, Hafetz,

Kallan, Winston & Durbin, 2011). Studies also suggest that the presence of a younger passenger can easily affect young driver behavior, even in the absence of overt pressure and distraction. Evidence suggests that this leads young drivers (particularly teens age 16 to17) to engage in even riskier driving behavior than normal, while also contributing to distracted driving (Ouimet, Pradhan, Simons-Morton, Divekar, Mehranian & Fisher, 2013).

Texting and Driving

Distracted driving is most recently taking the form of cell phone use and texting for many young drivers. The risk of a crash among "amateur drivers" (defined as new drivers ages 16 and 17) increased significantly if they were dialing a cell phone, reaching for a cell phone, sending or receiving text messages, reaching for an object other than a cell phone, looking at a roadside object, or eating (Klauer, Guo, Simons-Morton, Ouimet, Lee & Dingus, 2013). Studies show more high school teens ages 16 to 18 are wearing seatbelts and fewer are drinking and driving, but according to a survey of 15,000 U.S. high school students, about a third of students are texting behind the wheel (Eaton et al., 2012). Upperclassmen (the most likely high school students to drive) are the worst offenders, with about 60% of seniors and about 40% of juniors saying they had texted at least once while driving during the previous month. While the numbers are likely similar for young adults, national data on texting and driving has focused primarily on teens. This is a significant issue, with young drivers having the highest rate of motor vehicle crashes, injuries, and deaths in the United States, and motor vehicle crashes being the leading cause of death for this age category (Eaton et al., 2012).

Nearly half of U.S. high school-aged teens say they have been in a car when the driver was texting (Madden & Lenhart, 2009). One study revealed that about 90% of college students had texted while driving. Many reported doing so with passengers, even children, riding in the car, despite being aware of the dangers (Harrison, 2011). In addition, a substantial number of participants in the study reported driving well above the speed limit and drifting into other traffic lanes while texting. Many even reported "sexting" and/or text message arguing while driving. Despite this information, however, young drivers and college students overwhelmingly agreed that texting while driving is extremely dangerous and should be illegal (Harrison, 2011).

To make matters worse, studies have shown that if a young driver (16 and older in high school) texts while driving, they are more likely to engage in other risky driving behaviors, including failing to buckle up and driving while intoxicated (Healy, 2013). New drivers ages 16 to 18 who text while driving have been found to be up to five times more likely than those who do not to drive after drinking (Eaton et al., 2012). Young drivers who texted every day while driving in the past month were found to be 40% more likely to consistently fail to buckle up (Eaton et al., 2012). This emphasizes the importance of preventing these types of behaviors among young adults to ensure that the progress made in the areas of drunk driving and seat belt usage is not diminished by other distracted driving behaviors like texting and cell phone usage.

Impact of Film and Popular Media on Young Adult Behavior

Overall, the effects of risk messaging in entertainment films are an under-researched area (Sjoberg & Engelberg, 2010). However, commercial films for entertainment have previously affected risk behaviors. For example, following the

release of the 1975 film *Jaws*, the swimming habits of ocean vacationers changed, and some reported having such intense and irrational fear that they refused to swim in bodies of water known to be completely devoid of sharks (Cantor, 2004). Films using frequent fear appeals have had lasting effects on behavior for certain audiences, especially when the film is viewed at a younger age (Cantor, 2004). One study found that even if the individual realizes the fear is irrational, this often does not stop the behavior change or lasting effects of the fear (Cantor, 2004). Regardless of whether the behavior change is rational or irrational, behavior changes linked to films have been shown to last for years, and even a lifetime (Cantor, 2004).

Commercial films in general have also shown to be of particular importance for adolescent, teen, and young adult audiences. Many studies have been conducted regarding effects of violence (Anderson, Berkowitz, Donnerstein, Huesmann, Johnson, Linz, Malamuth & Wartella, 2003) and smoking (Song, Ling, Neilands & Glantz, 2007) in entertainment films on young adults; they generally show that films do significantly affect the behaviors of this population (i.e., smoking and violence in films leads to desensitization and riskier behaviors among this age group). One study was found that examined a film's effects on nutrition behavior. This study found that young adults exposed to the film *Super Size Me* (2004) gained substantial nutritional knowledge which they applied to their food behaviors (Cottone & Byrd-Bredbenner, 2007). A study using film and live performance interventions to bolster drug resistance found that film was an effective means of changing drug behavior when monitored up to one month after the intervention (Hecht, Corman & Miller-Rassulo, 1993). One study also found that sexual activity as displayed on popular television shows and in the media related to a faster

initiation into the sexual culture and community for young adults (Collins, Elliot, Berry, Kanouse, Kunkel, Hunter & Miu, 2004). Films relating to drug abuse in particular have been found to influence drug prevention behavior more so than to change behavior of current drug users (Dutta-Bergman, 2004). This could have implications in preventing negative driving behaviors through film and popular media tactics, while also meaning that films depicting negative driving behaviors have the potential to be particularly harmful.

Video games have also been examined to determine their effects on driving behavior and perceived risk. One study investigated whether playing racing games affected cognitions and behaviors that can promote risk taking in actual traffic situations (Fischer, Kubitzki, Guter & Frey, 2007). This study found that participants who played a racing game reported greater risk taking cognitions than participants who played a neutral game. Finally, on a more behavioral level, the authors found that men who played a racing game subsequently took more risks in computer-simulated critical road traffic situations than men who played a neutral game (Fischer, Kubitzki, Guter & Frey, 2007). This research supports the use of found footage tactics in PSAs, since simulating that young adults are in the vehicle as much as possible has the potential to have a serious impact.

Driving in PSAs

The majority of studies analyzing driving PSAs have focused on anti-drinking and driving campaigns as opposed to other risky driving behaviors. While PSAs themselves have not often produced significant and long-lasting change in the short term (Atchley, Hadlock & Lane, 2012), combinations of mass media campaigns, in combination with

enforcement tactics, have been shown to reduce alcohol-related crashes by 13% and crashes resulting in injury by 10%, saving hugely on medical costs (Tay, 2005; Elder, Shults, Sleet, Nichols, Thompson & Rajab, 2004). Specifically in the field of drinking and driving, a content analysis examined 66 randomly selected anti-drinking and driving PSAs and found that most PSAs focused on informational/testimonial appeals, followed by positive appeals, empathy, fear, and modeling appeals, in that order (Slater, 1999).

In addition to PSAs being found to reduce drinking and driving behaviors over a long period of time as opposed to in the short term (Atchley, Hadlock & Lane, 2012), PSAs have also impacted other behaviors. In a study examining young drivers' responses to various types of driver behavior messages, researchers found that participants were more likely to report intention to reduce speeding behaviors compared to reducing drunk driving behavior (Glendon & Cernecca, 2003). This may be due to the success of previous drinking and driving health education campaigns, which have focused on informational and testimonial appeals over a long period of time in order to change social norms and make an impact (Atchley, Hadlock & Lane, 2012; Tay, 2005; Elder, Shults, Sleet, Nichols, Thompson & Rajab, 2004). Enforcement-themed messages were most likely to produce reductions in reported speeding behavior, as well as seat belt usage (Glendon & Cernecca, 2003).

One study reviewed 11 campaigns designed to dissuade individuals from texting and driving. Based on their review of prominent anti-texting and driving campaigns, constructs of the EPPM were targeted in each campaigns (Cismaru, 2014). All 11 campaigns addressed perceived severity, with less dealing with vulnerability, self efficacy, and response efficacy. Based on this review, it was recommended that further

campaigns make drivers more aware of the legal consequences of texting while driving in addition to depicting victims (Cismaru, 2014). It was further suggested that campaigns address the fact that issues can occur with even the safest of drivers and the best or most experienced of texters. Easy to follow calls to action should be used for all campaigns using fear appeals to ensure that efficacy is addressed (Cismaru, 2014).

Though informational appeals are the most commonly used in drinking and driving PSAs (Slater 1999), fear, empathy, and modeling appeals are those most pertinent to films and are recommended for future campaigns related to texting and driving based on what has currently been done (Cismaru, 2014). These fear and modeling appeals could be extremely useful in future PSAs related to young driving behaviors (particularly college students), specifically given that most youths are already aware of the dangers of risky driving behaviors and continue to engage in them despite their knowledge (Harrison, 2011). Popular films typically show young adults with few negative repercussions for their actions (Stern, 2005), contributing to this issue and making it essential that future anti-texting and driving PSAs focus on the negative consequences of texting and driving using fear appeals, while also targeting social norms to encourage a change in norms similar to that accomplished by long-term drinking and driving PSAs and campaigns.

Health Communication Theory and Film: Theoretical Models

Observational Learning and Social Norms: Modeling Appeals

Social Cognitive Theory (SCT) is a health behavior model that emphasizes observational learning based on the fact that behavior is affected by a combination of psychological determinants, environmental determinants, self-regulatory behaviors, and

moral disengagement factors (Bandura, 1977). SCT, and specifically the constructs of observational learning and modeling appeals, suggests that teen viewers may be especially likely to learn from teen models who they perceive as similar, desirable, and attractive (Stern, 2005). Social norms are closely tied to modeling appeals and also play a key component in driving and health behavior theory. Campaigns to deter distracted driving must understand social norms for prominent distracted driving behaviors like texting while driving (Stern, 2005).

One study asked college-aged drivers to read car crash scenarios and rate the responsibility of the driver for the crash, as well as to levy fines and assign jail time based on whether the driver was attentive, had been drinking, or was distracted by talking on the phone or texting (Atchley, Hadlock & Lane, 2012). The first group was unaware of injunctive norms (laws against drunk and distracted driving), while the second group was informed of these norms beforehand. Impaired drivers were viewed as more responsible in both groups, with texting drivers viewed as the most responsible. However, drunk drivers received the most fines and jail time. When compared to data from the 1970s, the results show that anti-drinking and driving campaigns have changed how younger drivers view drunk driving, but that norms have not yet changed for distracted driving, despite consistent results showing they know the risks of driving distracted. Involving norms in messaging campaigns, including sanctions and penalties for distracted driving, is important to continue the process of behavior change (Atchley, Hadlock & Lane, 2012).

The Extended Parallel Process Model (EPPM): Fear Appeals

The EPPM is a communication model examining the effects of perceived threat (through the constructs of perceived susceptibility and perceived severity) and efficacy

(through the constructs of both response efficacy and self efficacy) on behavior change (Witte, 1992, see Appendix A). According to the EPPM, three possible outcomes exist depending on levels of perceived threat and efficacy. When perceived threat is low, no response occurs since a person is not motivated to pay attention to the message at hand and does not feel the issue is severe or that they are susceptible. When perceived threat is high and perceived efficacy is low, a fear control response occurs causing the audience to remain in a state of fear and deny the threat since they see no way they can control it. When both perceived threat and efficacy are high, a danger control response occurs, which is the ideal response. Here, a person is able to focus on potential solutions to the problem, leading to positive attitude change, and ultimately potential behavior change (Witte, 1992; Goodall & Roberto, 2008).

EPPM has been applied to analyzing the potential impact of film, such as *An Inconvenient Truth* (Goodall & Roberto, 2008). One study found that EPPM was effective when used in film for HIV/AIDs prevention (Lapinski & Nwulu, 2008). Fear appeals are key when applying EPPM and are often linked to emotional appeals in the literature (Sternthal & Craig, 1974), with fear appeals often existing as a type of persuasive emotional appeal. This provides evidence of the potential effectiveness of this theory for campaigns preventing negative driving behaviors.

One study examined message realism as a product of the constructs of the EPPM (Boenker, 2011). They found significant interactions between perceived threat and sensation seeking tendencies, as well as the need for cognition on message realism. There was also an interaction between perceived threat and need for cognition related to message accuracy. This suggests that sensation seeking tendencies and need for

cognition do interact with perceived threat on perceptions of message effectiveness, suggesting realism is key to the use of fear appeals (Boenker, 2011). Another study investigated whether response efficacy mediated outcome measures of message effectiveness for both acceptance and rejection of negative and positive emotion-based messages. Overall, the study's findings confirmed the importance of emotional and cognitive components of persuasive health messages and identified response efficacy as a key cognitive construct influencing the effectiveness of not only fear-based messages, but also positive emotion-based messages (Lewis, Watson & White, 2010). Evoked fear and perceived threat and efficacy independently influence message involvement. Message involvement was shown as a mediator between evoked fear, perceived threat, efficacy, attitudes, behavioral intent, and message acceptance (Cauberghe, Pelsmacker, Janssens & Dens, 2009). This all suggests that message realism, as well as emotional attachment and involvement in the message is very important when using the EPPM, supporting the use of found footage in conjunction with fear appeals in PSAs.

A series of two studies examined the effects of threat appeals on reckless driving from a terror management perspective (Lennon, Rentfro & O'Leary, 2010). In both studies, all the participants reported on the relevance of driving to their self-esteem, and, then, half of them were exposed to a road trauma film and the remaining to a neutral film. Findings indicated that a road trauma film led to lower reported intentions of reckless driving (Ben-Ari, Florian & Mikulincer, 2000). One study examined whether social marketing fear appeals in distracted driving PSAs changed beliefs or influenced behavioral intentions (Lennon, Rentfro & O'Leary, 2010). This study suggests that the most effective way to scare young adults into behavior change involves stressing legal

and financial repercussions of their actions, while also appealing to the viewer emotionally. It is important to stress this in future PSAs and use fear and emotional appeals when applying EPPM.

Studies show that young adults have unrealistic risk perceptions related to risky driving behavior (Ginsburg, Winston, Senserrick, Garcia-Espana, Kinsman, Quistberg, Ross & Elliot, 2008). Film and media tactics in PSAs have the potential to influence perceived susceptibility and severity, if not the other constructs of the model as perceived susceptibility/risk perception has especially been shown to affect young adult driving behaviors (Ginsburg, Winston, Senserrick, Garcia-Espana, Kinsman, Quistberg, Ross & Elliot, 2008). Perceived susceptibility has been proven to predict health behavior outcomes with about 80% accuracy, especially when dealing with preventive health behaviors (Janz & Becker, 1984), like avoiding risky driving behavior. Young adults have particularly reacted to perceived susceptibility and severity in substance abuse messaging (Arria, Caldeira, Vincent & Wish, 2008), suggesting other preventive behaviors like risky driving could yield similar results for these constructs.

Found Footage Tactics

While horror films do not have an exclusive claim on the found footage market (*Earth to Echo*, for example, recently released in 2014) with examples across comedy and science fiction, *The Blair Witch Project* (1999) is credited with starting the found footage era of horror films made on a very low budget (Telotte, 2001). With little financial input, this approach to filmmaking is credited for adding the feeling of dread that the audience feels throughout many recent horror films, including *Cloverfield* (2008). "*Cloverfield*, the new thriller from mastermind J.J. Abrams (Lost) uses its style to focus

clearly on its characters and the terrifying reality of being trapped in a horrible situation, producing a superior thriller that, despite running about ten minutes too long, is genuinely entertaining" (Starnes, 2008, pg. 1). Roger Ebert describes *Cloverfield* as "an effective film, deploying its special effects well and never breaking the illusion that it is all happening as we see it." Ebert commends the found footage approach to filmmaking in his review (Ebert, 2008, pg. 1). More recently, horror films falling into this category include the *Paranormal Activity* (2007 – 2014) films, which cost very little to make and gross very highly among horror films. The original *Paranormal Activity* (2007) only cost $450,000 to make and made almost $90,000,000, putting it at the top of the list for returned investments on a film (Nash Information Services).

Despite its popularity in feature films, found footage is not commonly used in PSA production, and no anti-texting and driving campaigns have used this tactic to add to fear appeals in PSA messaging and relate to young drivers who see these films on a different level. Horror film tactics have been used in the past to try to add fear to messages and relate to a movie-going young audience, particularly in relation to drug behaviors. The Meth Project was a campaign in which popular horror film directors developed a series of anti-meth PSAs, and this found positive results in terms of decreased crystal meth use in target areas for young adults (*The Meth Project*, 2014). The Meth Project has been implemented in Colorado, Georgia, Hawaii, Montano, Wyoming, and Idaho. In Idaho specifically, since the project's launch, 81% of those exposed to the campaign report the Idaho Meth Project PSAs made them less likely to try or use crystal meth (GfK Roper, 2011). Additionally, 65% of those who viewed the PSAs reported significant risks in taking crystal meth just once or twice (GfK Roper,

2011). Since 2007, the number of teens who knew the negative consequences of trying crystal meth has risen considerably on every item of risk measured (GfK Roper, 2011). However, despite this success, the promise of found footage in PSAs along with fear appeals to reach a young film-watching audience and try to prevent negative driving behaviors has been under researched; this study hopes to examine this tactic more closely.

Chapter 3: Methods

PSA Development

As formative research for the PSA developed for this study, a series of focus groups were conducted under the direction of Dr. Kenneth Beck to identify common beliefs about texting and driving, as well as appropriate subject matter to highlight in a PSA. A series of four focus groups were conducted, including a total of 25 college undergraduates. These students were asked to explain their perceptions and behaviors on what they considered risky driving, as well as how they might target and measure risky driving behaviors. Texting and driving was discussed in detail in all focus groups, and this information was very revealing.

We found that texting and driving is seen as universally dangerous: "Texting and driving is worse than talking on the phone because you are not looking at the road." However, it is still incredibly common: "[texting and driving] is more common than drinking and driving because people text and drive at all hours of the day, but people really only drink and drive at night." Participants mostly thought texting at red lights or when stopped was acceptable, but that texting while driving is so quick and easy that people do not realize how dangerous it could be.

Participants also felt they were in control and able to "calculate" the risk based on the situation: "It is a calculated risk, based on surroundings and the roads you are on and who is around you." This quote suggests that young adults feel in control enough at the wheel to text and drive safely. They also really felt that they could not ignore a text message: "If someone texts me, I can't not look at it." They did state that they would offer to send a text for the driver if need be, but it was unclear how often the driver

actually hands over the phone. The idea that there are "more experienced" drivers and texters that the passenger trusts to engage in this behavior on a regular basis was common; if the driver texts and drives all the time, participants reported that if the driver is good at it and that the risk of causing a crash decreases. This emphasizes the importance of a PSA in increasing perceived susceptibility. Participants also shared that they did not commonly see people pulled over for being on the phone and driving, but they were aware of police presence when using their phones: "If I am on the phone, I look around more for cops." Therefore, legal sanctions should be stressed.

When asked to design a campaign to reach young adults, participants suggested the more personal the better, using family and friends to make drivers see how much power they have over the lives of others when behind the wheel. Scare tactics and realistic experiences were discussed as being effective methods to reach audiences, suggesting that fear appeals should be used more throughout PSAs. However, the appeal must be as personal and realistic as possible. This supports the use of found footage tactics in PSAs.

Based on the literature and this background research, two 60-second anti-texting and driving PSAs were filmed, one using found footage tactics, and the other shot from an external perspective. The PSAs had identical scripts and used fear appeals and modeling appeals/observational learning, as well as the conceptual framework of the EPPM (see Appendix A). The PSA script (see Appendix B) specifically targeted the additional theoretical construct of social norms, in addition to perceived susceptibility and perceived severity (perceived threat), while the call to action targets self and response efficacy (efficacy). The three recent college graduates cast for the PSA are a close group

of friends that spoke naturally and normally with each other to promote the realism of the situation; the script simply included key points that were addressed throughout the conversation based on research. This included references to the "experienced texter" concept specifically to target this issue based on the research and literature. In addition, the found footage PSA was shot on an iPhone all in one take through the eyes of a real college student, while the external perspective PSA was shot from a dashboard camera. The found footage video was conceptualized as the type of common teen video that is prominent on YouTube and other social media websites with the "documented" generation of young adults today. This, again, was done to promote the relatability and realism of the message, therefore increasing potential message effectiveness. Found footage tactics were used to increase dread and relate to this large movie-going audience on a more realistic, involving, and personal level.

Study Design

The study was conducted using a randomized control pre-posttest design. After the PSAs were developed and analyzed by a group of subject matter experts, a manipulation check was administered with a group of six undergraduate students. These students were recruited by word of mouth via a large introductory course and asked to view both versions of the PSA. They were consented (see Appendix C), and asked to complete a short quantitative and qualitative paper survey after viewing each PSA (see Appendix D). Participants were given food and beverages for their time, and no personal information was collected. This data was analyzed to ensure that the two PSAs were clearly shot from distinctive points of view. The manipulation check was considered successful if all participants could tell that the two PSAs only differ by point of view.

Additional qualitative data was gathered at this stage to determine if the PSAs could be improved at all before being distributed for the larger survey.

Once the manipulation check was successful, small edits were made to the PSAs, and the PSAs were then distributed via undergraduate listservs along with the pretest and posttest electronic survey. The survey was administered to 500 students (250 in each PSA group). In order for a response to be analyzed as part of the final data set, the participant had to have watched the PSA to which they were randomly assigned and answered the validation item correctly in the survey to confirm this. Based on this criteria, a total of 428 complete survey responses were collected and analyzed. Of these responses, 193 were randomized to the External PSA group, while 235 were randomized to the POV PSA group. This suggests that more participants randomized to the External PSA group decided not to view the PSA and therefore did not complete the PSA validation item in the survey. Based on a conservative expected effect size of about 20% (Santa & Cochran, 2008), each group should have had 199 participants to be sufficiently powered (power=0.80), so this sample provided sufficient power to detect any statistical differences. Actual power turned out to be 0.79 for the External PSA group and 0.86 for the POV PSA group.

All participants were consented (see Appendix C) and informed of their 1 in 50 chance to win a $25 Amazon gift card. The pretest and posttest surveys were automatically linked, and the only personal information taken was names and email addresses to ensure that no one participant could take the survey multiple times, and that participants could be contacted to redeem their incentive. Participants were asked to complete a pretest, view one of the two 60-second PSAs at random, immediately

complete a posttest, and then were invited to provide additional written feedback in an open-ended question. The surveys lasted no more than 20 minutes, with the raffle occurring at the end of the semester to determine who won a gift card.

Instrument Development and Implementation

Participants were first asked to complete an initial pretest (see Appendix E) to gather driver behavior information, demographic information, and initial attitudes, beliefs (including perceived susceptibility and severity), efficacy, and social norm data related to texting and driving. In order to measure these constructs, a questionnaire instrument was developed. The demographics portion of the questionnaire was designed to gather information including gender, age, race/ethnicity, and college major. Then, a series of questions were designed to target driver behavior, attitudes, perceived severity, perceived susceptibility, efficacy, and social norms related to texting and driving. Observational learning was targeted via questions relating to their friends' driving behaviors. A standardized fear arousal scale was also included (Ruiter, Kok, Verplanken, & Brug, 2001). All items used the EPPM and other theoretical constructs to ground the study in theory.

Immediately following the pretest, the PSA was screened via a YouTube link, and the posttest was administered (see Appendix F). To ensure participants watched the PSA before proceeding to the posttest, a validation code was requested. This code was unique to either the external perspective PSA or the first person perspective PSA, and participants could not continue to the next item in the survey if they didn't enter one of those two correct codes based on which PSA they viewed. Once this was validated, participants proceeded to the posttest, which was used to gather driver behavioral intent

after viewing the PSA, as well as parallel attitudes, beliefs (including perceived susceptibility and severity), and efficacy items relating to how the PSA affected these constructs. The fear arousal scale was measured again after viewing the PSA so differences in the fear evoked from each message could be analyzed. The posttest also contained questions targeting message involvement, fear appeals, and emotional connection to explore differences between the found footage style PSA and the PSA shot from an external perspective.

Measures and Reliability

The main constructs measured by the pretest and posttest were perceived susceptibility, perceived severity, self efficacy, response efficacy, behavioral intent, and fear arousal. Pretest measures of general driver behavior, including experience and risky driving behavior, and social norms were taken as descriptive measures. Found footage response was measured at posttest only to be compared between treatment groups. Cronbach's alpha was calculated for variables measured with these instruments to ensure internal consistency and reliability, as shown in Table 1. Specifically, alpha was calculated for the following constructs: social norms (specifically related to texting and driving), risk perception, perceived susceptibility and perceived severity (defined by perceived threat), self efficacy and response efficacy (defined by efficacy), found footage response, and fear arousal.

Risk perception (Rosenstock, 1974) was measured on both the pretest and the posttest by six parallel items developed for this study to gauge how risky participants felt certain driving behaviors were that were unrelated to texting and driving (see Appendix E: items 23 – 28; Appendix F: items 8 – 13). Items were measured on a 5-point scale

from very unlikely (=1) to almost certain (=5). The scale had a Cronbach's alpha of 0.793 across 6 items (see Table 1).

Perceived susceptibility was measured on both the pretest and the posttest by four parallel items developed for this study based on the EPPM (Witte, 1992) to gauge how likely participants felt they were to get in a crash while texting and driving, and ideas of general risk for texting and driving behaviors (see Appendix E: items 29, 31, 38, and 39; Appendix F: items 14, 16, 18 and 19). Items 29 and 31 on the pretest and items 14 and 16 on the posttest were measured on a 5-point scale from very unlikely (=1) to almost certain (=5), while items 38 and 39 on the pretest and items 18 and 19 on the posttest were measured on a 10-point scale from strongly disagree (=1) to strongly agree (=10). Item 39 was reverse coded, as lower scores actually indicated high risk perception for texting and driving in this item. Ten-point scale items were collapsed into 5-point scale items to correspond with the very unlikely (=1) to almost certain (=5) scale in order to produce a comparable mean for all items.

Perceived severity was measured on both the pretest and the posttest by four parallel items developed for this study based on the EPPM (Witte, 1992) to gauge how severe participants felt a crash caused by texting and driving to be, and how severe the behavior is in general (see Appendix E: items 30, 32, 38, and 40; Appendix F: items 15, 17, 18, and 20). Items 30 and 32 on the pretest and items 15 and 17 on the posttest were measured on a 5-point scale from very unlikely (=1) to almost certain (=5), while items 38 and 40 on the pretest and items 18 and 20 on the posttest were measured on a 10-point scale from strongly disagree (=1) to strongly agree (=10). Ten-point scale items were collapsed into 5-point scale items to correspond with the very unlikely (=1) to almost

certain (=5) scale in order to produce a comparable mean for all items. Item 38 was treated as a measure of both perceived susceptibility and severity, as a measure of the non-specific risk of texting and driving compared to drinking and driving. When calculating Cronbach's alpha for perceived susceptibility and severity, the most reliable results were achieved by collapsing these two constructs into one scale measuring *perceived threat.* This gave a Cronbach's alpha of 0.758 across 7 items (see Table 1).

Self efficacy (Witte, 1992) was measured on both the pretest and the posttest by two parallel items to gauge how confident participants felt about avoiding texting and driving (see Appendix E: items 41 and 42; Appendix F: items 21 and 22). Items were developed for this study based on the EPPM and measured on a 10-point scale from strongly disagree (=1) to strongly agree (=10).

Response efficacy (Witte, 1992) was measured on both the pretest and the posttest by one parallel item developed for this study based on the EPPM to gauge how confident participants were that avoiding texting and driving would help them avoid a crash (see Appendix E: item 43; Appendix F: item 23). When calculating Cronbach's alpha for self efficacy, the most reliable results were achieved by combining this construct with response efficacy to create one scale measuring *efficacy*, which is consistent with the literature (Witte, 1992). This gave a Cronbach's alpha of 0.681 across 3 items (see Table 1).

Fear arousal (Ruiter, Kok, Verplanken, & Brug, 2001) was measured on both the pretest and the posttest using 10 items (part of a single question) to gauge participant's overall level of fear and anxiety (see Appendix E: item 44; Appendix F: item 24). Items were measured on a 5-point scale from not at all (=1) to very (=5), and "relaxed", "calm",

and "restful" were reverse coded, as a lower value for these items represented higher fear arousal. This scale was reliable, with a Cronbach's alpha of 0.914 across 10 items (see Table 1). This was the only scale that was taken directly from a previous study and previously validated.

Social norms (Fishbein, 1967) were measured on the pretest only as descriptive data using four items to gauge whether participant's felt their friends engaged in the behavior or felt negatively about the behavior (see Appendix E: items 33 – 36). Items were developed based on the Theory of Planned Behavior (Fishbein, 1967) and measured on a 10-point scale from strongly disagree (=1) to strongly agree (=10). Items 33 and 35 were reverse coded, as lower values indicated higher levels or normal negative behavior, including general driving behavior and comfort level when trying to intervene to stop negative driving behavior. Since these norms items did not directly relate to texting and driving, they were dropped to produce the most reliable social norms scale possible, including only items 34 and 36, which directly related to texting and driving behavior. This produced the social norms – texting variable, with a Cronbach's alpha of 0.685 across two items (see Table 1).

Found footage response was measured on the posttest only using six items to gauge connection to the message, realism, emotional and fear appeals, and modeling/observational appeals (see Appendix F: items 1 – 6). Items were developed for this study based on these theoretical elements from observational learning/modeling theory, fear and emotional appeals theory, and concepts of message involvement and realism (Bandura, 1977; Bryant & Zillman, 1994; McLeod, Kosicki & Pan, 1991; Sternthal & Craig, 1974; Telotte, 2001; Witte, 1992) and measured on a 10-point scale

from strongly disagree (=1) to strongly agree (=10). This scale was very reliable, with a Cronbach's alpha of 0.874 across 6 items (see Table 1).

Table 1: Reliability of Scale Measures

Variable	Responses	Cronbach's alpha	Number of Items
Social norms – texting	1: Strongly Disagree – 10: Strongly Agree	0.685	2
Found footage response	1: Strongly Disagree – 10: Strongly Agree	0.874	6
Risk perception	1: Very unlikely – 5: Almost certain	0.793	6
Perceived threat	1: Very unlikely – 5: Almost certain	0.758	7
Efficacy	1: Strongly Disagree – 10: Strongly Agree	0.681	3
Fear arousal	1: Not at all – 5: Very	0.914	10

Behavioral intent (Fishbein, 1967) was measured on the posttest, with behavior measured on the pretest to gauge current and intended future texting and driving behavior (see Appendix E: item 37; Appendix F: item 7). Behavior on the pretest was compared to behavioral intent on the posttest. Items were measured on a 10-point scale from strongly disagree (=1) to strongly agree (=10).

Risky driving behavior was measured as a descriptive variable on the pretest only to gauge current risky driving behaviors across a variety of factors (see Appendix E: items 9 – 22).

Items 9 – 20 were measured on a 5-point scale from very unlikely (=1) to almost certain (=5), while items 21 and 22 were measured on a 6-point scale from 0 (=1) to 5 or more (=6). These two items referred to the number of crashes and tickets the participants had, and were transformed into 5-point scale items to produce a comparable mean for all risky driver behavior items. This was done by combining the responses for 4 tickets/crashes and 5 or more tickets/crashes into one response category for 4 or more tickets/crashes

(=5). Driver experience data was collected with items 6 – 8 for future analyses and for descriptive purposes only. This data, as well as demographic item 5 (college major; see Appendix E), were not used in analyses.

Analysis Plan and Variables

Survey data was imported from Qualtrics into SPSS for quantitative analyses. Data was analyzed to examine significant changes in the behavioral intent, perceived threat, efficacy, and fear arousal, using the risk perception construct to establish convergent validity and assess potential bias (this measure should not change significantly, as the items measuring this variable are not directly addressed by the PSAs). This was done using paired t-tests to determine whether the study group differed across any pretest measure on the posttest. Eta^2 was calculated to measure the effect size of the PSA on the various constructs measured in this study. This effect size was compared between PSAs to determine differences in their effects. Additional items related to message involvement were compared between PSAs, as well as the fear arousal items (see below Table 2 for definitions of these variables and how they will be coded). A significance level of $P<0.05$ was set to minimize the likelihood of a Type I error.

Parallel items regarding perception of risk that are not directly addressed in the PSA were also placed in the pretest and posttest as an additional measure of internal consistency. Descriptive statistics were generated for demographic characteristics and data collected. Demographic data was used to determine that randomization was effective and if groups differ across any demographic characteristic. Driver behavior (specifically driver experience and risky driving behavior) and social norms were measured as descriptive data.

The following provides specific examples of each variable as measured through the survey instruments, and how the variables were analyzed to assess the hypotheses of this study (see Appendices E and F):

Table 2: Description of Variables and Analysis

Variable/Measurement	Items	Analysis Plan
Descriptive Variables		
Driver experience	Pretest ONLY: Items 6 – 8	Descriptive only; time with license, mileage, and frequency of driving; not explicitly analyzed
Risky driving	Pretest ONLY: Items 9 – 22	Descriptive only; 5-point and 6-point scale items averaged to determine overall risky driving score mean (6-point scale items collapsed to create equivalent 5-point items)
Social norms – texting	Pretest ONLY: Items 33 and 35	Descriptive only; 10-point scale averaged to determine overall norm score mean
Social norms – other	Pretest ONLY: Items 32 and 34	Descriptive only; reverse coded; not explicitly analyzed
Randomization Confirmation		
Demographics	Pretest ONLY: Items 1 – 5	Gender, age, and race/ethnicity items compared between PSA groups to ensure equal randomization; major collected as descriptive data only
Internal Consistency		
Risk perception	Pretest: Items 23 – 28 Posttest: 8 – 13	Parallel 5-point scale items averaged and used to assess convergent validity (each item repeated from pretest to posttest, should receive consistent scores, and be unaffected by the PSA)
Message Response (Posttest Measure)		
Found footage response (Modeling/observational learning; Fear appeals; Emotional appeals; Message Involvement)	Posttest ONLY: Items 1 – 6	Descriptive only; 10-point scale averaged to determine overall found footage response score mean and determine differences between PSA groups
Theoretical Constructs (Pretest and Posttest Measures)		
Behavior/Behavioral intent	Pretest: Item 37 Posttest: Items 7	Parallel 10-point scale item; conduct a paired t-test and calculate Eta^2

Perceived susceptibility	Pretest: Items 29, 31, 38 – 39 Posttest: Items 14, 16, 18 – 19	Parallel 5-point and 10-point scale items averaged to determine pretest and posttest score mean (10-point items transformed to the 5-point scale; reverse code item 38); conduct a paired t-test and calculate Eta^2
Perceived severity	Pretest: Items 30, 32, 38, 40 Posttest: Items 15, 17 – 18, 20	Parallel 5-point and 10-point scale items averaged to determine pretest and posttest score mean (10-point items transformed to the 5-point scale; reverse code item 38); conduct a paired t-test and calculate Eta^2
Self efficacy	Pretest: Items 41 – 42 Posttest: Items 21 – 22	Parallel 10-point scale averaged to determine pretest and posttest score mean; conduct a paired t-test and calculate Eta^2
Response efficacy	Pretest: Item 43 Posttest: Item 23	Parallel 10-point scale item to determine pretest and posttest score mean; conduct a paired t-test and calculate Eta^2
Fear arousal	Pretest: Item 44 Posttest: Item 24	Sum of 10 different 5-point scale items to create parallel scale item to determine pretest and posttest score mean; conduct a paired t-test and calculate Eta^2; reverse code items "relaxed", "calm", and "restful"

Determined effect sizes for each variable were compared between each PSA using an additional paired t-test and a general linear model (GLM) analysis to determine any statistical difference. Gender and race effects (specifically white and nonwhite) were examined to determine if any differences existed between groups, and a regression analysis was used to control for gender, race, pretest measures, risk perception measures (to examine any bias due to change in this variable), and treatment group to interpret true effect sizes and statistical significance of any posttest measures. Any additional qualitative data captured via open-ended questions was analyzed for content, with special attention paid to the constructs and variables measured in the survey, to analyze the exploratory found footage response. Pertinent and revealing quotes were pulled to add additional dimensions to the quantitative data gathered via the survey instruments.

Through this data analysis and research, this study sought to determine the effectiveness of an anti-texting and driving found footage style PSA on a young adult audience, based on the success of these filmmaking tactics in commercial films among this age group. Since commercial film and mass media have connections and potential to affect the norms, perceptions, and behaviors of young adults, the public health sector needs to consider these films. This can help public health professionals and future media campaigns to reach this important demographic for preventive health behaviors like texting and driving. This analysis of driver behaviors and how a commercial film-influenced found footage PSA can affect perceptions, norms, and efficacy related to texting and driving among young adults was designed to give insight into a largely unexplored area of health communication and PSA development and design.

Timeline

A timeline for the completion of this research can be found in Table 3.

Table 3: Timeline

	1/14	2/14	3/14	4/14	5/14	6/14	7/14	8/14	9/14	10/14	11/14
Brainstorming and Literature Review											
Organize Thesis Committee											
Develop draft Thesis											
Develop draft PSA script											
Revise draft Thesis											
Cast and secure PSA talent											
Defend Thesis proposal											

Complete IRB application and submission; revise application as necessary for approval											
Storyboard, film, and produce PSA											
Screen PSA for manipulation check and make any necessary edits											
Distribute PSA survey											
Analyze data and report results											
Distribute survey incentives											
Final Thesis defense											

Chapter 4: Results

Manipulation Check

The manipulation check was performed on September 30, 2014 immediately following Dr. Kenneth Beck's HLTH106 class, Drug Use and Abuse. Six undergraduate students participated in the manipulation check, all of which were female. The external perspective PSA was screened first, followed by a series of survey questions. Next, the found footage style PSA (referred to throughout the results as the first person point of view or POV PSA) was screened, and the remainder of the survey questions were administered. All six students clearly identified the distinct point of view for each PSA, so the manipulation check was considered successful. Some additional preliminary data was collected to determine general found footage response and examine potential improvements to be made to the PSAs before the larger survey was launched (see Appendix G for Manipulation Check Results). All participants felt that the POV PSA was more realistic, and almost all participants thought the POV PSA was more effective. However, most participants felt that the crash should be shown to make the PSA more graphic, more emotional, and scarier. Due to production limitations, the crash itself with these specific actors could not be filmed and shown effectively. However, based on this feedback, the PSAs were edited to include additional images at the end to capture the severity of the crash and the emotional impacts.

Final Sample and Randomization

Data was collected from October 1 – October 26, 2014. The survey was closed once 500 responses were received. Data was downloaded from Qualtrics and imported into SPSS for analysis. As previously stated, participants who did not complete the

validation check were excluded from the final analyses, as they did not prove that they watched the PSA. Of the 500 who completed the survey, 72 participants did not complete the validation check (14.4%), and therefore, the final sample size was 428. As shown in Table 4, randomization was considered effective, as no significant differences were identified between the two treatment groups based on gender, race, and ethnicity. A chi-square analysis was used to confirm effective randomization. Age data was not successfully captured via the Qualtrics survey system due to a technical error. The majority participants were white females. However, this was consistent between treatment groups.

Table 4: Demographic Characteristics and Randomization Check

Characteristic		External PSA (Percent) N=193	POV PSA (Percent) N=235	All (Percent) N=428	Chi-square analysis (p value)
Gender	Male	35.2	32.3	33.6	0.536
	Female	63.2	66.8	65.2	
Race	White	67.9	60.0	63.6	0.106
	African American	7.8	9.8	8.9	0.499
	Asian	21.8	27.2	24.8	0.216
	Native American	0.5	2.6	1.6	0.135
	Other	6.7	5.5	6.1	0.686
Hispanic	Yes	13.5	9.8	11.4	0.286
	No	86.0	89.4	87.9	

Note: Small amounts of missing data account for the remainder of the percentages for each variable.

Descriptive Variables

As seen in Table 5, no differences were found between treatment groups for risky driving behavior or social norms – texting variables. This was confirmed with an independent t-test (see Table 5 for test statistics and results). Participants generally reported engaging in risky driving behavior such as driving over the speed limit, talking on a cell phone while driving, etc. once or twice, indicating that this sample self-

identified as very safe drivers. However, as shown by the social norms – texting variable, participants also generally agreed that their friends did in fact text and drive and did think texting and driving was safe. This data shows that texting and driving is not something commonly seen as very unsafe within social circles, though the individual may find it unsafe.

Table 5: Descriptive Variables for Different PSA Groups

Variable	Responses	External PSA: N=193 (mean ± standard deviation)	POV PSA: N=235 (mean ± standard deviation)	All: N=428 (mean ± standard deviation)	Independent T-Test
Risky driving behavior	1: Never – 5: Daily	1.53 ± 0.422 N*=192	1.56 ± 0.404 N*=235	1.55 ± 0.412 N*=427	t=-0.627 p=0.531
Social norms – Texting	1: Strongly Disagree – 10: Strongly Agree	3.87 ± 1.736 N*=192	4.09 ± 1.921 N*=235	3.99 ± 1.842 N*=427	t=-1.229 p=0.220

*N for each variable excluding any missing data across the scale measure.

Differences between PSA Treatment Groups

As seen in Table 6, there were no significant differences between PSA groups across any variable measured, as predicted by the first hypothesis. An independent t-test was conducted as well as a GLM analysis controlling for pretest scores on each measure as a covariate. Table 6 shows the p values from the t-test and GLM analysis, as well as the effect size. These findings suggest that the difference in point of view between the two PSAs had no effect on how successful the PSA was with this audience across the variables measured. Further, the found footage response (measured only on the posttest for each PSA) was generally neutral, with no differences found between the PSA groups. These findings suggest that the found footage style or POV PSA did not produce higher levels of message involvement or realism as predicted by the second hypothesis.

Table 6: Differences for Major Change in Variables between PSA Groups

Variable	External PSA: N=193 (mean ± standard deviation)	POV PSA: N=235 (mean ± standard deviation)	Independent T-Test	GLM analysis (p value)	Eta^2
Found footage response	5.30 ± 1.795 N*=186	5.34 ± 2.003 N*=228	t=-0.217 p=0.828	0.828	<0.001
Δ Risk perception	0.16 ± 0.436 N*=185	0.10 ± 0.380 N*=228	t=-1.247 p=0.214	0.485	0.001
Δ Behavioral intent	1.13 ± 1.887 N*=183	1.25 ± 2.119 N*=226	t=0.623 p=0.534	0.729	<0.001
Δ Perceived threat	0.08 ± 0.377 N*=185	0.09 ± 0.337 N*=228	t=0.331 p=0.741	0.711	<0.001
Δ Efficacy	0.10 ± 1.016 N*=185	0.16 ± 1.006 N*=228	t=0.498 p=0.619	0.622	0.001
Δ Fear arousal	0.12 ± 0.459 N*=184	0.06 ± 0.407 N*=228	t=-1.203 p=0.230	0.442	0.001

*N for each variable excluding any missing data across the scale measure.

As follow-up analyses, gender and race (specifically white and nonwhite) were analyzed as covariates to determine if there were any differences in the way these groups reacted to the different PSA treatment groups, specifically because the majority of the actors in the PSAs were white males. The results of an additional GLM analysis with gender and race (white/nonwhite) as additional covariates are shown in Table 7. The starred values show that there were significant differences in how the different gender or race groups reacted to the different PSAs. Variables that were found to have statistically significant differences by gender and race across PSA groups were analyzed further in Table 8 to determine whether any variable emerged significant for one gender or race group, but not the other. In Table 8, data was separated by gender and race (white/nonwhite), and GLM analysis was rerun with PSA treatment group as the fixed factor and pretest scores as the covariate to determine significant differences between PSA groups when data was separated by gender or race. As shown in Table 8, these

differences in gender and race did not cause any differences between PSAs to emerge as significant. While one gender or race may have been slightly more affected by one PSA versus another, there was still no statistical difference between PSA groups.

Table 7: GLM Analysis with Gender and Race as a Covariate for Different PSA Groups

Variable	Differences in Gender (p value)	Differences in White/Nonwhite (p value)
Found footage response	0.003*	<0.001*
Δ Risk perception	0.186	<0.001*
Δ Behavioral intent	0.288	0.359
Δ Perceived threat	0.001*	0.074
Δ Efficacy	0.026*	0.040*
Δ Fear arousal	0.275	0.440

*Statistically significant differences between gender or race.

Table 8: GLM Analysis for Difference in Significance between PSA Groups with Gender and Race Groups Analyzed Separately

Characteristic		Found footage response		Δ Risk perception		Δ Perceived threat		Δ Efficacy	
		p	*Eta²*	*p*	*Eta²*	*p*	*Eta²*	*p*	*Eta²*
Gender	*Male*	0.855	<0.001	0.796	<0.001	0.175	0.014	0.866	<0.001
	Female	0.876	<0.001	0.514	0.002	0.592	0.001	0.575	0.001
Race	*White*	0.984	<0.001	0.765	<0.001	0.663	0.001	0.059	0.014
	Nonwhite	0.815	<0.001	0.450	0.004	0.930	<0.001	0.096	0.019

Differences between Pretest and Posttest Items for Both PSA Groups

Since there were no statically significant findings between PSA groups as hypothesized, I performed additional analyses to determine if either PSA had any effect on the variables measured. Table 9 shows the differences between all pretest and posttest measures for all participants regardless of PSA group assignment, while Table 10 shows these results across the two different PSA groups. As shown in Table 9, all variables were found to be significantly affected by a PSA in general using a paired t-test. Behavioral intent was the most significantly altered with an effect size of 0.402, while efficacy was the least significantly altered with an effect size of 0.078. Though the

changes in means appear small, the large sample size gave us the statistical power to determine that these changes were in fact statistically significant.

Table 9: Difference Pre and Posttest for Entire Sample

Variable	All: N=428 (mean ± standard deviation)				
	*N**	*Pre*	*Post*	*T-Test*	*Eta²*
Risk perception	413	3.33 ± 0.654	3.47 ± 0.683	t=-6.895 p<0.001	0.214
Behavioral intent	409	6.78 ± 3.011	7.99 ± 2.178	t=-11.569 p<0.001	0.402
Perceived threat	413	3.55 ± 0.643	3.64 ± 0.631	t=-5.024 p<0.001	0.140
Efficacy	413	7.82 ± 1.674	7.95 ± 1.654	t=-2.483 p=0.013	0.078
Fear arousal	412	2.05 ± 0.815	2.15 ± 0.879	t=-4.395 p<0.001	0.123

*N for each variable excluding any missing data across the scale measure.

Table 10 shows differences between pretest and posttest measures when PSA groups were analyzed separately using a paired t-test. For the External PSA, all variables were significantly altered from pretest to posttest except efficacy. Of the variables with significant differences for this PSA, behavioral intent was the most altered with an effect size of 0.383, while perceived threat was the least altered (excluding efficacy) with an effect size of 0.131. For the found footage of POV PSA, all variables were significantly altered, including efficacy. Behavioral intent was again the most significantly altered with an effect size of 0.413, while efficacy was the least altered with an effect size of 0.084. Between PSAs, risk perception and fear arousal had higher effect sizes for the External PSA, while behavioral intent, perceived threat, and efficacy had higher effect sizes for the POV PSA. However, as discussed earlier, none of the differences between PSAs were found to be statistically significant.

Table 10: Pre and Posttest Scores by PSA Group

Variable	External PSA: N=193 (mean ± standard deviation)					POV PSA: N=235 (mean ± standard deviation)				
	*N**	*Pre*	*Post*	*T-Test*	*Eta²*	*N**	*Pre*	*Post*	*T-Test*	*Eta²*
Risk perception	185	3.33 ± 0.654	3.48 ± 0.647	t=-4.922 p<0.001	0.230	228	3.33 ± 0.656	3.46 ± 0.713	t=-4.826 p<0.001	0.198
Behavioral intent	183	7.02 ± 2.925	8.14 ± 2.075	t=-8.060 p<0.001	0.383	226	6.60 ± 3.073	7.87 ± 2.255	t=-8.413 p<0.001	0.413
Perceived threat	185	3.56 ± 0.611	3.64 ± 0.596	t=-2.898 p=0.004	0.131	228	3.54 ± 0.669	3.64 ± 0.660	t=-4.185 p<0.001	0.150
Efficacy	185	7.78 ± 1.686	7.88 ± 1.668	t=-1.399 p=0.164	0.060	228	7.86 ± 1.666	8.00 ± 1.645	t=-2.090 p=0.038	0.084
Fear arousal	184	2.04 ± 0.813	2.16 ± 0.909	t=-3.419 p=0.001	0.148	228	2.05 ± 0.819	2.14 ± 0.857	t=-2.812 p=0.005	0.110

*N for each variable excluding any missing data across the scale measure.

As an additional analysis, these same paired t-test analyses were conducted separately by gender (Table 11) and race (white/nonwhite, Table 12) as well. By gender, males did not report significant changes from pretest to posttest across efficacy or perceived threat, suggesting the female respondents were more strongly affected by threat and are responsible for its statistical significance in the total data. Females reported significant changes in all variables. For race, white participants did not report a statistically significant difference in efficacy, while nonwhites reported statistically significant differences across all variables. Table 12 suggests that despite the lack of diversity in the PSAs, nonwhite participants were actually more strongly affected by a PSA in general than white participants.

Table 11: Pre and Posttest Scores by Gender for Entire Sample

Variable	Male: N=144 (mean ± standard deviation)					Female: N=279 (mean ± standard deviation)				
	*N**	*Pre*	*Post*	*T-Test*	*Eta²*	*N**	*Pre*	*Post*	*T-Test*	*Eta²*
Risk perception	139	3.13 ± 0.640	3.27 ± 0.657	t=-3.814 p<0.001	0.219	270	3.43 ± 0.636	3.57 ± 0.671	t=-5.568 p<0.001	0.220
Behavioral Intent	137	6.92 ± 3.178	7.89 ± 2.240	t=-6.243 p<0.001	0.305	268	6.67 ± 2.928	7.99 ± 2.196	t=-9.720 p<0.001	0.451
Perceived threat	139	3.40 ± 0.639	3.43 ± 0.627	t=-1.269 p=0.207	0.047	270	3.63 ± 0.629	3.75 ± 0.611	t=-5.239 p<0.001	0.191
Efficacy	139	7.70 ± 1.783	7.73 ± 1.633	t=0.056 p=0.955	0.017	270	7.86 ± 1.619	8.05 ± 1.654	t=-3.157 p=0.002	0.117
Fear arousal	139	1.95 ± 0.791	1.99 ± 0.817	t=-2.229 p=0.027	0.051	269	2.10 ± 0.823	2.21 ± 0.893	t=-3.775 p<0.001	0.134

*N for each variable excluding any missing data across the scale measure.

Table 12: Pre and Posttest Scores by Race for Entire Sample

Variable	White: N=272 (mean ± standard deviation)					Nonwhite: N=156 (mean ± standard deviation)				
	*N**	*Pre*	*Post*	*T-Test*	*Eta²*	*N**	*Pre*	*Post*	*T-Test*	*Eta²*
Risk perception	262	3.25 ± 0.608	3.34 ± 0.662	t=-4.435 p<0.001	0.148	151	3.47 ± 0.707	3.71 ± 0.656	t=-5.394 p<0.001	0.340
Behavioral Intent	260	6.75 ± 2.996	7.92 ± 2.211	t=-9.479 p<0.001	0.391	149	6.85 ± 3.046	8.11 ± 2.120	t=-6.714 p<0.001	0.414
Perceived threat	262	3.46 ± 0.617	3.54 ± 0.611	t=-4.012 p<0.001	0.130	151	3.71 ± 0.657	3.81 ± 0.632	t=-3.051 p=0.003	0.152
Efficacy	262	7.75 ± 1.635	7.81 ± 1.679	t=-1.102 p=0.271	0.037	151	7.96 ± 1.736	8.18 ± 1.588	t=-2.516 p=0.013	0.127
Fear arousal	262	2.03 ± 0.817	2.12 ± 0.875	t=-3.243 p=0.001	0.110	150	2.08 ± 0.814	2.20 ± 0.887	t=-2.965 p=0.004	0.147

*N for each variable excluding any missing data across the scale measure.

Risk perception was also strongly affected across all samples, as shown in Tables 9 – 12, even though this variable measured unrelated risk perception items and should not have been affected by these PSAs. This suggests some response bias in the data, as effect size for risk perception was 0.214 for the entire sample (see Table 9). To examine

significance more closely and help control for this bias, a regression analysis was conducted, using for gender, race (white/nonwhite), PSA treatment group, pretest scores, and risk perception scores, both pretest and posttest, as factors. Based on this analysis, posttest risk perception scores significantly affected all variables except for fear arousal. Fear arousal was generally unaffected by this variable, and therefore may have not been biased by the pretest. All other variables were affected, but perceived threat was the most related to risk perception scores. This table suggests that based on the large effect size of behavioral intent, and the fact that risk perception makes up a smaller portion of the variance for this variable, behavioral intent and fear arousal were likely both significantly affected by the PSAs. This table helps give us a general sense of how strong of a predictor risk perception was in terms of our posttest measures, which in turn, helps us examine the inherent response bias in this sample.

In Table 14, this same regression analysis was run again for behavioral intent specifically as our most strongly affected variable. In this analysis, gender, race, PSA group, behavioral intent pretest, and all other variables posttest measures were used as factors to determine what constructs are emerging as the strongest predictors of behavioral intent. Based on this analysis, behavioral intent on the pretest is still a strong predictor of this variable, but efficacy and perceived threat on the posttest are also significantly predicting behavioral intent. Therefore, even though significant differences between pretest and posttest for efficacy and perceived threat may only be due to inherent response bias, these variables are strongly predicting behavioral intent, which was likely significantly affected by the PSAs.

Table 13: Regression Analysis Accounting for Gender, Race, Risk Perception, and Treatment Group

Variable	Factor	Beta	Significance
Behavioral Intent	Gender	0.001	0.968
	White/Nonwhite	-0.012	0.739
	PSA Group	-0.013	0.695
	Risk Perception – Pretest	-0.037	0.521
	Risk Perception – Posttest	0.207	0.001
	Behavioral Intent – Pretest	0.677	<0.001
Perceived Threat	Gender	0.075	0.002
	White/Nonwhite	0.002	0.941
	PSA Group	0.014	0.548
	Risk Perception – Pretest	-0.247	<0.001
	Risk Perception – Posttest	0.426	<0.001
	Perceived Threat – Pretest	0.702	<0.001
Efficacy	Gender	0.049	0.082
	White/Nonwhite	0.022	0.437
	PSA Group	0.017	0.539
	Risk Perception – Pretest	-0.189	<0.001
	Risk Perception – Posttest	0.261	<0.001
	Efficacy – Pretest	0.794	<0.001
Fear Arousal	Gender	0.026	0.312
	White/Nonwhite	0.014	0.604
	PSA Group	-0.018	0.479
	Risk Perception – Pretest	-0.051	0.228
	Risk Perception – Posttest	0.061	0.164
	Fear Arousal – Pretest	0.858	<0.001

Table 14: Regression Analysis for Predictors of Behavioral Intent

Variable	Factor	Beta	Significance
Behavioral Intent	Gender	0.003	0.950
	White/Nonwhite	0.048	0.339
	PSA Group	-0.061	0.224
	Risk Perception – Posttest	0.022	0.590
	Efficacy – Posttest	0.372	<0.001
	Perceived threat – Posttest	0.090	0.047
	Fear arousal – Posttest	0.035	0.250
	Behavioral Intent – Pretest	0.502	<0.001

Open-ended Comments on PSAs

Comments were analyzed to determine common themes for both strengths and weaknesses of the PSAs. Table 15 shows common praises and improvements, with an estimate of prevalence. There were 69 total open-ended comments, which can be found in

Appendix H. The majority of qualitative comments reflected areas of improvement as opposed to praise. This makes sense, since improvements were specifically requested by the open-ended question. Negative feedback roughly outnumbered positive feedback two to one, and all feedback was generally well split between the two PSA groups.

Table 15: Open-ended Comments Qualitative Analysis

Themes: Praise	POV PSA	External PSA	Totals
Realistic	1	4	5
Strong message	3	3	6
Well done	1	1	2
Effective	4	0	4
POV/shaky camera	2	0	2
Photos at end	1	2	3
Length	0	1	1
Totals	12	11	23
Themes: Improvements	POV PSA	External PSA	Totals
Sound effects	5	2	7
Statistics	1	4	5
General realism	2	4	6
More effects of crash on passengers	4	0	4
Staged/fake situation or dialogue	8	8	16
Photos at end	4	5	9
Video of crash/more graphic	3	6	9
Video quality	4	4	8
Acting	4	6	10
Different point of view	2	0	2
More emotional	5	7	13
Diversity	1	1	2
Slogan	1	0	1
Totals	44	47	92

Some representative quotes are presented below:

- For the POV PSA, suggesting a different perspective:
    - *"As you are attempting to dissuade people from texting and driving, I feel like the PSA could have been more effective if the camera was from the perspective of the driver. This would give the viewer a better understanding of how texting reduces your vision on the road. Possibly use two cameras. One could give the perspective of the driver, while the other shows what is happening in the roadway. Possibly vary the way the driver is texting to take into consideration the different ways people would text while behind the wheel."*
- For the POV PSA, praising the point of view but criticizing the quality:
    - *"It was very fake sounding and looking. Especially the pictures at the end that were clearly just randomly pulled to be representative. I found myself rolling my eyes at the corniness instead of appreciating this very serious message. I did like the first person camera style and the strategies the friend used to try to stop his friend from texting."*
- For the External PSA, suggestion to add to message connection:
    - *"The video was definitely more realistic than other extremely cliché PSA videos I've watched, but I think it could be taken to another level by showing the driver swerve to avoid hitting an animal crossing the street, or avoid running over a pothole. If the driver swerved or showed his*

instinctive reaction, it would have connected me more to the passengers, therefore making me feel as if I was actually in the car."

- General comments true for both PSAs:
    - Acting: *"Better actors would help and a more realistic, relatable outcome."*
    - Staged dialogue/situation, but effective emotional appeal at the end: *"The dialogue in the video was stilted, unrealistic, and overly dramatic. However, the bit near the end--pictures of crashes and bereaved loved ones--was effective. Perhaps more of a focus on the after effects of texting and driving would be more successful."*
    - Inundated with messages, staged feeling: *"The video was really cheesy so people would probably not take it too seriously. We hear so much about not texting in driving that we tend to ignore it."*
    - Realistic, but staged dialogue: *"The video is a realistic way to portray the dangers of texting and driving but it felt not like the dialogue was too dramatic which can make those who watch it not as connected to the situation if they watched it."*
    - Issue with emotional appeal at the end, liked realism up until that point: *"The end of the video was saccharine and ruined the realistic tone that it originally seemed to be trying to achieve."*
    - Diversity: *"Have more diversity in the people who are in the video. Everyone's white. It's off-putting."*

- Good until crash, needs to be scarier: *"I thought it was good but leading up to the crash it wasn't very scary."*
- Needs to be more graphic/show crash: *"I think the video needs to be more gruesome. If people were to see more serious effects they may think twice. If a car crash was shown after the skit goes black that would be more dramatic than showing that one picture."*

These qualitative comments provided unique insight that could be used for the development of future PSAs and the improvement of this PSA for future research and practice.

Chapter 5: Discussion

Summary of Findings

Descriptive Variables

Participants generally reported that they were safe drivers. This may be due to social desirability bias. However, social norms data suggests that many college students see texting and driving as common and not that dangerous (Harrison, 2011). This is counter to what the open-ended comments suggest in this study, which is that teens are being inundated with information and PSAs about texting and driving, and that they know it's not safe. Literature in college students suggests that fear and modeling appeals could be extremely useful in future PSAs related to young driving behaviors (Harrison, 2011), given that most teens claim to be aware of the dangers of texting and driving and keep doing it anyway.

Though norms data in this study still suggest this is a common behavior, more and more awareness of the issue was reported in the open-ended comments. This may be because the types of individuals who are likely to comment in an open-ended question are typically more involved with the issue or feel more strongly than others. Previous PSAs have been shown to successfully change norms with previous drinking and driving health education campaigns over time (in addition to legal sanctions), which have focused on informational and testimonial appeals over a long period of time (Atchley, Hadlock & Lane, 2012; Tay, 2005; Elder, Shults, Sleet, Nichols, Thompson & Rajab, 2004). This gives credence to future work in PSAs to affect social norms around texting and driving.

Found Footage Effects between PSAs and Open-ended Comments

While the manipulation check was successful and confirmed that the point of view of each PSA was distinctive, data showed that there was no difference in how effective one PSA was over another. This was true regardless of gender or race (white/nonwhite), so the lack of diversity in the PSAs likely did not have an effect on whether the POV PSA or the External PSA was more effective. This could be due to the fact that the point of view of the PSAs did not distinguish one PSA as found footage over the other. In found footage films, first person perspective is only a piece of what makes the film more realistic and relatable. The biggest concept is that the footage could very easily be real, either taken from a handheld camera, phone, or outside camera such as a security camera or dash cam. In the manipulation check, half of the students identified the source of the External PSA footage as a dash cam, Go Pro, or footage from another car filming in. This suggests that this, too, could be real found footage. Therefore, the styles of the two PSAs were not distinctive enough to gather proper data on the success of found footage versus fabricated PSAs.

In addition, the realistic feel that was being strived for in the PSAs was not achieved, based on analysis of the open-ended feedback. Many felt that the dialogue was forced, the situation was clearly staged, and the quality was poor. Though home video style was something that was necessary for the found footage aspect, the realism of the crash, particularly the sound effects and images at the end, were seen to be cheesy and ineffective. This detracted from any realism that the PSAs initially created. While found footage is typically first person or from realistic external camera sources, special effects must be realistic to keep the audience in that world. This was the case for a film like

Cloverfield, which was praised for its realism from found footage tactics as well as its special effects (Ebert, 2008, pg. 1). This quality issue and lack of realistic dialogue led to overall indifferent found footage response variable scores. There was also a general consensus that the PSAs were not scary enough, graphic enough, or emotional enough to truly feel real. Again, this detracts from the found footage response, as well as the overall effectiveness of the PSAs.

Suggestions to improve the PSAs included adding diversity (the main participants were white males), making the message more emotional and graphic, adding footage of the actual crash, using personal accounts from real people as opposed to actors, and improving the quality of the video in terms of dialogue, situational realism, acting ability, sound effects, and video quality. People liked the idea of being in the vehicle, but had suggestions on changing the point of view to make things scarier and add to the connection with the message (i.e., using the point of view of the back seat driver or the driver himself). This suggests that while this video needs to be improved, the logic behind using found footage to add to the realism and putting the viewer in the vehicle is sound, as has been shown in the research with video games and first person perspectives (Fischer, Kubitzki, Guter & Frey, 2007). The lack of budget and capability to film and edit better quality PSAs was a significant barrier in analyzing the true effects of found footage style.

Overall PSA Effectiveness

Though no differences between PSA groups were identified, both PSAs had a similar effect on risk perception, behavioral intent, perceived threat, efficacy, and fear arousal. Efficacy was the only variable that did not show a statistically significant

change between pretest and posttest scores. This is likely due to the lack of efficacy messaging in the PSA itself. The PSA was more strongly focused on perceived threat and risk, and efficacy was only targeted by the final tagline of the video. This was clearly not effective enough to evoke a chance in the efficacy variable. The efficacy scale also had a lower Cronbach's alpha (0.681), indicating that there were some issues with this measure on the survey (Bland & Altman, 1997). Stronger measures are needed to assess efficacy more appropriately, with clearer appeals in the PSA.

Risk perception, which was meant as a measure of internal consistency, showed a significant change between pretest and posttest, despite the fact that this variable measured perceptions of risks that were not directly addressed by the PSAs (i.e., seatbelt use, drinking and driving, speeding, etc.). Risk perception had an effect size of 0.214 between pretest and posttest, suggesting significant response bias in responses. The Cronbach's alpha for the risk perception scale was reasonable at 0.793 (Bland & Altman, 1997). The bias here is likely due to the fact that participants realized they were being asked about driving behaviors and answered more strongly on the posttest because it was expected of them. To examine this bias more closely, a regression analysis was conducted to determine the effect of risk perception on the other variables.

Behavioral intent was the most strongly affected variable between pretest and posttest, with an effect size of 0.402. While the risk perception posttest measure was a strong and significant predictor of behavioral intent, the beta weight of 0.207 versus the weight of the behavioral intent pretest measure on the posttest measure (0.677) suggests that while the true effect size controlling for risk perception may not be as high as recorded, the effect of behavioral intent between pretest and posttest is still likely to be

statistically significant, since behavioral intent accounts for most of the variance in its posttest measure. This variable was not significantly affected by gender or race (white/nonwhite), or by PSA treatment group, as previously discussed. When looking at all predictors for this variable, efficacy and perceived threat emerged as significant predictors, suggesting that even though these variables were not likely statistically significant on their own, they predicted our most affected variable and play a part in influencing behavioral intent.

Fear arousal was significantly affected by the PSAs between pretest and posttest, with an effect size of 0.123. Risk perception was found not to significantly affect this variable, and covered little to none of the posttest measure's variance. The major predictor of fear arousal on the posttest was the pretest measure, with a beta weight of 0.858. Given the reliability of this measure, with a Cronbach's alpha of 0.914, the change between pretest and posttest was statistically significant, even with a small effect size (Bland & Altman, 1997). This variable was not significantly affected by gender, race (white/nonwhite), or PSA group.

Perceived threat was found to be significantly affected by the PSAs between pretest and posttest, with an effect size of 0.140. However, risk perception on both the pretest and the posttest covered a large portion of the variance for this variable, with beta weights of -0.247 and 0.426, respectively. Compared to the beta weight of the perceived threat pretest score of 0.702 and the conservative effect size reported, this variable did not likely change significantly between pretest and posttest. In addition, the significance of this variable was swayed by a strongly female sample, as there was no statistical difference in the variable found in males. Given the fact that over 60% of the sample was

female, and females tend to respond to threat and fear appeals more strongly than males, this variable was biased not only by risk perception, but also by gender. This variable was relatively reliable, with a Cronbach's alpha of 0.758 (Bland & Altman, 1997). However, based on the biases at work, there was likely no significant change in this variable as a result of the PSAs.

Implications

Based on these findings, the PSAs likely had a significant effect on behavioral intent and fear arousal. However, the effect on fear arousal was not significant enough to change perceived threat or efficacy in a way that would produce the danger control response desired from the EPPM (Witte, 1992). Future research should continue to examine found footage style tactics in PSAs, as PSAs have been found to be effective to produce behavior change in these driving behaviors over long periods of time (Atchley, Hadlock & Lane, 2012; Tay, 2005; Elder, Shults, Sleet, Nichols, Thompson & Rajab, 2004), and behavioral intent is a strong predictor of short term behavior change (Fishbein, 1967). This PSA was made on no budget, and that caused definite issues in measuring the effects of a true found footage PSA. With minimal monetary input, PSAs could hire actors and purchase crash footage and better sound effects to ensure that the video quality does not hinder the effects of the PSA. Found footage style tactics such as the shaky camera and placing the viewer in the vehicle were generally praised, and researchers should continue to explore this area in future PSAs.

More research is needed on the effects of found footage, with more focus on elevating perceived threat and efficacy to produce a danger control response. Diversity should be considered in future PSAs and research, and norms should continue to be

examined to track the eventual shift in mindset as more and more PSAs and data are made available on texting and driving. Efforts should be made to ensure that the situations and dialogue in PSAs are as realistic as possible, particularly when striving for a found footage feel. All of this is important, as is a continued focus on PSA research and implementation to change behavioral intent, and thus behavior in the long term. This is particularly successful for preventive behaviors like texting and driving (Janz & Becker, 1984; Arria, Caldeira, Vincent & Wish, 2008).

Limitations

The most important limitation of this study is the quality of the videos produced. While the home-video style is essential to found footage, the editing, sound effects, acting, and lack of footage of the crash led to a lack of realism that is necessary for found footage. In addition, the two PSAs were likely both considered found footage, as the External PSA was thought to be filmed from a dash cam or Go Pro, which is realistic footage. No data was collected on the posttest with the entire survey population to accurately confirm the difference in point of view between the two PSAs. This additional information would help to confirm the results of the manipulation check and determine how effectively the point of view was changed. However, based on the qualitative responses, since both PSAs were equally likely to be real footage, the found footage effect was very difficult to measure between groups, and manipulation of this variable could not be confirmed. This was also diminished by video quality. While the study was sufficiently powered to detect small differences in variables, significant response bias was present as evidenced by the risk perception variable. Certain scales also had insufficient reliability, specifically the efficacy and social norms scales. Perceived threat

and risk perception had decent reliability, with the most reliable scales being the found footage response variable and the fear arousal scale (Ruiter, Kok, Verplanken, & Brug, 2001). Also, age data was not successfully captured. Additionally, no information was collected on participants' prior exposure to found footage films, anti-texting and driving PSAs or messaging, horror films in general, or TV and/or movie-going behavior. This information would add to the overall conclusions and help determine if found footage style is only capable of being effective for particular audiences.

Directions for Future Research

To continue this study, the PSAs would have to be revised. First, a stronger appeal to efficacy should be included. Also, the situation must be more realistic. Including a friend trying to convince their friend not to text and drive and having a crash in the same video was found implausible and unrealistic. In the future, the PSA should be in two parts: one where friends are driving/chatting and a crash occurs due to texting, and the other where friends are driving/chatting and a friend stops a friend from texting and driving and sends a text message for his friend. Based on the open-ended comments, this is a realistic situation and would add the realism, as it is unlikely that you would get in a crash from texting and driving while discussing texting and driving. This would also add to the efficacy appeal.

Next, the PSA quality would need to be improved. Actors would need to be recruited/hired, and crash footage should be purchased or filmed to show more of the effects of the crash. Using the situation presented above, the crash sequence could be shown, and an emotional passenger would be shown stating that if they could have gone back and saved their friend, this is what they would have done. Then, the sequence with

that same friend intervening and texting for the driver would be shown. This would add to the video quality, realism, and emotional appeal, addressing all issues with the PSAs.

To truly address the issues of found footage tactics, the dash cam and first person perspective shots could be intertwined throughout the PSA, with a first person perspective of the crash. A different PSA without any shots in the car would have to be tested alongside this found footage PSA to ensure that the distinction between the two groups was clear. In addition, I would adapt the measures in this survey instrument and validate each scale among a test group before the PSA was administered to ensure reliable scales and data. I would also test the survey more carefully to ensure that age data was captured.

When developing future PSAs and pieces using the found footage style, a longer format should be considered. It is possible that the found footage style may not be as effective in a shorter messaging format, given the fact that films are much longer and therefore have more time to develop connection and realism. Given the move toward YouTube videos, a longer format video should be considered, while still keeping audience attentiveness (especially for this young audience) and the Ad Council messaging standards in mind (*Frequently Asked Questions: Ad Council*, 2014).

It should also be noted that achieving realistic fear requires a very delicate balance of factors, and this should be considered in the development of future messages, as well as future research. While a car crash leading to death due to texting and driving may seem unrealistic to the audience, a smaller crash like a fender bender, or a legal sanction such as receiving a ticket from a police officer, may be more effective for certain audiences. These less severe situations may be perceived as more likely, and therefore

more realistic. In the future, the literature should be considered to develop PSAs or messages that are sensitive to the specific audience, particularly a younger audience who may feel more invincible and less affected by fear appeals linked to young death. Immediate consequences like legal or parental sanctions may be more effective, and more formative research should be conducted in the future to determine how best to reach this audience on this issue.

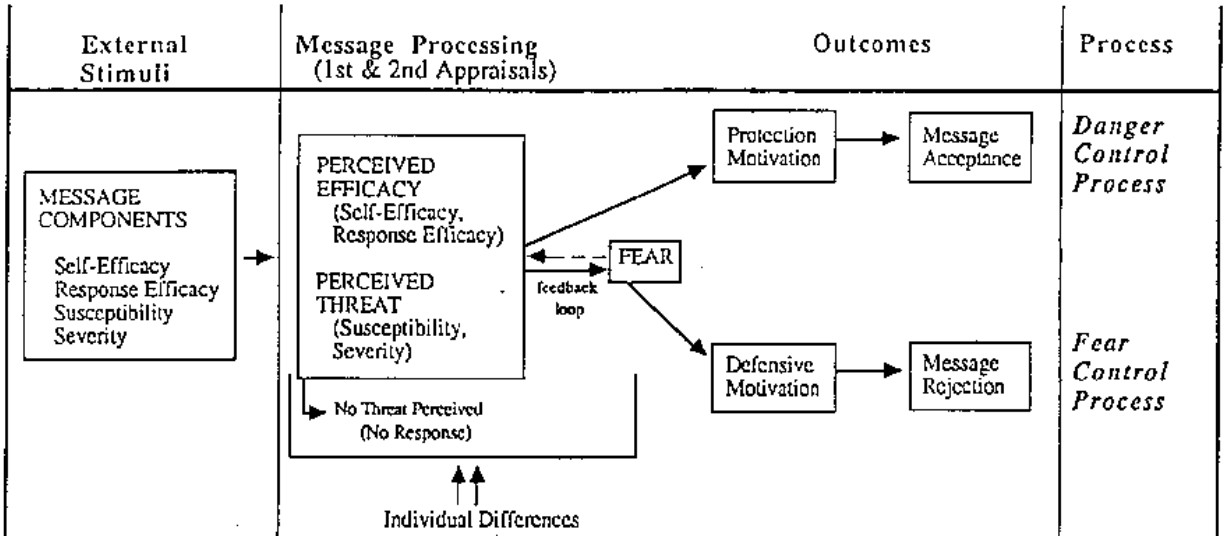
Conclusions

Overall, both hypotheses were rejected, and one PSA was no more effective than the other. However, both PSAs were found to increase fear arousal and behavioral intent. Though the found footage response was not strong per the quantitative data, the qualitative data and research suggest that the idea of putting the viewer in the vehicle and using realistic found footage tactics is promising and should be studied further. Found footage PSAs can include any realistic footage that could be taken from cameras within the car, so both PSAs were essentially viewed in the same manner, and the External PSA was not external enough to make a real difference. Future found footage research should ensure that this distinction is clear, and that strong video quality and situational realism tactics are employed, including realistic special effects. Future PSAs should be emotional, graphic, but also include efficacy appeals to produce a true danger control response and influence behavioral intent. Social norms should continue to be examined, as these should change over time as more and more PSAs and information are made available on texting and driving to this critical audience of young drivers.

Chapter 6: Appendices

Appendix A: Conceptual Framework

Extended Parallel Process Model (Witte, 1992)



Appendix B: PSA Script

Three college students in a car, getting ready to go on a road trip. Driver is male, with another male friend in the passenger's seat acting as the "camera man". In back, a girl sits on the driver's side of the vehicle. Two versions of the below will be filmed, one from the point of view of the "camera man", and one from an external rear view mirror camera.

Paul (passenger with iPhone, shows himself in camera and the traffic-filled road passing by, shows back seat passenger, goofing off/having fun together): And we're on the road! Just gotta pick up…

Hear a text message noise.

Chris (driver)**:** Got it – must be Becky wondering where we are. *Reaches hand off camera…*

Paul: Dude, we're gonna be there in like 5 minutes. She can wait.

Chris: No, I don't want her to think I'm ignoring her…*looks down to text*

Paul (getting progressively more scared, filming outside car to show speed/swerving)**:** Man, watch out for that pothole.

Chris: Dude, I didn't even come close to that. *Reaches hand over again*…

Paul (nervous, jerking iPhone recording with car moving, but trying to play it cool): Just let me text her for you…

Chris: Seriously dude, just relax. I do this all the time.

Paul (nervous): I'm relaxed, I just…

Melissa (Paul's girlfriend): He's a really good driver. Don't worry so much…LOOK OUT!

Camera goes black and you hear crashing noises/screams. Call to action appears on the screen and is narrated by Becky, upset/crying but audible: ***It only takes one moment, one message, one mistake…If you care, prove it. Don't let your friends text and drive.***

Appendix C: Consent Forms

Manipulation Check Consent Form

Project Title	*Texting and Driving Public Service Announcement Testing*
Purpose of the Study	This research is being conducted by Ms. Samantha Watters at the University of Maryland, College Park. We are inviting you to participate in this research project because you are an undergraduate at the University of Maryland. The purpose of this research project is to examine the effects of a texting and driving public service announcement (PSA) on young adults.
Procedures	You will be asked to view two 60-second PSAs, and complete a survey that asks questions about your reactions to the PSAs. The survey will be anonymous, and no personal information will be taken. We will be asking questions about your response to the texting and driving PSAs you view. You can choose not to answer any questions. If at any time you have questions or concerns about the questionnaire, you are urged to discuss these issues with the researcher. Also, if at any time you would like to withdraw your participation, you are free to do so. The surveys will take no more than 10 minutes of your time. You will be provided refreshments for your time.
Potential Risks and Discomforts	Although risks in the current study are quite low, the PSAs may be considered sensitive in nature as driving behavior is depicted. As such, you may experience temporary negative mood as a result of completing the questionnaires and viewing the PSAs. In addition, although every possible means will be used to protect the privacy and identity of the participants, there is always a chance of an inadvertent loss of confidentiality. In order to mitigate these risks, no personal information will be taken, and you will be provided with a website to provide you with additional information on safe driving.
Potential Benefits	There are no direct benefits from participation in this research. However, possible indirect benefits may include reflection on your driving behaviors and steps you may wish to take to modify these behaviors. We hope that, in the future, other people might benefit from this study through improved understanding of texting and driving, helping to inform educational campaigns and future research.

Confidentiality	Any potential loss of confidentiality will be minimized by not taking any personal information throughout the process. The data will be collected in hard copy, analyzed, and stored on a secure password-protected computer. The investigators have had considerable experience with keeping and maintaining survey data. All published reports will not include any personal identifiers and will use aggregate data only. This data will not be shared with anyone outside the research team and will have no implications for any future administrative, legal, or financial consequences that you may experience. Finally, any data will be destroyed 5 years after the conclusion of data collection for the study. If we write a report or article about this research project, your identity will be protected to the maximum extent possible. Your information may be shared with representatives of the University of Maryland, College Park or governmental authorities if you or someone else is in danger or if we are required to do so by law.
Right to Withdraw and Questions	Your participation in this research is completely voluntary. You may choose not to take part at all. If you decide to participate in this research, you may stop participating at any time. If you decide not to participate in this study or if you stop participating at any time, you will not be penalized or lose any benefits to which you otherwise qualify except for your chance to win the incentive. If you are a student at the University of Maryland, your grades or standing with the university will not be positively or negatively affected by your decision to participate or not participate in this research project. If you decide to stop taking part in the study, if you have questions, concerns, or complaints, or if you need to report an injury related to the research, please contact the investigator: **Ms. Samantha Watters at samurai7@umd.edu, 410-610-4326, or Dr. Kerry M. Green at greenkm@umd.edu, 301-405-2524.**
Participant Rights	If you have questions about your rights as a research participant or wish to report a research-related injury, please contact: **University of Maryland College Park** **Institutional Review Board Office** **1204 Marie Mount Hall** **College Park, Maryland, 20742** **E-mail:** irb@umd.edu **Telephone: 301-405-0678**

	This research has been reviewed according to the University of Maryland, College Park IRB procedures for research involving human subjects.	
Statement of Consent	Your consent indicates that you are at least 18 years of age; you have read this consent form; your questions have been answered to your satisfaction and you voluntarily agree to participate in this research study. You may print a copy of this consent form for your records. Are you a licensed driver attending the University of Maryland as an undergraduate student, and do you wish to participate in this survey?	
Signature and Date	**NAME OF PARTICIPANT** **[Please Print]**	
	SIGNATURE OF PARTICIPANT	
	DATE	

Survey Consent Form

Project Title	*Texting and Driving Public Service Announcement Testing*
Purpose of the Study	This research is being conducted by Ms. Samantha Watters at the University of Maryland, College Park. We are inviting you to participate in this research project because you are an undergraduate at the University of Maryland. The purpose of this research project is to examine the effects of a texting and driving public service announcement (PSA) on young adults.
Procedures	You will be asked to complete a pretest, view a 60-second PSA, and complete a posttest survey that asks questions about what kind of driver you are and about your reactions to the PSA. These surveys will be anonymous, and no personal information aside from basic demographic information will be taken. Some of the questions are of a sensitive nature. We will be asking questions about various risky driving practices (i.e., how many times you drove over the speed limit) and events (e.g., traffic citations and crashes) you have experienced. We will also be asking about drunk driving. You can choose not to answer any questions. If at any time you have questions or concerns about the questionnaire, you are urged to discuss these issues with the researcher. Also, if at any time you would like to withdraw your participation, you are free to do so. The surveys will take no more than 20 minutes of your time. You will receive a 1 in 50 chance to win $25 Amazon gift card for your time. An email address will be requested, but only to provide you with your gift card.
Potential Risks and Discomforts	Although risks in the current study are quite low, the questionnaires and PSA may be considered sensitive in nature as driving behavior questions are discussed. As such, you may experience temporary negative mood as a result of completing the questionnaires and viewing the PSA. In addition, although every possible means will be used to protect the privacy and identity of the participants, there is always a chance of an inadvertent loss of confidentiality. In order to mitigate these risks, personal information will only be used to generate automated emails to provide incentives, information will be deleted once a unique identifying number is assigned to your data, and you will be provided with a website to provide you with additional information on safe driving.
Potential Benefits	There are no direct benefits from participation in this research. However, possible indirect benefits may include reflection on your driving behaviors and steps you may wish to take to modify these behaviors. We hope that,

	in the future, other people might benefit from this study through improved understanding of texting and driving, helping to inform educational campaigns and future research.
Confidentiality	Any potential loss of confidentiality will be minimized by not taking any personal information throughout the survey process. Email addresses will be requested but only used to distribute Amazon gift cards. The data will be collected online via Qualtrics and stored on a secure password-protected computer. The investigators have had considerable experience with keeping and maintaining survey data. All published reports will not include any personal identifiers and will use aggregate data only. This data will not be shared with anyone outside the research team and will have no implications for any future administrative, legal, or financial consequences that you may experience. Finally, any data will be destroyed 5 years after the conclusion of data collection for the study. If we write a report or article about this research project, your identity will be protected to the maximum extent possible. Your information may be shared with representatives of the University of Maryland, College Park or governmental authorities if you or someone else is in danger or if we are required to do so by law.
Compensation	You will receive a 1 in 50 chance of winning a $25 Amazon gift card. You will be responsible for any taxes assessed on the compensation. ☐ Check here if you expect to earn $600 or more as a research participant in UMCP studies in this calendar year. You must provide your name, address and SSN to receive compensation. ☐ Check here if you do not expect to earn $600 or more as a research participant in UMCP studies in this calendar year. Your name, address, and SSN will not be collected to receive compensation.
Right to Withdraw and Questions	Your participation in this research is completely voluntary. You may choose not to take part at all. If you decide to participate in this research, you may stop participating at any time. If you decide not to participate in this study or if you stop participating at any time, you will not be penalized or lose any benefits to which you otherwise qualify except for your chance to win the incentive. If you are a student at the University of Maryland, your grades or standing with the university will not be

	positively or negatively affected by your decision to participate or not participate in this research project. If you decide to stop taking part in the study, if you have questions, concerns, or complaints, or if you need to report an injury related to the research, please contact the investigator: **Ms. Samantha Watters at samurai7@umd.edu, 410-610-4326, or Dr. Kerry M. Green at greenkm@umd.edu, 301-405-2524.**	
Participant Rights	If you have questions about your rights as a research participant or wish to report a research-related injury, please contact: **University of Maryland College Park** **Institutional Review Board Office** **1204 Marie Mount Hall** **College Park, Maryland, 20742** **E-mail:** irb@umd.edu **Telephone: 301-405-0678** This research has been reviewed according to the University of Maryland, College Park IRB procedures for research involving human subjects.	
Statement of Consent	Your consent indicates that you are at least 18 years of age; you have read this consent form; your questions have been answered to your satisfaction and you voluntarily agree to participate in this research study. You may print a copy of this consent form for your records. Are you a licensed driver attending the University of Maryland as an undergraduate student, and do you wish to participate in this survey?	
	YES	
	NO	

Appendix D: Manipulation Check Survey

Survey: Manipulation Check – After PSA 1 (*Show PSA 1, then administer the following survey questions*)

1. I connected with this message.

1	2	3	4	5	6	7	8	9	10
Strongly Disagree									Strongly Agree

2. This PSA was emotional.

1	2	3	4	5	6	7	8	9	10
Strongly Disagree									Strongly Agree

3. This was real/realistic footage.

1	2	3	4	5	6	7	8	9	10
Strongly Disagree									Strongly Agree

4. This PSA would help reduce texting and driving among young adults.

1	2	3	4	5	6	7	8	9	10
Strongly Disagree									Strongly Agree

5. I felt like I was in the vehicle with them.

1	2	3	4	5	6	7	8	9	10
Strongly Disagree									Strongly Agree

6. This PSA was scary.

1	2	3	4	5	6	7	8	9	10
Strongly Disagree									Strongly Agree

7. Who did you think was filming the PSA?

Survey: Manipulation Check – After PSA 2 (*Show PSA 2, then administer the following survey questions*)

1. I connected with this message.

1	2	3	4	5	6	7	8	9	10
Strongly Disagree									Strongly Agree

2. This PSA was emotional.

1	2	3	4	5	6	7	8	9	10
Strongly Disagree									Strongly Agree

3. This was real/realistic footage.

1	2	3	4	5	6	7	8	9	10
Strongly Disagree									Strongly Agree

4. This PSA would help reduce texting and driving among young adults.

1	2	3	4	5	6	7	8	9	10
Strongly Disagree									Strongly Agree

5. I felt like I was in the vehicle with them.

1	2	3	4	5	6	7	8	9	10
Strongly Disagree									Strongly Agree

6. This PSA was scary.

1	2	3	4	5	6	7	8	9	10
Strongly Disagree									Strongly Agree

7. Who did you think was filming the PSA?

8. Did you notice a difference between the two PSAs?

8. Which PSA do you feel was more effective?

9. Which PSA seemed more realistic?

10. Any thoughts on how to improve either PSA?

Appendix E: Pretest

1. Gender

Male Female

2. Age

_____ years

3. Race (circle at least one)

White
African American
Asian
Native American
Other

4. Are you of Spanish/Hispanic origin?

Yes No

5. College Major: _____

6. How long have you had your driver's license?

_____ years and _____ months

7. About how many miles do you drive per week (approximate a number)?

_____

8. How often do you usually drive a car or other motor vehicle?

Never	Only certain times a year	Once a week or less	Several days a week	Every day

In the PAST MONTH, how often have you:

9. Talked on a cell phone while you were driving.

Never	Once or Twice	Once a Week	2-3 Times a Week	Daily

10. Driven without a seat belt.

Never	Once or Twice	Once a Week	2-3 Times a Week	Daily

11. Driven more than 20 miles over the speed limit.

Never Once or Twice Once a Week 2-3 Times a Week Daily

12. Driven aggressively.

Never Once or Twice Once a Week 2-3 Times a Week Daily

13. Driven after having a few drinks.

Never Once or Twice Once a Week 2-3 Times a Week Daily

14. Ran a stop sign or traffic light.

Never Once or Twice Once a Week 2-3 Times a Week Daily

15. Changed lanes frequently and abruptly.

Never Once or Twice Once a Week 2-3 Times a Week Daily

16. Tailgated other vehicles.

Never Once or Twice Once a Week 2-3 Times a Week Daily

17. Driven when you know you have had too much to drink.

Never Once or Twice Once a Week 2-3 Times a Week Daily

18. Competed with other cars while in a traffic jam.

Never Once or Twice Once a Week 2-3 Times a Week Daily

19. Got a ticket or citation.

Never Once or Twice A Few Times a Year Monthly More Often

20. Had a close call or near miss.

Never Once or Twice Once a Week 2-3 Times a Week Daily

Since you <u>first got your license</u> and first started to drive:

21. How many traffic tickets for a moving violation (e.g. speeding, running stop signs or red lights) have you gotten?

0 1 2 3 4 5 or more

22. How many traffic crashes (not minor fender benders) have you been in?

0 1 2 3 4 5 or more

23. What do you think the chances are of getting in a minor car accident if you drink and drive?

Very unlikely Somewhat unlikely Somewhat likely Very likely Almost certain

24. What do you think the chances are of getting a ticket if you do not wear your seat belt?

Very unlikely Somewhat unlikely Somewhat likely Very likely Almost certain

25. If you drove after having too much to drink, how likely are you to be stopped by a police officer?

Very unlikely Somewhat unlikely Somewhat likely Very likely Almost certain

26. What do you think the chances are of getting a ticket if you drive over the speed limit?

Very unlikely Somewhat unlikely Somewhat likely Very likely Almost certain

27. What do you think the chances are of getting a ticket if you talk on a cell phone and drive?

Very unlikely Somewhat unlikely Somewhat likely Very likely Almost certain

28. What do you think the chances are of getting in a major (fatal or near fatal) car accident if you drink and drive?

Very unlikely Somewhat unlikely Somewhat likely Very likely Almost certain

29. What do you think the chances are of getting a ticket if you text and drive?

Very unlikely Somewhat unlikely Somewhat likely Very likely Almost certain

30. How severe do you think the ticket would be if you were pulled over for texting and driving?

Not at all Not very Neutral Somewhat Very

31. What do you think the chances are of getting in a car accident if you text someone while driving?

Very unlikely	Somewhat unlikely	Somewhat likely	Very likely	Almost certain

32. How severe do you think the accident would be if you got in a car accident while texting and driving?

Not at all	Not very	Neutral	Somewhat	Very

33. All of my friends are good drivers.

1	2	3	4	5	6	7	8	9	10
Strongly Disagree									Strongly Agree

34. All of my friends text and drive.

1	2	3	4	5	6	7	8	9	10
Strongly Disagree									Strongly Agree

35. I feel comfortable speaking up when I feel unsafe in a vehicle with someone else driving.

1	2	3	4	5	6	7	8	9	10
Strongly Disagree									Strongly Agree

36. All of my friends think texting and driving is safe.

1	2	3	4	5	6	7	8	9	10
Strongly Disagree									Strongly Agree

37. I do not text and drive.

1	2	3	4	5	6	7	8	9	10
Strongly Disagree									Strongly Agree

38. Texting and driving is riskier than drinking and driving.

1	2	3	4	5	6	7	8	9	10
Strongly Disagree									Strongly Agree

39. Texting and driving is safer for a more experienced driver than for a new driver.

1	2	3	4	5	6	7	8	9	10
Strongly Disagree									Strongly Agree

40. If I text and drive and get in an accident, I can severely hurt myself, friends, family, and others.

1	2	3	4	5	6	7	8	9	10
Strongly Disagree									Strongly Agree

41. I am confident I can avoid texting and driving.

1	2	3	4	5	6	7	8	9	10
Strongly Disagree									Strongly Agree

42. I am confident I can talk to my friends and discourage them from texting and driving.

1	2	3	4	5	6	7	8	9	10
Strongly Disagree									Strongly Agree

43. If I don't text and drive, I will be less likely to get in an accident.

1	2	3	4	5	6	7	8	9	10
Strongly Disagree									Strongly Agree

44. I feel:

- Worried

Not at all	Not very	Neutral	Somewhat	Very

- Jittery

Not at all	Not very	Neutral	Somewhat	Very

- Uncomfortable

Not at all	Not very	Neutral	Somewhat	Very

- Relaxed

Not at all	Not very	Neutral	Somewhat	Very

- Anxious

Not at all	Not very	Neutral	Somewhat	Very

- Calm

Not at all	Not very	Neutral	Somewhat	Very

- Tense

Not at all Not very Neutral Somewhat Very

- Frightened

Not at all Not very Neutral Somewhat Very

- Nervous

Not at all Not very Neutral Somewhat Very

- Restful

Not at all Not very Neutral Somewhat Very

Appendix F: Posttest

1. I connected with this message.

1	2	3	4	5	6	7	8	9	10
Strongly Disagree									Strongly Agree

2. This PSA was emotional.

1	2	3	4	5	6	7	8	9	10
Strongly Disagree									Strongly Agree

3. This was real/realistic footage.

1	2	3	4	5	6	7	8	9	10
Strongly Disagree									Strongly Agree

4. This PSA would help reduce texting and driving among young adults.

1	2	3	4	5	6	7	8	9	10
Strongly Disagree									Strongly Agree

5. I felt like I was in the vehicle with them.

1	2	3	4	5	6	7	8	9	10
Strongly Disagree									Strongly Agree

6. This PSA was scary.

1	2	3	4	5	6	7	8	9	10
Strongly Disagree									Strongly Agree

7. I do not intend to text and drive.

1	2	3	4	5	6	7	8	9	10
Strongly Disagree									Strongly Agree

8. What do you think the chances are of getting in a minor car accident if you drink and drive?

Very unlikely	Somewhat unlikely	Somewhat likely	Very likely	Almost certain

9. What do you think the chances are of getting a ticket if you do not wear your seat belt?

Very unlikely	Somewhat unlikely	Somewhat likely	Very likely	Almost certain

10. If you drove after having too much to drink, how likely are you to be stopped by a police officer?

Very unlikely	Somewhat unlikely	Somewhat likely	Very likely	Almost certain

11. What do you think the chances are of getting a ticket if you drive over the speed limit?

Very unlikely	Somewhat unlikely	Somewhat likely	Very likely	Almost certain

12. What do you think the chances are of getting a ticket if you talk on a cell phone and drive?

Very unlikely	Somewhat unlikely	Somewhat likely	Very likely	Almost certain

13. What do you think the chances are of getting in a major (fatal or near fatal) car accident if you drink and drive?

Very unlikely	Somewhat unlikely	Somewhat likely	Very likely	Almost certain

14. What do you think the chances are of getting a ticket if you text and drive?

Very unlikely	Somewhat unlikely	Somewhat likely	Very likely	Almost certain

15. How severe do you think the ticket would be if you were pulled over for texting and driving?

Not at all	Not very	Neutral	Somewhat	Very

16. What do you think the chances are of getting in a car accident if you text someone while driving?

Very unlikely	Somewhat unlikely	Somewhat likely	Very likely	Almost certain

17. How severe do you think the accident would be if you got in a car accident while texting and driving?

Not at all	Not very	Neutral	Somewhat	Very

18. Texting and driving is riskier than drinking and driving.

1	2	3	4	5	6	7	8	9	10
Strongly Disagree									Strongly Agree

19. Texting and driving is safer for a more experienced driver than for a new driver.

1	2	3	4	5	6	7	8	9	10
Strongly Disagree									Strongly Agree

20. If I text and drive and get in an accident, I can severely hurt myself, friends, family, and others.

1	2	3	4	5	6	7	8	9	10
Strongly Disagree									Strongly Agree

21. I am confident I can avoid texting and driving.

1	2	3	4	5	6	7	8	9	10
Strongly Disagree									Strongly Agree

22. I am confident I can talk to my friends and discourage them from texting and driving.

1	2	3	4	5	6	7	8	9	10
Strongly Disagree									Strongly Agree

23. If I don't text and drive, I will be less likely to get in an accident.

1	2	3	4	5	6	7	8	9	10
Strongly Disagree									Strongly Agree

24. I feel:

- Worried

Not at all	Not very	Neutral	Somewhat	Very

- Jittery

Not at all	Not very	Neutral	Somewhat	Very

- Uncomfortable

Not at all	Not very	Neutral	Somewhat	Very

- Relaxed

Not at all	Not very	Neutral	Somewhat	Very

- Anxious

Not at all	Not very	Neutral	Somewhat	Very

- Calm

Not at all Not very Neutral Somewhat Very

- Tense

Not at all Not very Neutral Somewhat Very

- Frightened

Not at all Not very Neutral Somewhat Very

- Nervous

Not at all Not very Neutral Somewhat Very

- Restful

Not at all Not very Neutral Somewhat Very

25. Do you have any additional comments? Ways to make this more effective? Reactions?

Appendix G: Manipulation Check Results

Variable	Responses	External PSA (mean)	POV PSA (mean)
Connection with the Message	1: Strongly disagree – 10: Strongly agree	8.7	8.3
Emotional	1: Strongly disagree – 10: Strongly agree	5.0	6.5
Realistic Footage	1: Strongly disagree – 10: Strongly agree	7.0	6.8
Effective for Behavior Change	1: Strongly disagree – 10: Strongly agree	6.3	6.7
Felt in the Vehicle	1: Strongly disagree – 10: Strongly agree	5.7	8.8
Scary	1: Strongly disagree – 10: Strongly agree	5.0	5.7

Question	External PSA (frequency)	POV PSA (frequency)
Which PSA was more effective? N=6	1	5
Which PSA was more realistic? N=6	0	6

Suggestions to improve PSAs:

- I think if you had more of the effects of the crash on the passengers at the end, it would be more interesting.
- Honestly, the scarier you make it the more it will hit home. The end picture is a mess, but it isn't particularly scary because you don't see the people.
- Change the accident screen shot to something a bit bleaker looking. I know the cars are totaled, but perhaps the background could be a gray dismal day or you could show a person in the car looking disappointed.
- Perhaps make it from the point of view of the person in the back.

- To generate more feelings of shock, you could film the bodies/more film on the outcome of the accident.
- Maybe not have the passenger stress the driver to put the phone down. I don't think friends really dissuade their friends from texting and driving. That way when they do have any accidents, then it creates a greater impact to viewer rather than the foreshadowing provided currently.

Appendix H: Open-Ended Comments on PSAs

Comments for POV PSA:

1. The realistic video made it more interesting.
2. The PSA has a good message, but is hard to take seriously. The cheesy car screech sound effect pretty much ruins the video.
3. The PSA is not that great. There needs to be information about how much time it takes to text someone a message and then what can happen in those seconds that you are texting. Everyone knows there's a chance texting can distract you and cause and accident but they don't understand exactly what they're doing when they take their eyes off the road to put their mind in a completely different place.
4. More realistic. Maybe other passengers banged up talking about the others who were hurt.
5. The video totally looks staged and the sound effect for the car screech is very low quality. Some good examples of road safety PSAs would be from Irelands Department of the Environment Road Safety channel on YouTube. Warning some are graphic and use shock to bring the message to the viewer, such as "Once" and "Classroom".
6. This PSA was well-done, but I think the selection of photos at the end could be slightly less relevant. I felt like they were pulled from Google images. Video at the end could be more effective. But overall, great job!
7. This situation wasn't realistic for my life. In situations where I'm in the car with my friends we're more likely to have someone other than the driver text so there isn't much of a need to convince someone not to text.

8. Higher quality footage and leaving out the cheesy sound effect may be better. I very much support the PSA though.
9. Better video actors in the video.
10. As you are attempting to dissuade people from texting and driving, I feel like the PSA could have been more effective if the camera was from the perspective of the driver. This would give the viewer a better understanding of how texting reduces your vision on the road. Possibly use two cameras. One could give the perspective of the driver, while the other shows what is happening in the roadway. Possibly vary the way the driver is texting to take into consideration the different ways people would text while behind the wheel.
11. I think the video was somewhat effective, it was not the best quality, but it got the message across. I never text and drive and this survey strengthened those feelings that I never will.
12. There are some better videos that have an emotional grab that is larger than the one I watched. Other than that, I know I have texted and drove, and my experience has taught me to only do that when stopped. If my vehicle is in motion, I don't allow distractions. Although this is how I do things, such a thing can be used in the wrong way. If someone agreed with me, then they might be more likely to let a text or two slide while driving and not stopped.
13. I would suggest making the video a little more serious and potentially put a female in the passenger seat and a male in the back seat.
14. Have a slogan.

15. The PSA seemed cheesy. I find that emotional testimonials make a more meaningful impact. It is hard to connect with a PSA that is mainly fake acting with extremely stereotypical situations/phrases.
16. The PSA video was pretty bad, poor video quality. Not much of a realistic conversation. Not very effective.
17. The PSA was effective, but in order to really catch the attention of people who do text/drink and drive, it has to be more serious.
18. The PSA could have used better quality sound effects. They were a little silly and detract from the serious message.
19. Maybe hire actors?
20. The video was really cheesy so people would probably not take it too seriously. We hear so much about not texting in driving that we tend to ignore it.
21. The PSA was very effective in displaying the possible consequences of texting and driving.
22. A PSA that also includes interviews with people who have personally been affected by texting and driving would also be very powerful/persuasive.
23. A video about real life texting/driving accidents instead of a staged one would have been more effective.
24. The "accident" in the video was sudden but it did not leave much of an impact for me. Maybe some sad music would help, or more powerful images and examples
25. It is a strong message/video, but like the case with smokers, it’s truly up to the individual to stop or seek assistance. Not everyone even with approaches like this

one will come to understand the severity of texting/talking on the phone while driving. Overall it is an effective approach.

26. The cut scene at the end did not fade in smoothly -- felt awkward.
27. Extend the end of the video with the scenes of car accidents, people grieving, etc. to make the message stronger/more emotional.
28. It was very fake sounding and looking. Especially the pictures at the end that were clearly just randomly pulled to be representative. I found myself rolling my eyes at the corniness instead of appreciating this very serious message. I did like the first person camera style and the strategies the friend used to try to stop his friend from texting.
29. The women crying and hugging the lady was really impactful...actors could take some more classes on acting.
30. Perhaps showing the reaction of the girl the guy was texting to show how she would rather have had them not respond than risk their lives at the end would be effective.
31. The car sound effect sounds more like skidding than a crash and is hard to take seriously, despite the obvious weight of the topic.
32. Dialogue seemed a little fake, chances are you wouldn't crash while having the conversation about texting and driving.
33. I think the video quality could improve- it looks a little too much like a home video (although I see why that was chosen).
34. Really like the unsteady camera effect. Could be more realistic at the end.

35. If the perspective was from the back seat, it would be better. I know this is harder to do but it, makes for a better PSA.

Comments for External PSA:

1. Rather than a dramatized video, I think simply showing pictures/videos of wrecked cars and crippled/dead people would probably be more effective. This seemed contrived.
2. Better actors would help and a more realistic, relatable outcome.
3. The dialogue in the video was stilted, unrealistic, and overly dramatic. However, the bit near the end--pictures of crashes and bereaved loved ones--was effective. Perhaps more of a focus on the after effects of texting and driving would be more successful.
4. Need to make the video more realistic. I don't connect with the video but I understood the message.
5. More realistic video footage. Pictures of texting and driving accidents or statistics.
6. The acting seemed a bit stiff, and I found it hard to believe that he was really that determined to text that girl even though they were 5 minutes away. Though I guess some people are like that...It was an okay video overall.
7. The video was bad acting and having a guy recording on his phone was random and weird so I didn't feel connected to the video at all.
8. I did not connect with the PSA. It didn't seem realistic.
9. The video could benefit from factual evidence besides the situations shown.

10. The PSA had poor acting so it wasn't very realistic, showing real life families and footage from texting and driving stories would have been more serious and emotional.
11. It was a well-made video and I think it definitely brings awareness to texting and driving to people who are completely unaware of its consequences. I think I would feel more emotionally connected to messages when the actual family talked about their dead loved ones because of texting and driving. If you emphasized one specific person, like an actual incident of someone so young, then it would be more personal and relatable. Also, I didn't know until recently that texting and driving was more dangerous than drinking and driving, so I think that adding that fact on there would create a shock factor.
12. The PSA seems very unprofessional and not well put together.
13. The acting in the video scene was kind of stiff/cheesy/not realistic. That, and the weird "crash" transition to the photo montage made it hard to take seriously.
14. More visual of the effects of texting and driving, the risks and results and the consequences you and everyone else has to pay for you when you do so.
15. I didn't think the video was very powerful. I've seen other videos on YouTube that were graphic and more powerful. They showed live footage of a texting and driving accident. That particular video made me really think about the negative consequences of texting and driving. The video shown for this study, however, made me feel indifferent.
16. The video looked very manufactured and unreal. It wasn't very effective in getting the point across. I was distracted from the message by concentrating on how

fabricated it felt. The video would have to be more drastic to send a stronger and deeper inset message.

17. The end of the video was saccharine and ruined the realistic tone that it originally seemed to be trying to achieve. Also, most people I know have Bluetooth integration or some other phone program that allows them to text hands-free via voice while driving.
18. Video was clearly fake, but still sent the message.
19. The actors in the video were a bit too comedic.
20. The PSA was very scripted, which I think detracts from the message because it seems less rooted in reality. The use of real photos at the end made it seem more real, but it seemed rushed - a couple more photos or a real-life story would have made it more effective.
21. It was realistic, just not all that convincing.
22. Have more diversity in the people who are in the video. Everyone's white. It's off-putting.
23. The video should be a little more realistic. Having actual footage of someone getting into an accident while texting and driving would get more of a reaction I think.
24. I thought it was good but leading up to the crash it wasn't very scary.
25. Possibly making the video even more emotional by including more real-life incidents instead of quick flashes of pictures.
26. Talk with someone in an actual accident. Make it personal, not like actors in a car

27. The video could use better production. It felt scripted and fake and the natural sound distracted from the message. Additionally, using only one shot made the video stagnant and stale after a couple dozen seconds -- try adding additional angles to make it more dynamic. As far as the content, it is incredibly predictable in my view of a texting and driving PSA - it doesn't bring any new knowledge to the situation for me as a teenager.
28. I liked that it wasn't a really long PSA because often they are way too long. You got your message across simply and shortly. However at the same time it wasn't a particularly captivating video.
29. The video was definitely more realistic than other extremely cliché PSA videos I've watched, but I think it could be taken to another level by showing the driver swerve to avoid hitting an animal crossing the street, or avoid running over a pothole. If the driver swerved or showed his instinctive reaction, it would have connected me more to the passengers, therefore making me feel as if I was actually in the car.
30. I think the video needs to be more gruesome. If people were to see more serious effects they may think twice. If a car crash was shown after the skit goes black that would be more dramatic than showing that one picture.
31. I thought the PSA should have been a little more realistic - emotional music? Maybe had a view of the camera from the front of the car as the accident happened? Using video footage instead of photos at the end.
32. Some actual statistics would be useful. The video was good for what it was, but as an emotional appeal it was weakened because I don't relate to that sort of

situation. Data would make this a more universal argument. Then again, I don't use a cell phone, so I'm not the target audience anyway.

33. The video is a realistic way to portray the dangers of texting and driving but it felt not like the dialogue was too dramatic which can make those who watch it not as connected to the situation if they watched it.
34. Make it a bit more emotional that it affects you more.

Appendix I: IRB Approval Letter

UNIVERSITY OF MARYLAND
INSTITUTIONAL REVIEW BOARD

1204 Marie Mount Hall
College Park, MD 20742-5125
TEL 301.405.4212 FAX 301.314.1475
irb@umd.edu
www.umresearch.umd.edu/IRB

DATE:	September 24, 2014
TO:	Samantha Watters, MPH
FROM:	University of Maryland College Park (UMCP) IRB
PROJECT TITLE:	[651303-2] Texting and Driving Public Service Announcement Testing
REFERENCE #:	
SUBMISSION TYPE:	Amendment/Modification
ACTION:	APPROVED
APPROVAL DATE:	September 24, 2014
EXPIRATION DATE:	September 7, 2015
REVIEW TYPE:	Expedited Review
REVIEW CATEGORY:	Expedited review category # *7*

Thank you for your submission of Amendment/Modification materials for this project. The University of Maryland College Park (UMCP) IRB has APPROVED your submission. This approval is based on an appropriate risk/benefit ratio and a project design wherein the risks have been minimized. All research must be conducted in accordance with this approved submission.

Prior to submission to the IRB Office, this project received scientific review from the departmental IRB Liaison.

This submission has received Expedited Review based on the applicable federal regulations.

Please remember that informed consent is a process beginning with a description of the project and insurance of participant understanding followed by a signed consent form. Informed consent must continue throughout the project via a dialogue between the researcher and research participant. Unless a consent waiver or alteration has been approved, Federal regulations require that each participant receives a copy of the consent document.

Please note that any revision to previously approved materials must be approved by this committee prior to initiation. Please use the appropriate revision forms for this procedure.

All UNANTICIPATED PROBLEMS involving risks to subjects or others (UPIRSOs) and SERIOUS and UNEXPECTED adverse events must be reported promptly to this office. Please use the

appropriate reporting forms for this procedure. All FDA and sponsor reporting requirements should also be followed.

All NON-COMPLIANCE issues or COMPLAINTS regarding this project must be reported promptly to this office.

This project has been determined to be a Minimal Risk project. Based on the risks, this project requires continuing review by this committee on an annual basis. Please use the appropriate forms for this procedure. Your documentation for continuing review must be received with sufficient time for review and continued approval before the expiration date of September 7, 2015.

Please note that all research records must be retained for a minimum of seven years after the completion of the project.

If you have any questions, please contact the IRB Office at 301-405-4212 or irb@umd.edu. Please include your project title and reference number in all correspondence with this committee.

This letter has been electronically signed in accordance with all applicable regulations, and a copy is retained within University of Maryland College Park (UMCP) IRB's records.

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