

RUNNING HEAD: MORTALITY SALIENCE AND HEALTH PROMOTION

The Effect Of Mortality Salience On Health Promotion:  
Using An Anti-Tobacco Social Exclusion Public Service Announcement

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in partial fulfillment of the requirements for the degree of

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By

Yanavey A. McCloskey

Thesis Committee:

Lindsey A. Harvell, Ph.D., Chair

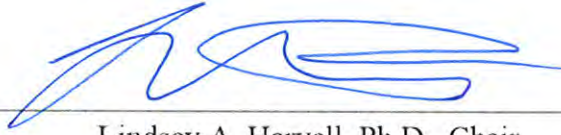
L. Paul Hesselbee, Ph.D.

Grant Corser, Ph.D.

Mortality Salience and Health Promotion

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Thesis Committee



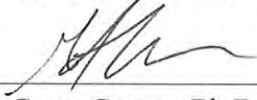
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Lindsey A. Harvell, Ph.D., Chair



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Paul Huselbee, Ph.D.



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Grant Corser, Ph.D.

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Yanavey A. McCloskey

Supervising Professor: Lindsey A. Harvell, Ph.D.

**ABSTRACT**

When faced with health-promoting Public Service Announcements (PSAs), individuals can engage in behaviors congruent to the message or act contradictory to the intention of the announcement. The use of terror management theory as a framework for investigating health promotion can offer valuable insights into the construction and campaign efforts of health-promoting PSAs. This thesis investigates the effects of mortality salience on health-promotion message acceptance. Specifically, this thesis examines the relationship with an individual's self-reported coping style (maladaptive vs. adaptive) and acceptance of an anti-tobacco PSA. Additionally, this thesis explores the efficacy of using the social exclusion appeal as a consequence of tobacco-use in the selected PSA. It should be noted that this quasi-experiment did not produce significant findings.

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## **Chapter 1: Introduction**

Public Service Announcements (PSAs) are advertisements that encourage the interest of society (Hampton, 2012) and can include a variety of topics such as urging individuals to vote (Bowen & Green, 2004), making healthy choices (Peddecord et al., 2008), and obeying laws (Safety and health, 2007). Most often PSAs focus on the promotion of health (Currie, 2010). Anti-tobacco messages qualify as health-promoting PSAs because they encourage smoking cessation leading to better health (Durkin & Wakefield, 2009). However, anti-tobacco PSAs that feature traditional fear appeals can have unintended consequences (Leshner et al., 2010). For instance, they may lead viewers to engage in the very behavior that the advertisement argues against (Leshner et al., 2010). Researchers have found a connection between psychological processing and message acceptance to explain the occurrence of maladaptive and adaptive behaviors when individuals are confronted with health-promotion messages (Ben-Ari & Findler, 2005). After viewing a health-promoting message, such as an anti-tobacco ad, viewers can respond in favor of the ad (adaptive) or behave in a contradictory fashion (maladaptive) and ignore the merit of the message (Arndt et al., 2006; Ben-Ari & Findler, 2005). Using Terror Management Theory (TMT), this thesis attempts to uncover the psychological underpinnings of individuals' adaptive and maladaptive coping styles before they view an anti-tobacco PSA, which will be followed by a tobacco measure to determine message acceptance. This chapter provides a justification for using TMT to analyze anti-tobacco PSAs in the context of health promotion.

### **Terror Management Theory**

Terror Management Theory (TMT) aims to explain the most basic question about the human condition: Why do we do the things we do? In response to this question, Ernest Becker

in his 1973 book, *Denial of Death*, posits that people live to avoid their existential anxiety or the awareness that life is finite. The knowledge that death is pending in juxtaposition with the human will to live creates a great amount of terror and anxiety (Burke, Martens, & Faucher, 2010). In fact attitudes, beliefs and behaviors are all motivated by the unconscious desire to create distance from the cognition of mortality (Pyszczynski et al., 2006). To mitigate the terror or anxiety of death awareness, TMT postulates that human beings create psychological defenses that act to alleviate the existential anxiety of death thoughts (Arndt et al., 1997). However, these psychological defenses can manifest in adaptive and maladaptive ways.

TMT research has begun to lay the foundation for the connection between existential anxiety, health promotions and public service announcements (Ben-Ari & Findler, 2005; Goldenberg & Arndt, 2008). Currently, health communication professionals commonly use fear tactics and other ineffective methods to advocate for concepts of better living (Mackert, 2012). Such advertisements can be in the form of smoking cessation advertisements (Durkin & Wakefield, 2009), healthier eating (Werber, 2007), and a general promotion of healthy behaviors (Ranganathan & Lagarde, 2012). The problem is that health communicators are not always successful when using this method to provide a persuasive message (Yzer et al., 2011). A big problem with health promotion, such as tobacco cessation ads, is that they may inadvertently cause viewers to become aware of their own mortality (Goldenberg & Arndt, 2008). For instance, anti-tobacco PSAs commonly display images of diseased body parts to illustrate the effects of tobacco use on the body (Martin & Kamins, 2010) and these grotesque images may unintentionally lead individuals to experience mortality salience (Goldenberg, 2005). TMT provides an explanation for how people are affected after they become aware of their own mortality and this knowledge can be used to promote healthy behaviors through the

use of PSAs (Arndt, Routledge, & Goldenberg, 2006). According to TMT research, after individuals are reminded of their own death they will behave in fairly predictable ways (Arndt et al., 1997). This knowledge can be used to place messages in effective and strategic ways.

### **Public Service Announcements**

Health-promotion messages have the potential to be effective at persuading people to engage in healthy living. As discussed previously, the vehicle that is commonly used to promote health messages is through PSAs. PSAs are publicly funded and as such they promote the interest of the public; such interest can include health campaigns (Peddecord, et al., 2008), voting (Bowen & Green, 2004), or obeying the law (Safety and health, 2007). PSAs can be formatted for radio, television, films, messages on billboards and other venues likely to be viewed by the public (Hampton, 2012).

Some health communicators place special interest in providing PSAs that advertise the risks associated with the use of tobacco (Dani & Harris, 2005). These scholars argue that tobacco use is especially dangerous in young adults and people with psychiatric illness because it can lead to further substance abuse problems (Leshner et al., 2010). Additionally, tobacco is commonly referred to as a “gateway drug” due to the nicotine additive that is a powerful stimulant and addictive drug (Dani & Harris, 2005). The “gateway drug” term refers to the user’s need to periodically increase their dosage of nicotine to experience the same effect and can lead the user to other drugs (Dani & Harris, 2005). According to a survey administered by the Utah Tobacco Prevention and Control Program, about one in twelve middle school students and one in four high school students have tried tobacco in their lifetime (The Utah Department of Health Tobacco Prevention and Control Program, 2007). The rate of young people using tobacco is



alarming considering that smoking can lead to more hazardous drug use (Durkin & Wakefield, 2009).

To circumvent tobacco use, smoking and other drug use aversion advertisements commonly display the extreme long-term effects of using these substances. They often show the life-threatening and grotesque health affliction that result from using tobacco and other drugs in an attempt to scare people from engaging in these behaviors (Leshner et al., 2010). Researchers observed that there is an opposite or “boomerang effect” from using this practice (Leshner et al., 2010). Some substance abusers have been shown to be more likely to engage in these behaviors after seeing such extreme health effects than to refrain from them (Jessop & Wade, 2008).

This chapter has explained the importance of studying TMT and the interaction with PSAs and mortality salience. The components of TMT (e.g., culture, and mortality salience) is discussed more thoroughly in Chapter Two. After this discussion, this thesis includes a review of literature on TMT, fear appeals, health behaviors and PSAs that will generate hypotheses. In Chapter 3, the method of this thesis will be illustrated. Chapter 4 will contain the results of the study. An in-depth discussion with results and implications to designing PSAs will be made in Chapter 5. The chapter will also discuss the limitations of this thesis and recommend directions for future research.

## **Chapter 2: Literature Review**

Researchers have begun to investigate existential anxiety effects on the acceptance of health promotion in public service announcements (PSAs). When faced with health promoting PSAs, individuals can engage in behaviors congruent to the message or act contradictory to the intention of the announcement. The use of terror management theory (TMT) as a framework for investigating health promotion can offer valuable insights into the construction and campaign efforts of health-promoting PSAs. This chapter will provide a review of existential anxiety and an in-depth discussion of TMT and health promotion. Additionally, this chapter will examine the use of fear appeals to encourage tobacco cessation.

### **Existential Anxiety**

Ernest Becker (1973) argues that human beings are uniquely aware of their own mortality and this knowledge can be cognitively disruptive because of the human will to live. He further describes that this conflict creates an all-encompassing terror that motivates people to behave in certain ways (Becker, 1973). The juxtaposition of living and the inevitability of death is the premise for the study of existential psychology. This type of psychology investigates how humans behave after experiencing existential awareness, which is usually precipitated by a near-death experience or another significant life-altering situation (Koole, Greenberg, & Pyszczynski, 2006).

Most of the early investigators of existential awareness studied this discipline in conjunction with their areas of expertise and saw it as merely introspective because of lacking overt or empirical analysis of the existential process (Koole et al., 2006). However, they shared in the understanding that existential awareness creates a great amount of terror on both the conscious and unconscious psychological levels (Pyszczynski, Greenberg, & Solomon, 1999).

TMT attempts to bridge the existential process with a formal analytical method by investigating the human terror of death and the subsequent behavior using empirical research (Greenberg, et al., 1997). Accordingly, TMT theorists argue that the anxiety about human mortality leads people to behave in fairly predictable ways (Arndt et al., 2006) and will be further discussed in the following sections.

### **Terror Management Theory**

Terror management theorists state that people defend against thoughts of their own death by attempting to foster permanency to transcend their mortality (Koole et al., 2006). TMT explains that when individuals are confronted with the awareness that death is inevitable, they will attempt to make aspects of themselves immortal (Koole et al., 2006). The attempt to foster immortality can be represented either symbolically or literally. Literal immortality is manifested as adherence to the belief of an afterlife or the soul (Burke et al., 2010), and commonly takes practice as belief in a religion or hereafter (Koole et al., 2006). On the other hand, symbolic representation of immortality can appear in many behaviors, such as climbing the ladder of success, having children, or living up to other values that are important to one's society (Greenberg et al., 1997). However, all types of immortality are important in alleviating existential anxiety.

TMT posits that when confronted with thoughts of their own death, individuals will engage in anxiety-buffering techniques to create distance from thoughts of their own mortality (Ben-Ari, Florian, & Mikulincer, 1999). The anxiety buffering mechanism is most clearly shown with the mortality salience (MS) hypothesis (Burke et al., 2010). According to the mortality salience hypothesis, individuals become death aware when they are in some way confronted with death (Burke et al., 2010). In a research setting, death awareness is most commonly achieved by

having individuals write about their own death or view symbolic images of death (Burke et al., 2010). While the method of asking open-ended questions about death is the traditional method of making individuals consciously aware of their own death, some studies show that a subliminal induction of death thoughts can be just as effective (Arndt et al., 1997). In this thesis, employment of the traditional method of asking participants to describe their death is selected.

According to the mortality salience hypothesis, induction of death-awareness will lead individuals to engage in certain psychological defenses to help rid themselves of their newly aware existential anxiety (Burke et al., 2010). TMT describes this process as the dual model of defenses (Pyszczynski et al., 1999). The theory explains that immediately after becoming death aware, individuals will engage in a proximal defense against the awareness of their own mortality (Greenberg et al., 1997). People in this defense consciously avoid death thoughts and engage in logical reasoning to rationalize that their death is far away from their immediate reality (Pyszczynski et al., 1999). In other words, proximal defenses may appear as denying vulnerabilities and a conscious avoidance of thinking about one's own morality (Pyszczynski et al., 1999). As time passes, individuals move away from their initial death awareness, and begin to move toward the distal defense stage and employ unconscious methods to alleviate their existential anxiety.

The distal defense stage is triggered following a passage of time from the induction of death awareness, determined by researchers to be between 7-10 minutes (Burke et al., 2010). In this stage, individuals engage in unconscious defenses against their existential anxiety (Pyszczynski et al., 1999). Distal defenses may seem illogical in how they alleviate the anxiety of one's mortality as they are not always directly tied to death (Pyszczynsk et al., 1999). They can be symbolic representations of the individual's values, usually validated by members in their

group or society (Arndt et al., 1997). According to terror management theorists, these symbolic acts in the distal stage manifest as adherence to the individual's cultural worldview (CWV) or may appear as bolstering of self-esteem (Arndt et al., 1997). A CWV is an individual's constructed reality and acts as an anxiety buffer by providing an explanation for life, including standards for living and values (Arndt et al., 1997). Adherence to one's CWV can be problematic because it causes in-group and out-group dynamics (Arndt et al., 1997). Specifically, individual actions become similar to those in their group and they can unconsciously treat others identified as different from their group unfairly and unjustly (Rosenblatt et al., 1989).

Demonstration of this phenomenon can be seen in the following study. A study conducted by Rosenblatt and colleagues (1989) illustrates how outsiders are treated when they are perceived as different from the dominant culture or way of life. In the study, judges treated in the mortality salience condition handed out harsher bonds to prostitutes than the control (dental pain) condition (Rosenblatt et al, 1989). The same study was replicated with students and the results showed that students in the mortality salience condition also shared the same hostility towards prostitutes, especially if they were already predisposed with negative attitudes toward prostitutes and others that are thought to be living outside of their standards or values (Rosenblatt et al, 1989). The result of this study supports the CWV hypothesis and implies that marginalized members of a given society will experience more prejudicial treatment when members of the group become aware of their own mortality (Rosenblatt et al, 1989). Rosenblatt et al. (1989) also begins to make the connection that psychological underpinnings of mortality awareness can affect an individual's behaviors and choices.

Another anxiety buffering mechanism is self-esteem, which manifests most ardently in the distal stage (Arndt & Schimel, 2003). The anxiety buffering that self-esteem provides is tied

closely to the CWV. Individuals who are achieving the standards or values of their CWV have higher self-esteem than those that do not meet the expectations of their CWV (Arndt & Schimel, 2003). TMT studies conducted on self-esteem found that when self-esteem is bolstered or heightened, individuals resist the mortality salience condition and maintain the integrity of their CWV (Arndt et al. 1997). In this capacity, self-esteem acts as an anxiety buffering mechanism (Arndt & Schimel, 2003). However, self-esteem is problematic when used as a predictor of behavior, because values derived from the CWV may be inadvertently undermined (Arndt & Schimel, 2003), such as in the TMT study on reckless driving (Ben-Ari et al., 1999).

Reckless driving is important to discuss in this thesis because it relates to tobacco use in that both behaviors can arguably be considered risky and both behaviors not only brings harm to the individual but can inflict consequences to society (Ben-ari et al., 1999; Wakefield et al., 2003). Ben-Ari et al. (1999) investigated the effects of self-esteem on reckless driving. Initially, the study assessed the relevancy of driving toward the participants' self-esteem. Drivers who ranked driving as highly important in the mortality salience condition responded more favorably than the control condition to risky driving, demonstrated by either self-reported intentions to drive risky or by their use of high speeds on a driving simulator (Ben-Ari et al., 1999). This study implies that self-esteem can inadvertently lead to undesirable behaviors which may interfere with acceptance of health promoting messages (Ben-Ari et al., 1999).

The psychological process of mortality awareness and ensuing behaviors has great implications for health message design (Goldenberg & Arndt, 2008). However, some TMT research studies suggest that the common anxiety buffering mechanisms e.g. CWV and self-esteem, are unreliable predictors for health message acceptance, preceding an intentional or unintentional induction of mortality salience stemming from anti-tobacco ads (Shehryar & Hunt,

2005). They argue that death awareness caused from viewing the health message affects behaviors and can manifest in maladaptive or adaptive ways (Ben-Ari et al., 1999; Rosenblatt et al., 1989). For this reason some TMT research has begun the investigation of a potential third anxiety buffering mechanism, close personal relationships, as potentially a more effective method of achieving message acceptance (Martin & Kamins, 2010; Mikulincer, Florian, & Hirschberger, 2003).

The acquisition and maintenance of close relationships buffer existential anxiety by offering sociocultural and personal relationship functions (Mikulincer et al., 2003). Close relationships are represented on the basic level as spousal or family units (Mikulincer et al., 2003). These intimate relationships provide the fundamental part of life and allow for more opportunities to reproduce, which is an innate drive for all beings (Oberzaucher & Grammer, 2009). In addition to providing children, close relationships better the odds of survival by the enlistment of family members in obtaining shelter, food and other essential items (Mikulincer et al., 2003).

TMT studies offer two basic hypotheses on close personal relationships. The first hypothesis is that reminders of death will cause more of a willingness to form close relationships and secondly, having close relationships can provide protection from existential anxiety and death awareness (Mikulincer et al., 2003). Additionally, the destruction or separation of close relationships can trigger mortality awareness leading to existential anxiety (Mikulincer et al., 2003). TMT research suggests that anxiety buffering that close personal relationships offers is different to that of self-esteem bolstering and validation of the CWV (Mikulincer et al., 2003). Primarily, the investigation of close relationships determined that induction of death awareness increases motivation for relationship striving (Mikulincer et al., 2002). In other words, the

induction of death thoughts can lead individuals to report a higher esteem for connectedness (Mikulincer et al., 2002).

TMT researchers found that close relationships acted as a buffer for death awareness and decreased the need for CWV to mitigate existential anxiety (Mikulincer et al., 2002). To make this determination, researchers primed study participants in the experimental group with the commitment salience condition and the mortality salience condition (Mikulincer et al., 2002). They found that the interaction of commitment and mortality salience caused participants to be more generous with their responses on social transgressions (Mikulincer et al., 2002). The results indicate that the standards of one's CWV could be violated so long as close relationships were made salient. This finding demonstrates that CWV had less anxiety buffering power than close relationships when death awareness was made salient (Mikulincer et al., 2002).

The third influential study that was conducted on close relationships determined that the absence of close relationships triggered death thought accessibility and lead to a heightened awareness of mortality (Mikulincer et al., 2002). This study was conducted by asking participants in the experimental condition to think about problems in their current romantic relationship and the control group was primed with thinking about a neutral TV program (Mikulincer et al., 2002). Participants were then asked to complete the death thought accessibility word completion task (Mikulincer et al., 2002). The death thought accessibility word completion task requires participants to complete a series of word stems (Arndt et al., 1997). The list is coded by researchers for death-related words, in an effort to determine if participants are indeed primed with the mortality-salience manipulation (Arndt et al., 1997). The results indicated that the group primed with thinking about problems in their current relationship showed more death-related words than those in the control condition (Mikulincer et al., 2002),



demonstrating that close personal relationships is important in buffering existential anxiety (Mikulincer et al., 2003).

Using the results of the Mikulincer et al. (2002; 2003) studies, this thesis suggests the use of social exclusion or the lack of close personal relationships to garner favorable reactions with anti-tobacco messages in PSAs. The consequence of social exclusion in anti-tobacco messages is powerful and may meet the intended purpose of persuading individuals to stay away from tobacco use in the short and long term (Martin & Kamins, 2010). Studies illustrating the effective use of social exclusion as a consequence in anti-tobacco ads will be shared later in this thesis. It is prudent to first describe a history of fear appeals and anti-tobacco campaigns. After this discussion, an overview of health promotion in conjunction with TMT will be provided.

### **Tobacco and Fear Appeals**

Tobacco is the leading cause of preventable death worldwide (The foundation for a smoke free America, 1995; The Utah Department of Health Tobacco Prevention and Control Program, 2007). More death is attributed to tobacco than car accidents, AIDS, alcohol, and homicides combined (The foundation for a smoke free America, 1995). The use of tobacco can cause serious health effects such as lung cancer, emphysema and heart disease (Hamalainen, 2011). Yet, tobacco is a legal drug for adults. Furthermore, many nations including America, allow big tobacco companies to continue advertising this harmful drug. Tobacco companies spend upwards of 50 billion dollars a year in advertising to attract new users and to encourage current tobacco users to continue with their habit (The foundation for a smoke free America, 1995).

In recent years, government and other non-profit agencies are fighting back with public service announcements designed to deter tobacco use (Reynolds, 1990). Most notably, an

increase in anti-tobacco advertisements occurred after the Attorney Generals' Master Settlement with the tobacco industry reached a favorable conclusion of cash awards for the States (Wakefield et al., 2003). The settlement money caused an increase in the number of statewide anti-tobacco campaigns and some were found to be effective at reducing the numbers of reported tobacco users (Cohen, Shumate, & Gold, 2007). States that saw the most success from their statewide anti-tobacco campaigns were Arizona, California, Florida and Massachusetts (Institute of Medicine and National Research Council, 2000). The success of these anti-tobacco campaigns lead researchers to understand the importance of large-scale and heavily-funded tobacco cessation advertisements (Cohen et al, 2007). Additionally, researchers started to investigate the thematic contents of anti-tobacco PSAs (Cohen et al., 2007). They wanted to understand the specific components of the successful ads to further the success in a strategic manner (Cohen et al., 2007; Reynolds, 1990).

Research has found that fear appeals are used frequently in anti-tobacco messages (Beaudoin, 2002; Leshner et al., 2010). This finding stems from one of the first studies to employ a comprehensive approach to identify themes and appeals in anti-tobacco PSAs and was conducted by Beaudoin (2002). The study categorized several themes and appeals using 197 televised public service announcements published between 1991-1999 (Beaudoin, 2002). The themes found from this study are industry manipulation, second-hand smoke, addiction, cessation, youth, and romantic rejection (Beaudoin, 2002). The study also identified consequences such as short-term, long-term, social and health consequences (Beaudoin, 2002). The following appeals were also identified: humor, fear, dirtiness, sports/adventure, and sociability (Beaudoin, 2002). The PSAs that were investigated seemed to use humor and sociability appeals when targeting youth (Beaudoin, 2002). Additionally, social and short-term

health consequences were used for PSAs designed to target youth populations (Beaudoin, 2002). The PSAs targeted towards adults heavily used fear appeals and long-term health consequences (Beaudoin, 2002). The implication from this study asserts that fear appeals are used commonly in advertisements that are intended for adults who are legal tobacco users. However, a review of the employment of fear appeals in anti-drug campaigns indicates that this practice is not limited to just the adult audience.

Arguably the first use of fear appeals to deter kids from using drugs and making bad choices began in the 1970s with a program called “Scared Straight” (Feinstein, 2005). This program was implemented in New Jersey with groups of juvenile delinquents (Feinstein, 2005). The premise of the program was to introduce troubled youth to prisoners in a maximum security prison (Feinstein, 2005). The prisoner and the maximum security facility were used to scare the kids from further engaging in their rebellious ways (Feinstein, 2005). This program was initially found to be successful with a high rate of youth disengaging from their previous drug use and delinquent ways (Feinstein, 2005). Unfortunately, later research found there was a high rate of recidivism for those that participated in the program (Feinstein, 2005). Other youth-based anti-drug programs also used scare tactics and fear appeals.

DARE was another drug prevention program in the 1990s designed to scare youth from using drugs (Alcoholism and drug abuse weekly, 2003). The program was funded publically and targeted students in the fifth and sixth grade with demonstrations announcing the extreme harmful effects of using drugs (Alcoholism and drug abuse weekly, 2003). DARE employed graphic images of health effects to scare youth from using drugs (Alcoholism and drug abuse weekly, 2003). Unfortunately, this program was also found to be ineffective at keeping youth from using drugs (Alcoholism and drug abuse weekly, 2003).

A recent example of the use of fear appeals can be seen with the “Tips from a Smoker” campaign produced by the Center for Disease Control (Koch, 2012). This campaign reportedly cost \$54 million, which is miniscule when compared to the billions of dollars that the tobacco industry forks over for their tobacco advertisements (Koch, 2012; The foundation for a smoke free America, 1995). Additionally, the price tag may be worth the cost because the use of tobacco is associated with over \$50 billion in losses annually (The foundation for a smoke free America, 1995). The billions in losses stem from the loss of productivity and subsequent healthcare cost that result from long-term use and exposure to tobacco use (The foundation for a smoke free America, 1995). Paramount to the loss in money is the loss of lives that can be attributed to tobacco use. It is estimated that over 400,000 lives are lost annually from tobacco use – about 1200 per day (The foundation for a smoke free America, 1995).

The Center for Disease Control graphic ads are heralded by some as extremely effective and will reduce the number of tobacco users (Alday, 2012). They argue that the use of graphic images and messages appeal to an individual’s fear and can cause them to avoid meeting the same fate by following the advice of the ad (Alday, 2012). The campaign elicits fear by depicting former smokers giving advice of how to live with their disfigurement caused from using tobacco products (Koch, 2012). One example of this ad campaign is the story of Annette, a former smoker from New York, who was diagnosed with lung cancer at 49 years old (Center for Disease Control, 2012). In the PSA, Annette is photographed from the back revealing a huge scar that starts from her shoulder blade and ends at the middle of her back (Center for Disease Control, 2012). The depiction of her deformity is caused by lung cancer because of her smoking habit is meant to trigger fear (Center for Disease Control, 2012). Another PSA ad from the “Tips from a former Smoker” campaign that also uses fear appeal shares Brandon’s story (Center for Disease

Control, 2012). Brandon is another former smoker who suffered from Buerger's disease and had to get his legs amputated (Center for Disease Control, 2012). The print PSA illustrates Brandon's need for prosthetic legs with the following statement "allow extra time to put on your legs" (Center for Disease Control, 2012). Again this ad relies on the use of fear appeals to encourage smoking cessation (Center for Disease Control, 2012). The graphic image of Brandon putting on his prosthetic should make smokers think twice about continuing their habit and possibly discouraging a non-smoker from picking up the habit (Center for Disease Control, 2012). Those in support of the campaign argue the graphic nature of the PSAs will discourage people from using tobacco because of the fear generated (Alday, 2012). They state that graphic images catch the attention of the viewer and cause them to rethink or stay away from tobacco use (Alday, 2012; Koch, 2012).

However, some recent studies on fear appeals make a different argument. These studies found that the use of fear appeals may be counterproductive and may actually cause users to ignore the message and turn to tobacco with more enthusiasm (Jessop & Wade, 2008). Specifically, a recent study on fear appeals found that use of disgust to evoke a fear appeal in anti-tobacco PSAs may be the problem (Leshner, Bolls, & Thomas, 2009). According to a news article, anti-tobacco ads should either show fear appeal or disgust but not both (University of Missouri-Columbia, 2008). The study conducted by Leshner et al., (2009) found that anti-tobacco ads featuring fear appeals without using disgust were more successful at gaining message acceptance. The study found that participants were less willing to encode anti-tobacco PSAs that had both the feature of fear and disgust (Leshner et al., 2009). But ads that only used fear or a moderate level of disgust showed that participants are more willing to encode the message (Leshner et al., 2009).

Another study reinforced the idea that disgust could hamper the acceptance of an anti-tobacco PSA message (Leshner et al., 2010). This study found that fear appeals did arouse an individual's attention to the ad (Leshner et al., 2010). Specifically, fear appeals can cause the viewer to be aware of the message being presented (Leshner et al., 2010). The problem arrives with mixing in the disgust element to high fear appeal messages (Leshner et al., 2010). Low fear appeal messages and elements of disgust also showed slower reaction response from participants in the study (Leshner et al., 2010). These findings suggest that fear appeals and disgust are not compatible when used in an anti-tobacco PSA.

In addition to the features of disgust affecting fear appeals, other studies make the suggestion that the levels of fear appeals used in anti-tobacco PSAs can affect message acceptance. The previous argument makes the assertion that the use of disgust and fear overloads the cognitive process required to encode the message, which is comparable to the Janis and Feshbach (1954) study on the curvilinear model on fear appeal and persuasions. In their study Janis and Feshbach (1954) concluded that a moderate use of fear in a given message can lead to an effective persuasive message design. They found this by investigating varying levels of fear (Janis & Feshbach, 1954). They argue that a minimal use of fear is ineffective but using the maximum amount of fear in a health promoting ad also produces less persuasion (Janis & Feshbach, 1954). The curvilinear relationship illustrates that minimum and maximum use of fear appeals results in minimal persuasion, however, the moderate use fear appeals can lead to maximum persuasion power (Janis & Feshbach, 1954). Level of fear appeals and persuasion power is an important connection and continues to have implications in anti-drug advertisements.

**Anti-Tobacco PSAs and TMT**

To achieve the fear appeal dynamic, anti-tobacco PSAs commonly depict the extreme health effects from using tobacco and researchers are finding this effort to be ineffective (Leshner et al., 2010). Researchers are finding a boomerang effect caused by images of grotesque health effects, and consequently people to continue their use of tobacco (Leshner et al., 2010). An example of such advertising is the anti-spit tobacco advertisement that shows the disgusting effects of chewing tobacco by depiction of yellow teeth and swollen gums (Reynolds, 1990). According to a study conducted on fear appeals, showing extreme health consequences had minimal influence at getting individuals to avoid using tobacco in the long term but had a small effect in the short term (Leshner et al., 2010). TMT supports this finding because the consequence of ill health may not be enough to challenge an individual CWV that may be heavily associated with smoking (Hansen, Winzeler, & Topolinski, 2010; Pyszczynski, Greenberg, & Solomon, 1999).

Other TMT studies have focused on binge drinking and health promotion using fear appeals but researchers have found congruent results to the aforementioned fear appeals study on anti-tobacco (Jessop & Wade, 2008; Leshner et al, 2010). The study on binge drinking found that as individuals were confronted with information showing the harmful nature of drinking in excess they were more inclined to engage in heavy drinking than to abstain because the CWV or identity of the participants were deeply rooted in heavy drinking despite it's risky nature (Jessop & Wade, 2008). The result of Jessop and Wade (2008) demonstrates the problem with using health consequences to encourage health choices. Health messages may inadvertently turn viewers off by putting down their identity (Jessop & Wade, 2008; Leshner et al., 2010). In addition to CWV or identity, self-esteem may also affect behavior, such as reckless driving.

The aforementioned studies reaffirm that a viewer's psyche is extremely complex and therefore, achieving message acceptance on the topic of health promotion using the traditional methods may be problematic and can vary greatly depending on the individual's mental state. Terror management theorists suggest that health communicators ought to shift focus from the use of fear appeals in advertisements to an appeal on social exclusion as a consequence of engaging in unhealthy living (Martin & Kamins, 2010). This shift is argued as effective in the short and long term with regards to keeping people from using tobacco (Martin & Kamins, 2010). This thesis will use PSAs with a social exclusion appeal to deter the use of tobacco in the experimental design. The argument is that PSAs with a focus on social exclusion as a consequence of using tobacco should have the intended effect of deterring tobacco use in the distal stage. The following section will provide an overview of health promotion studies using the TMT framework. After, a discussion of close personal relationships will ensue, and the potential successes of using social exclusion to encourage health message acceptance will conclude the chapter.

### **Health Promotion and TMT**

The investigation of health promotion using TMT research methodology began in the last two decades leaving room for continued discovery. Some notable TMT studies with references to healthy living include topics on breast self-examination (Arndt, Routledge, & Goldenberg, 2006), reckless driving (Ben-Ari et al., 1999), binge drinking (Jessop & Wade, 2008) and tobacco (Hansen et al., 2010). However, much is left to be examined. Therefore, this thesis will build on the aforementioned TMT health promotion research.

The primary step to understanding TMT and health promotion is to uncover the problem that arises when individuals are reminded of the physical body. The physical body acts as a



constant reminder of one's mortality and shows that human beings are really just animals (Goldenberg, 2005). For instance, human beings defecate and reproduce just like animals do. The human body is particularly problematic for women because they are more connected to reproduction than men (Landau, et al., 2006). Women menstruate, birth babies, and nurse babies and as such they are a constant reminder of "creatureliness," a TMT term that describes human beings close to their animal nature (Goldenberg, 2005).

"Creatureliness" can affect many behaviors. For instance, it can hamper breast cancer screening in women (Goldenberg et al., 2008), encourage severe diet restriction (Landau, et al., 2006) and influence individuals to negate the use of sunscreen in order to achieve tan golden skin (Goldenberg, 2005). In the Goldenberg et al. (2008) study, it was found that women participants who were primed with "creatureliness" were less inclined to conduct breast self-examinations than those who were primed with human uniqueness in the mortality salient condition (Goldenberg et al., 2008). Human uniqueness describes human beings as distinctly different from animals (Goldenberg et al., 2008). So, in the human uniqueness condition participants were primed with information stating that humans are unique and essentially superiors to animals (Goldenberg et al., 2008). These findings have great implications for health promotion and the juxtaposition of human psychological underpinnings. The results of the study are consistent with TMT in explaining that people are motivated by an unconscious need to distance themselves from "creatureliness" and derive symbolic meaning for actions that are not in accordance to cultural norms (Goldenberg, 2005; Goldenberg et al., 2008). Another TMT study found that women may be more willing to engage in breast self-examination if the act is transformed from touch of the body to a proactive attempt to detect cancer and promote women's health

(Goldenberg, 2005). Transforming healthy behaviors into a symbolic meaning is just one of the few methods of promoting health that terror management theorists have examined.

TMT researchers have also investigated health optimism and coping behaviors as potential moderators for predicting proximal health responses after people have been primed with death awareness (Arndt et al., 2006). The Arndt et al. (2006) study can be considered a landmark case for understanding proximal reaction in relation to health promotion after individuals are primed with death thoughts (Arndt et al., 2006). The results of the Arndt et al. (2006) study adds tremendously to TMT research because most TMT studies focus on the distal defenses (7-10 minutes after the mortality-salience manipulation) and employ self-esteem as a moderator (Ben-Ari & Findler, 2005; Greenberg et al., 1986). However, self-esteem has been found to be an ineffective moderator immediately following death-thought induction when participants are in the proximal defense stage (Ben-Ari & Findler, 2005). Arguably, proximal responses to health messages are difficult to predict because they can manifest in maladaptive and adaptive ways and can vary per individual (Arndt et al., 2006). TMT research has indicated that individual coping style may have a relationship with predicting the potential adaptive and the maladaptive health behaviors of individuals (Arndt et al., 2006). Coping style is not a good predictor for behaviors in the distal defenses stage, because death thoughts have moved from focal attention to the unconscious realm and manifest through the filter of CWV and self-esteem (Arndt et al., 2006).

As was previously mentioned, the study authored by Arndt et al., (2006) on coping style and health optimism as possible predictors to health behavior in the proximal defense stage following a death awareness manipulation, gives insight to why people may respond favorably to health messages. They found conclusively, when testing their proximal hypothesis, that

participants who rated their coping style as adaptive or productive on the COPE scale also scored higher in the health promotion scale following the mortality salience condition (Arndt et al., 2006).

This study also found a correlation with health optimism and breast self-examination (Arndt et al., 2006). Health optimism is suggested as an indicator to engage in an actual healthy behavior, but coping style relates with intentions to promote health (Arndt et al., 2006). The findings suggest that adaptive coping style may be extremely important in determining reception of health messages. The results from Arndt et al., (2006) suggests that adaptive coping style correlates with high health optimism and is a predictor of breast self-examination, which is representative of health promoting behavior. For this reason the construction of this thesis will follow Arndt et al., (2006) experimental design. This thesis will assess adaptive vs. maladaptive coping styles leading to the argument that this may be an indicator for acceptance of anti-tobacco messages, immediately following death-thought induction.

As noted by the previous studies (Arndt et al., 2006), self-esteem and CWV are unreliable predictors of behavioral responses in the proximal defenses stage, mainly due to the transition of death thought awareness from conscious to unconscious awareness (Arndt et al., 1997, Burke et al., 2010). As mentioned previously, age has been investigated as a potential predictor of message acceptance while in the proximal stage (Ben-Ari & Findler, 2005). The problem is that health promotion messages will need to differ significantly, in order to be effective to various age groups, a highly expensive and labor-intensive scenario (Ben-Ari & Findler, 2005). The Arndt et al. (2006) study suggestion of using coping styles to better predict message acceptance in the proximal stage will be implemented in this thesis.

In the Arndt et al. (2006) experiment, they predicted that individuals with an adaptive coping style would respond with a higher intention of engaging in health-promoting behaviors, by initiating a preventative health exam or contacting a specialist for a current health problem (Arndt et al, 2006). The study design began with participants completing the Cope Measure. This was followed by the traditional TMT method of inducing death thought awareness by answering these questions: “Please briefly describe the emotions that the thought of your own death arouses in you?” and “Jot down, as specifically as you can, what you think will happen to you physically as you die and once you are physically dead” (Arndt et al, 2006). Conversely, the control group answered these questions “Please briefly describe the emotions that the thought of dental pain arouses in you?” and “Jot down, as specifically as you can, what you think will happen to you physically as you experience dental pain?.” At this point, half of the participants went on to complete the dependent measure, the Krantz measure of Health Optimism, and the other half completed some distractor tasks before moving on to the Krantz measure (Arndt et al, 2006). The researchers found significant results indicating that there is a positive relationship with adaptive coping style and intention to perform healthy behaviors among death salient individuals (Arndt et al, 2006). Using the previous study as a guide, this thesis makes the argument that individuals who would normally cope with a stressful situation in an adaptive or maladaptive style will likewise respond in a favorable manner after they view an anti-tobacco ad. Specifically, they will be more receptive of the health-promoting message, within the anti-tobacco ad, than the non-death salient, control group. Thus, it is predicted:

Hypothesis 1: Death-salient individuals engaging in proximal defenses with an adaptive coping style will be more receptive of the anti-tobacco social exclusion

message than when compared with non-death salient participants engaging in proximal defenses.

In addition to examining the proximal response to health promotion, it is also important to investigate how individuals will respond in the distal stage. Many TMT studies focus on the distal effects following a mortality salience prime because the accessibility of death thoughts moves quickly from focal attention and transitions to the unconscious realm of the human psyche (Arndt et al., 1997). A TMT study conducted by Ben-Ari and Findler (2005) found that age and self-esteem might affect responses to health promotion after death thoughts are primed. The study found that participants in specific age ranges responded similarly when asked about their willingness to engage in health behaviors (Ben-Ari & Findler, 2005). In the proximal defense stage, it was determined that young adults (18-35 years old) and middle-aged adults (36-50 years old) were more willing than their control group counterparts to engage in health promoting behaviors after being induced with mortality salience (Ben-Ari & Findler, 2005). The older adult group (51-65 years old) in the proximal defense stage differed from the young and middle-aged adults in their response to health promotion after they underwent the mortality salience condition (Ben-Ari & Findler, 2005). The older adults did not show an increase in willingness to engage in health-promoting behaviors after they were inducted with death-thoughts; they did not differ from their counterparts in the control group (Ben-Ari & Findler, 2005).

The same study was replicated with a delay after the mortality salience induction to determine the effects in the distal defense stage (Ben-Ari & Findler, 2005). In the distal defense stage, young adults did not show an effect from the mortality salience induction (Ben-Ari & Findler, 2005). They were not more likely to engage in health promoting behaviors than the control group (Ben-Ari & Findler, 2005). However, middle-aged adults did show more

willingness to promote healthy behaviors (Ben-Ari & Findler, 2005). In older adults, it was found that individuals with higher self-esteem, reported on the Rosenberg scale, were less affected and not more willing to participate in health-promoting behaviors (Ben-Ari & Findler, 2005). Conversely, older adults with reported low self-esteem were affected by mortality salience and showed an increase in willingness to engage in health promoting behaviors (Ben-Ari & Findler, 2005).

The Ben-Ari and Findler (2005) study uncovered significant implications for the divergent ways in which individuals respond to health promotion. A form of health promotion commonly used in American society is that of anti-tobacco messages in public service announcements. The following section will explain the need to use public service announcements to promote tobacco cessation in an effort to combat the tobacco company and their marketing tactics. Additionally, the next section will describe the harmful effects of tobacco and the use fear appeals to deter tobacco use.

### **Close Relationships/ Social Exclusion and Anti-tobacco PSAs**

According to some TMT experts, close relationships act as an anxiety buffering mechanism in the distal defense stage; similar to that of CWV validation and self-esteem bolstering (Mikulincer et al., 2003). Close relationships give meaning and studies have shown that when primed with close relationships individuals will resist the effect of the mortality salience condition (Mikulincer et al., 2002). Additionally, the acquisition/maintenance of close relationships can cause individuals to disregard the values that are normally considered highly important in their culture (Mikulincer et al, 2003). Furthermore the absence of close relationships can induce death-thought accessibility (Mikulincer et al., 2002) and lead to social death; a form of death that can be just as powerful as physical death (Florian & Mikulincer, 1997). For this

reason, some TMT studies have begun to investigate the use of social exclusion to discourage risky drinking (Jessop & Wade, 2008; Shehryar & Hunt, 2005) and tobacco use (Martin & Kamins, 2010). These studies rely on the premise that the risk of social exclusion may deter potential acts against the social mores of binge drinking and tobacco use (Jessop & Wade, 2008; Martin & Kamins, 2010; Shehryar & Hunt, 2005).

The previous studies attempted to explain why the traditional method to convey health messages through the use of health consequences to elicit a fear appeal may trigger maladaptive responses from viewers, demonstrating the need to shift to the use of social exclusion in tobacco cessation ads (Jessop & Wade, 2008; Martin & Kamins, 2010; Shehryar & Hunt, 2005). To understand why fear appeals using health consequences can elicit maladaptive responses in tobacco ads, one must become familiar with the psyche's reaction to the human body.

According to TMT research, the human body acts as reminder of mortality, especially when displayed in a grotesque manner (Goldenberg, 2005). When individuals are confronted with a health-promotion message displaying the possible long-term effect of drug use, depicting deformities in the human body, they immediately engage in some form of proximal defense (Goldenberg & Arndt, 2008). While in the proximal defense stage, viewers can accept the message as authentic or dispute the claims and deny their vulnerabilities (Arndt, Routledge, & Goldenberg, 2006). Essentially, maladaptive responses may manifest by a conscious effort to discredit the message or by denying the potential of death because of youth or strength (Arndt et al., 2006). TMT research has also demonstrated the possibility of adaptive and maladaptive responses to health messages occurring when the awareness of death thoughts are moved to the unconscious distal defense stage (Ben-Ari & Findler, 2005). In these situations, self-esteem and CWV plays a major role in moderating the potential response to the message (Ben-Ari & Findler,

2005), making it difficult to predict message acceptance among a wide range of people (Goldenberg & Arndt, 2008). For this reason, some TMT scholars have begun to investigate the idea of removing fear appeals focused on the human body in health messages, to gain message acceptance among different types of people (Goldenberg & Arndt, 2008; Martin & Kamins, 2010; Shehryar & Hunt, 2005). They argue that the consequence of social exclusion may help to gain better message acceptance (Goldenberg & Arndt, 2008; Martin & Kamins, 2010; Shehryar & Hunt, 2005).

To determine the effects of threatening consequences in health messages, a TMT study investigated individual responses after they viewed messages illustrating the effects of alcohol use (Shehryar & Hunt, 2005). The study used two distinctly different messages to elicit fear; one generating a fear appeal with the consequence of death and the other focused on the social consequences by describing the consequence of serious bodily harm and arrest (Shehryar & Hunt, 2005). The researchers found that among individuals who included alcohol use in their CWV, using death to elicit fear appeal caused them to reject socially acceptable attitudes about drinking (Shehryar & Hunt, 2005). However, individuals who also ranked alcohol use as important in their CWV, but viewed the message that displayed serious injury or arrest, were more willing to accept the message on drinking and driving (Shehryar & Hunt, 2005). This study demonstrates that social consequences may be extremely important in determining health message acceptance.

To investigate the interaction of social exclusion and message acceptance, Martin and Kamins (2010) conducted an anti-smoking study comparing health-consequence-related PSAs with social-consequence PSAs. The researchers assessed self-esteem as a potential moderator in the acceptance of anti-tobacco PSAs (Martin & Kamins, 2010). Using current smokers as



participants, the researchers found that viewers of the social exclusion PSA showed more intentions to reduce their tobacco use in the short and long term than compared to those that viewed the health consequence PSAs (Martin & Kamins, 2010). This occurred even among participants who reported that tobacco use was highly relevant to their self-esteem (Martin & Kamins, 2010). As suggested by the previous studies on social exclusion, the second and final hypothesis in this thesis attempts to address social exclusion and anti-tobacco message acceptance. Thus, it is predicted:

Hypothesis 2: Death-aware participants engaging in the distal defense stage will be more receptive of the anti-tobacco social exclusion PSAs, when compared to non-death-aware participants engaging in the distal defense stage.

### **Chapter 3: Method**

This thesis investigates the effects of mortality salience on health-promotion message acceptance. Specifically, this thesis will examine the relationship with an individual's self-reported coping style (maladaptive vs. adaptive) and acceptance of an anti-tobacco public service announcement. Additionally, this thesis will explore the efficacy of using the social exclusion appeal as a consequence of using tobacco with the selected public service announcement. This chapter will explain the sample selection, procedure, measures, and describe the analyses used to test the hypotheses.

For H1, the independent variables are: coping style (adaptive vs. maladaptive), proximal defenses and mortality salience. The dependent variable is acceptance of the health promotion message using a tobacco measure adapted from a previous study. For H2, the independent variable is the distal defense stage and mortality salience; the dependent variable is reception of the anti-tobacco message using the same measure from H1.

#### **Sample Selection**

Participants were students recruited from Southern Utah University (SUU) using a convenience sampling technique. Advertisement for the study was placed on the appropriate SUU mandated bulletin board and several SUU professors shared the availability of this study to students attending their classes. Additionally, a few Professors/Lecturers offered extra credit to their students for participating in research projects such as this thesis. All SUU students were invited to participate in this study; none were excluded.

SUU is mid-size Western University located in Cedar City, Utah. The following provides a brief overview of the demographics at SUU. In the fall of 2011 there were a total of 7,750 students enrolled at SUU (Southern Utah University, 2013). The demographic disposition of the

student population from the fall 2011 was 44.2% male and 55.8% female (Southern Utah University, 2013). The breakdown of the student age is 22.2%- 18 years old, 21.9%- 19 to 20 years old, 18%- 21 to 22 years old, 10.6%- 23 to 24, 11.5 % 25 to 29 years old, 5.4% 30 to 34 years old, 3.1 %- 35- to 39 years old and 7.2 % of students were over the age of 39 years old (Southern Utah University, 2013). The race of students attending school that semester were 1.4 % American Indian, 3.2% Asian, 1.4 % African American, 4.3% Hispanic, 1.2% Pacific Islander, 1.5% Other, 85.8% White and 1.2% responded as unspecified (Southern Utah University, 2013).

Data was collected from 177 students who participated in this thesis project. Twelve students met in a designated lab to complete the survey. The remaining 165 students completed the survey while in their Communication 1010, 3020, and 4010 classes.

After the data was cleaned for outliers and surveys with missing data were removed (discussed in Ch. 4), the total sample analyzed was N=115. Out of the 115 sample size, there were 49 males and 66 females. The average age of the participants was 21.48 years old, with a minimum of 18 years old to a maximum of 51 years old and standard deviation of 4.829. The comparison of age based on percentages between this thesis sample and the SUU population from fall 2011 (see Table 1) demonstrates that the sample shared a few similar age characteristics to the SUU population.

Table 1

*Age of Sample Participants and SUU Students during Fall 2011*

	<b>SUU Student Population Fall 2011 (percentage)</b>	<b>Thesis Sample (percentage)</b>
<b>Age</b>		
18	22.2%	16.5%
19-20	21.9%	40.9%

21-22	18%	23.5%
23-24	10.6%	3.4%
25-29	11.5%	11.3%
30-34	5.4%	--
35-39	3.1%	3.5%
Over 39	7.2%	.9%
Total	100%	100%

The survey for this thesis asked students to identify with the following races: White/Caucasian, African American, Hispanic, Native American, Pacific Islander or Other. The results indicate that the overwhelming majority of students were self-reported as belonging to the White race,  $n=101$  or 87.8%. Two students (1.7%) reported membership with the Hispanic race and two (1.7%) claimed Native American race. Ten students (8.7%) self-reported as Others, when asked about their race. The racial demographic of this sample also shares some similarities to the SUU population from the fall 2011 term (Southern Utah University, 2013).

Although the sample of students may share some similar characteristics as the SUU student population, they were selected for this study based on their availability and willingness to participate. No special research criteria were employed to select the sample.

The use of a stratified random sampling technique to select participants would have surely produced more accurate results and any significant findings could be inferred to the population at large. As it stands, the use of a convenience-sampling method makes it difficult to infer any possible significant findings to the population. Also, there is a possibility that the sample is skewed.

### **Procedure**

This thesis employed a 2 (mortality salient vs. non mortality salience) x 2 (proximal vs. distal) x 2 (maladaptive vs. adaptive coping style) experimental design. Data collection was conducted face-to-face with participants that were placed into one of four conditions. Conditions

1 (proximal) and 2 (distal) were the death salient conditions. Conversely, condition 3 (proximal) and 4 (distal) were the control, non-death salient/dental pain, groups. This study was conducted using a paper survey.

Prior to soliciting for information, all participants were notified of the informed consent and asked to sign the document; the students were also told that participation is completely voluntary. The researcher was present during the entire duration of data collection to attempt a controlled setting. Admittedly, the addition of research assistants would have greatly helped ensure proper time management with the larger groups. Rules were explained after the informed consent was discussed, clarifying that students cannot use electronic devices, or engage in other activities that would distract from the survey. Additionally, the time that participants began and finished the survey was monitored to ensure accuracy with the defense stages (proximal vs. distal).

Participants were assigned into one of the four conditions in an arbitrary manner, by the researcher assigning participants in a consecutive order to each condition until it was full. Proper randomization was not used when assigning conditions, making this a quasi-experiment and not a true experiment. Additionally, the omission of random assignment creates the possibility of confounding variables and the results can't conclusively state that the independent variable truly has an effect on the dependent variable, as extraneous variables were not controlled through randomization (La Caze, 2013).

After assignment into a condition, participants' were asked to complete the COPE measure to assess their adaptive and maladaptive attitudes when faced with stress. The COPE measure was introduced before the mortality salience/dental pain manipulation, because this thesis is concerned with determining individual coping styles, adaptive vs. maladaptive, before

they become influenced by any other factors. Coping style may be a predictor of anti-tobacco message acceptance. After completing the COPE instrument, participants in conditions 1 and 2 engaged in the mortality-salience manipulation by answering the following question: “Please briefly describe the emotions that the thought of your own death arouses in you” and “Jot down, as specifically as you can, what you think will happen to you physically as you die and once you are physically dead.” It is unknown whether the death salient manipulation will have lasting harm on participants, however, the induction of death-thoughts with the “death questions” is a common method used in TMT studies (Arndt et al., 1997; Burke et al., 2010; Goldenberg & Arndt, 2008; Harvell, 2012; Rosenblatt et al., 1989).

Participants in conditions 3 and 4 answered the following question instead of the death salient question: “Please briefly describe the emotions that the thought of dental pain arouses in you” and “Jot down, as specifically as you can, what you think will happen to you physically as you experience dental pain.” The “dental pain” control question was used in this quasi-experiment instead of the lesser used “exam control” question (Burke et al., 2010) to avoid the possibility of further confounding the results with the possibility of some students interpreting exam taking with a causal link to social pressure/ failure.

Immediately after the mortality salience/dental pain manipulation, participants in conditions 1 and 3 (proximal groups) completed a word-stem exercise to determine if the mortality-salience manipulation worked. Burke et al., (2010) synthesized a variety of mortality salient research and found that the death word-stem exercise was used prevalently to determine if the mortality-awareness induction was effective. The exercise requires participants to complete a list of 25 words that are missing letters (Arndt et al., 1997). Out of the 25 words, 6 words were

used to confirm that the death salience manipulation had induced death-thought awareness: buried, dead, grave, killed, skull, and coffin (Arndt et al., 1997).

Alternatively, after the mortality salience/dental pain manipulation, the participants in conditions 2 and 4 (distal groups) engaged in a distracter task by reading an excerpt and completing a word search exercise. The first distracter task asked participants to read a brief excerpt and answer some questions about the selected reading. The next distracter task was a word find puzzle. Both of the distracter tasks were chosen because combined they lasted approximately 8 minutes and were simple to complete. Additionally, the selected reading was used in previous TMT studies (Harvell, 2012; Rosenblatt et al.). After finishing the distracter task, participants were theoretically transitioned into the distal defense stage (Burke et al., 2010). To test participants' death-thought accessibility while in the distal defense stage, they engaged in the same word-stem exercise/manipulation check as the participants in conditions 1 and 3.

After completing the word stem exercise, participants in all of the conditions viewed the selected anti-tobacco message with a social exclusion fear appeal. The 31-second anti-tobacco message was shown via YouTube. The clip displayed a social setting, similar to a party or club environment, with no dialogue just music. The clip begins with a boy spotting a cute girl from across the room. She sees him as well and they start to exchange glances. Finally, the boy works up the courage to approach the girl, leading to the idea that they may start a romantic connection. When the boy reaches the girl he bends closer to her, presumably talk to her with the loud music playing in the background. At this point, viewers can witness the boy scrunching up his nose in disgust, as he quickly walks away. The clip then shows the girl with a confused look, sitting alone holding a cigarette. The entire clip contains no dialogue, but viewers can easily assume the intentions and reaction of the actors by their non-verbal gestures. At the end of the clip, the

following message pans across the screen “If you smoke, you stink” further cementing the anti-tobacco message (Smokefreevideos, 2013).

After viewing the message, participants provided responses on the tobacco measure to assess their reception of the anti-tobacco message. At the conclusion of the survey, participants were thanked for their involvement in the study and told they were free to leave.

## Measures

**Cope Scale.** The Cope measure consists of 60 items and measures how individuals will respond when confronted with a stressful situation (Carver, Scheier, & Weintraub, 1989). The items can be answered with the following options for each statement: 1 = I usually don't do this at all, 2 = I usually do this a little bit, 3 = I usually do this a medium amount, and 4 = I usually do this a lot (Carter et. al., 1989). The answers from each statement were grouped in to maladaptive and adaptive categories using the same method suggested by Carter (1989). The assessment of whether participants are generally more maladaptive or adaptive began by identifying all of the adaptive and maladaptive statements. Scoring the statements was conducted by summing the results of the adaptive measures, after the sum of the maladaptive scores were subtracted from the adaptive sum (Carver et al., 1989).

This thesis found the Cope scale showed a standard reliability alpha level ( $\alpha = .762$ ,  $M = 2.77$ ,  $SD = .29$ ) for the eight items that make up the adaptive coping measure. The alpha level of  $\alpha = .762$  is comparable to the alpha level found on a previous TMT study of  $\alpha = .72$  (Arndt, 2006). The maladaptive coping measure showed a low reliability alpha level ( $\alpha = .479$ ).

**Tobacco Measure.** To test the reception of the anti-tobacco PSA a Tobacco Measure was composed for this thesis using segments from a recent study that investigated the reactions of non-smokers to anti-tobacco PSAs (Wong, Harvell & Harrison, 2013). The use of Wong and



colleagues' (2013) measure is appropriate to gauge message acceptance by the use of the intentions to help promote tobacco cessation segment from their tobacco measure from the non-smoking participants in this study.

The reliability of the intention to promote tobacco cessation of the Tobacco measure consisted of 10 items and revealed a standard alpha level ( $\alpha = .78$ ,  $M = 2.97$ ,  $SD = .48$ ). A previous study employing the same Tobacco measure found comparable alpha levels at  $\alpha = .84$  for the same segment (Wong et al., 2013).

### **Death Salience vs. Non-Death Salience**

After all of the data sets were entered into the SPSS system, a series of tests were conducted. The primary analysis conducted on the data set determined if participants in the mortality-salient conditions were more death salient than the control conditions. To make this determination, an independent *t*-test was performed on the mortality salience variable using the word-stem exercise as the dependent variable. The mortality salience variable was assigned two values: 0= non-death salience/ control and 1= death salience. The independent *t*-test results for the death salient and non-death salient groups showed significant difference;  $t(113) = -2.691$  with  $p = .008$  (No MS:  $n = 66$ ,  $M = 1.53$ ,  $SD = 1.011$ ; MS:  $N = 49$ ,  $M = 2.04$ ,  $SD = .999$ ). The result of the *t*-test indicates that the mortality salience conditions and the control conditions had significantly different means with regards to level of death-thought awareness. This means that the MS group experienced significantly higher levels of mortality salience than the no MS group.

## Chapter 4: Results

### Sample

In an effort to clean the data set and provide valid statistical analysis, some participants were removed from the data set. Participants who did not provide answers on their survey (missing at least 3 responses- chosen arbitrarily by researcher) were removed from the data set,  $n=21$ . Additionally, participants in the mortality salient conditions who failed to provide at least one death word on the word-stem exercise were removed,  $n=15$ . Likewise, participants in the dental pain/control conditions with five or more death words on the manipulation check were also removed,  $n=1$ . After cleaning the data set for outliers and unanswered surveys the remaining sample consisted of:  $n=140$ ; C1:  $n=38$ , C2:  $n=31$ , C3:  $n=36$ , and C4:  $n=35$ . This process used to clean the data set is comparable to the process that has been used in other TMT studies (Harvell, 2012).

Furthermore, since this study is only concerned with non-smokers and their reaction to the anti-tobacco ad, all participants who reported they were smokers were removed,  $n=25$ .

### Analysis

All of the surveys collected were entered into a dataset. In an effort to be precise with data entry, the researcher posted the data twice into two excel spreadsheets, and the documents were compared for accuracy. Once it was determined that the dataset accurately reflected the data collected, the ensuing analysis was conducted. As suggested by Carver et al. (1989), the Cope measure was coded by grouping the adaptive responses into eight categories: positive reinterpretation and growth, use of instrumental social support, active coping, restraint, use of emotional support acceptance, suppression of competing activities, humor and planning (Carver et al., 1989). Another TMT study that also used the Cope measure to predict intention to actively

promote healthy behaviors in the proximal defenses stage removed the adaptive Cope responses relating to religion from examination because of the ambiguity of the category; likewise this thesis also removed the religious coping responses (Arndt, 2006). The maladaptive responses were organized into five categories: mental disengagement, focus on and venting of emotions, denial, behavioral disengagement, and substance abuse (Carver et al., 1989).

The word stem exercise acted as a manipulation check per the suggestion from another TMT study (Arndt et al., 1997). The assignment was coded by counting the numbers of death-related words, namely, buried, dead, grave, killed, skull and coffin (Arndt et al., 1997). Next, the tobacco measure was coded by combining the scores for each of the intent to promote tobacco cessation statements. The tobacco measure was scaled from (1) to (4), with (1) representing definitely will not and (4) definitely will. Additionally, participants' feelings towards the use of tobacco was assessed with (1) being good/ enjoyable/ wise/ pleasant and (5) being bad/ unenjoyable/ foolish/ unpleasant. The tobacco scores collected from the sample were combined for a sum total. Under the direction of the Wong et al (2013) study, a higher combined score indicates a higher willingness to promote tobacco cessation.

### **Hypothesis 1 Results**

To test H1, the effect of the Cope scale, mortality salience and proximal defenses on anti-tobacco message acceptance, a regression analysis was conducted. The independent variables were mortality salience, sum of the Cope adaptive scores, and the interaction of mortality salience and the sum of Cope adaptive scores. The dependent variable was the sum of the tobacco measure, intent to promote tobacco cessation. The regression showed  $F(3, 140) = 1.582$ ,  $p = .201$ , demonstrating that the model as a whole did not have a significant relationship. Therefore, H1 is not supported.

**Hypothesis Two Results**

A *t*-test for independence was used to investigate H2. Hypothesis predicted that participants in the distal defenses stage and will be more accepting of the anti-tobacco PSA with a social exclusion appeal. The *t*-test for independence was conducted on the participants in conditions 3 (distal defenses x mortality salience) and 4 (distal defenses x dental pain) with the Tobacco measure acting as the dependent variable. The results of the *t*-test showed  $t(140) = .0529, p = .599$ . These results indicate a non-significant finding for independence between the death salience and non-death salience groups with regards to their responses on the Tobacco Measure. Therefore, H2 is not supported.

## Chapter 5: Discussion

In this thesis, the use of Terror Management Theory (TMT) as a framework to uncover the relationship with coping style, anti-tobacco messages with a social exclusion appeal and message acceptance was shown to be non-significant. The following section will provide an in-depth discussion on the implications of the findings, any problems or limitations with the design of the quasi-experiment, and suggestions for future research.

The results from both the regression analysis and *t*-test used to investigate H1 and H2 were found to be non-significant. One overriding flaw that may have led to the non-significant and inconclusive findings for both hypotheses involves sampling error. This thesis employed a convenience sampling method and randomization with each of the four conditions was not executed properly. Instead of employing a standard randomization process when distributing the survey and the subsequent experimental conditions, the researcher assigned conditions systematically. This was conducted by assigning all initial participants to C1 until it was full, and then the remaining conditions were assigned in consecutive order until all conditions were filled. Conducting the experimental assignment in this manner may have led to the non-significant findings. Additionally, not randomizing the experimental assignments makes it impossible to infer the results to the population at large.

### Hypothesis One

H1 is concerned with the proximal defense stage. Specifically, this hypothesis predicts that individuals who responded with an adaptive coping style in the Cope measure will be more accepting of the anti-tobacco PSA, while they are engaging in the proximal defenses stage. Results from the regression analysis indicate a non-significant finding.

The finding is contrary to previous literature, which aided in the experimental design and should have produced significant findings (Arndt, et al., 2006; Cohen et al., 2007; Goldenberg &

Arndt, 2008). The main issues with this thesis that could have led to non-significant findings for H1 could be attributed to the following: participants in the experimental and control groups are too similar and may possibly share in the same CWV, the incorrect use of the Cope scale to predict proximal response and error with the experimental design.

The primary problem with H1 is that the majority of students in the sample may be members of the Church of Jesus Christ of Latter Day Saints (LDS); Heilgest & O'Driscoll, 2003, a religion that disallows the use of tobacco (Church of Jesus Christ of Latter Day Saints, 2013). As noted by several TMT studies, religion can be a large part of an individual's CWV (Arndt et al., 1997, Greenberg et al., 1997). According to a report furnished by Southern Utah University, it is estimated that 80% of the student population is LDS (Heilgest & O'Driscoll, 2003). This is a problem because the Cope scale intends to predict how individuals would respond in a stressful situation and they should likewise respond to a health message in a similar manner; however, in this instance participants may not have experienced stress after viewing the anti-tobacco ad. It could be argued that the students did not experience stress after viewing the tobacco ad because they already agree with the intent of the anti-tobacco message as it supports their CWV.

Essentially, the Cope scale failed as a predictor in this situation to predict health message acceptance in the proximal stage. Even with the induction of mortality salience, participants were unaffected because tobacco is simply something they do not use. Experiencing some level of stress after viewing a health ad is the premise of the Arndt et al. (2006) study that demonstrated a significant finding with adaptive attitudes and intention to promote health through demonstration of healthy behaviors.

Additionally, it could be that the subtle difference between Arndt et al. (2006) using the Cope measure to predict intentions to promote active healthy behaviors between this thesis

design of avoiding unhealthy practices, that lead to confounding variables and resulted in non-significant findings. The Cope scale was used in Arndt et al. (2006), to determine the connection between adaptive coping style and intention to seek preventative medical screening such as breast-examination. This thesis attempted to add to Arndt et al. (2006) hypothesis, by extending the Cope scale to predict health message acceptance in the form of an anti-tobacco ad. The failure of the Cope scale to predict behavior in this thesis, suggest that the Cope scale may be more suited to predict message acceptance for health PSAs focused on promoting preventative health care. This thesis employed the use of anti-tobacco messages to promote health and it seems that the Cope scale may not be a good predictor for acceptance of this type of message. The Cope scale was used successfully in Arndt et al. (2006) because their health message was focused on getting individuals to go and do something about their health e.g. breast examination. This thesis, on the other hand, prompted individuals to not do something, e.g. don't smoke, which may not be associated with the Cope measure. This thesis attempted to use to the Cope scale in a novel way to determine anti-tobacco message acceptance in the proximal defenses stage, in an effort to extend the knowledge of the impact of coping styles and healthy behaviors.

In addition to the problems with the sample and the Cope measure, the proximal conditions also experienced some design flaws. The primary problem with the design of the entire quasi-experiment is that the collection of the data was conducted through paper survey packets. This was especially problematic for the proximal conditions because when the researcher collected data from a large group of students, some of the students finished the death manipulation ahead of others, causing them to wait for others to catch up. This may have led some individuals to reach distal defenses before viewing the tobacco ad and completing the tobacco measure for message acceptance. Students, who reached the distal defenses stage, while

in the proximal condition groups, may have inadvertently confounded the analysis with their erroneous data. According to Arndt et al. (1997), after the induction of mortality salience, a time period of more than 10 minutes can transition death-thought awareness from focal view to an unconscious awareness. Unfortunately, this may have been the case in some data sets collected in the proximal conditions. Those participants who reached the distal defenses stage, while in the proximal experiment condition, may have relied on their CWV or self-esteem when responding to the Tobacco measure. Their CWV and self esteem may have negated the use of the of Cope scale as a predictor for their acceptance of the anti-tobacco message, because they had transitioned to the distal defenses stage.

### **Hypothesis Two**

H1 investigated the distal defenses stage. Specifically, this hypothesis was concerned with the effect of distal defenses and acceptance of an anti-tobacco PSA with a social exclusion appeal. The result of the *t*-test analysis on the distal groups (MS vs. Control) was not significant. This result indicates that the two groups were not significantly different. This is contrary to previous research that demonstrated a significant effect when using social exclusion ads to deter drug use and found that using ads focused on the effects of drugs like tobacco and physical deformities to be less effective (Cohen et al., 2007; Goldenberg & Arndt, 2008; Jessop & Wade, 2008). Some of the problems with testing this hypothesis is related to the sample and flaws in the experimental design.

The first big problem with H2 is that the sample consisted of students who may already agree with the anti-tobacco message. Arguably, many students who attend SUU adhere to a religion that denounces the use of tobacco (Church of Jesus Christ of Latter Day Saints, 2013; Heilgest & O'Driscoll, 2003). According to religious text of the LDS faith, the *Word of Wisdom*



prohibits smoking, drinking of tea, coffee and other habit forming and harmful substances (Smith, 1833). The possibility that the overwhelming majority of SUU students may have the Word of Wisdom (WOW) within their CWV (Heilgest & O'Driscoll, 2003) could have caused the non-significant results in the *t*-test. The distal defenses mortality salience group (C 3) could have presented similarly to the control group (C4) because they both could have relied heavily on the WOW in their CWV . Basically, the mortality-salience manipulation had little effect to distinguish one group from another because they may all be strongly opposed to tobacco use.

Another problem with H2 relates to the design of the experiment. Previous studies that examined anti-tobacco and drinking ads did so by using both a social exclusion ad and an ad featuring fear appeals and the body (Jessop & Wade, 2008; Martin & Kamins, 2010). This thesis's quasi-experiment did not employ the same design which may have led to the unexpected results. Jessop and Wade (2008) argued that PSAs featuring morality related health consequences may inadvertently cause a mortality to be salient, and trigger self-esteem to be a variable with message acceptance. This can be counterproductive to the goal of the message if the viewers self-esteem is deeply embedded with the behavior that the PSA is denouncing (Jessop & Wade, 2008). In order to streamline the quasi-experiment for this thesis it was decided that self-esteem would not be included in the design, thus the use of the physical effect PSA was redacted. Martin and Kamins (2010) concurred with the results of Jessop & Wade (2008), in that they both found that social exclusion PSAs were more effective in gaining binge-drinking and anti-tobacco message acceptance. This thesis attempted to demonstrate the effect of MS and a social exclusion anti-tobacco PSA, without the use of a fear appeals PSA that traditionally focuses on physical deformities caused by using tobacco. However, the use of only the social exclusion ad did not help to address H2 in a meaningful manner.

## **Limitations**

Both of the hypotheses resulted in non-significant conclusions. This could have been caused by two major limitations in this quasi-experimental design and if they were addressed before hand the results may have been more accepting. The limitations in this thesis are the use of paper surveys, instead of a computer-based system and the possibility that a tobacco measure assessing tobacco message acceptance administered to SUU students may conclude similar results in both the experiment and control conditions regardless of the MS manipulation because of the predominate religion among students (Heilgest & O'Driscoll, 2003).

The primary limitation as discussed earlier in this section is that the data was conducted in paper surveys which offered less control over the participants. Initially, this study was to be conducted through a computer based survey program called Qualtrics but, cost and time caused the researcher to make the decision to administer the surveys through the paper format. The cost would stem from purchasing headsets for individual participants to hear the anti-tobacco ad when using the Qualtrics system individually. Additionally, time was an issue because using Qualtrics would have necessitated the use of a designated computer lab with small groups meandering into scheduled sessions. This thesis collected data in the classroom with large groups of students to meet the time constraint of completing the project. This change in plan caused many problems, namely, there was not true randomization when the experimental conditions were assigned, time control was not employed for the the proximal conditions to an extent and participants could have moved through sections improperly, without the researcher knowing.

Arguably, the biggest concern with the design of this quasi-experiment is the improper randomization of experimental conditions. The researcher attempted a non-random assignment of the conditions via a systematic approach of assigning experimental conditions until it was

sufficiently full, then the next condition was open for assignment. This misdeed demonstrates the inexperience of the researcher with random assignments. Proper preparation could have prevented the erroneous assignments and ensured a proper randomization technique.

The next problem that rose from not using a computer-based survey program is that time control was not strictly enforced for participants in the proximal conditions. The researcher was cognizant of the need to keep participants in the proximal stage when reporting on the tobacco measure. However, after engaging in the death-induction exercise, some participants waited for others in their group to catch up to them so that they could all view the anti-tobacco PSA together. This may have caused those students who finished earlier than others to reach the distal defenses stage before reporting on the tobacco measure. Students never waited for more than 10 minutes but some students waited ten minutes before viewing the PSA and answering the tobacco measure. The time of 10 minutes after death induction is arguably within the time frame suggested by Burke et al., of 7- 10 minutes (2010). However, time to reach distal defenses may vary per individual and ten minutes could be borderline to reaching the distal defenses stage (Burke et al., 2010).

The last problem related to control when using a paper survey is that individuals could flip through and answer questions out of order. The researcher attempted to stop students each time that this occurred but, students could easily have moved back and forwarded undetected, because there was only one researcher and at times the groups were large with as many as 36 students. The computer based survey program would have control this by not letting participants move back after inputting a response. Likewise the computer program would have prevented students from skipping ahead to answer questions.

The last limitation that was found to contribute to the non-significant findings is related to the population of students attending SUU. Although SUU is not considered a private or religious school, many of the students that attend SUU are members of the Church of Jesus Christ of Latter-Day Saints (Heilgest & O'Driscoll, 2003). As related earlier, this religion is opposed to the use of tobacco stemming from a proclamation called the Word of Wisdom (Smith, 1833). According to a report furnished by SUU, it is estimated 80 percent of the student body are Latter-Day Saints (LDS); Heilgest & O'Driscoll, 2003. This is problematic because the design of this study attempted to understand the relationship with coping styles, mortality salience and anti-tobacco message acceptance. Coping styles can act as a predictor of health message acceptance when based on the premise that the health message should induce some level of stress (Arndt et al., 2006). Tending to the argument that this sample of students may have a majority of LDS members, they may not have experienced enough stress after viewing the anti-tobacco message, which could explain the lack of relationship between adaptive coping style and anti-tobacco message acceptance. These students didn't experience stress because they agree with the intent of the message based on their religious perspective on tobacco use. No current research exist in the TMT field on LDS religion and anti-tobacco message acceptant thus this thesis may have inadvertently, stumbled onto a potential area to investigate.

Additionally, there was not a significant difference between the mortality salient and non mortality salient groups when responding on the tobacco measure, which could be explained by the unique SUU student population. It could be argued that because a large majority of SUU students maybe LDS (Heilgest & O'Driscoll, 2003), within their CWV there may already be an aversion to tobacco use, which was amplified when they experience the MS induction. This

could very well explain why the control group manifest similarly to the MS group because they may share in the same CWV against the use of tobacco.

### **Future Research**

It is clear that this thesis leaves room for continued discovery, as many of the questions remain unanswered. Some suggested future direction in exploring anti-tobacco message acceptance and existential anxiety should include individuals' predispositions (current tobacco user vs. non-user or healthy adaptive vs. maladaptive coping styles). This may necessitate a more intrusive survey to determine the personality of individuals prior to administering the MS induction and subsequent measures. Additionally, it would be prudent to extend the studies that used two different anti-tobacco PSAs within their experimental design, one featuring fear appeals and another featuring the social consequences (Jessop and Wage, 2008; Martin & Kamins, 2010). This type of an experimental design may have lead to significant interactions and more conclusively addressed the hypotheses in this thesis.

There is also the potential that the distribution of this sample is skewed because random assignment of the experimental conditions was not completed. Potential research could determine if a non-parametric test such as the Kruskal–Wallis one-way analysis of variance test could be useful in determining the relationship between the variables.

### **Conclusion**

The relationship between coping style, death salience and anti-tobacco message featuring a social exclusion appeal was the focus of this thesis. Drawing upon previous research this thesis employed a TMT experimental design to investigate the possible relationships between these variables. The results of this quasi-experiment indicated non significant findings but, as stated in this chapter many aspects of the design was done in error. This means that there is still a

possibility of finding a relationship between these variables. Such a finding could contribute greatly to the field of health communication and persuasion. Understanding the psychological underpinnings of message acceptance is tantamount to message design, and could grant knowledge leading to effective message placement.

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## Appendix A

### Cope Measure

1. What is your sex? (01) male (02) female
2. What is your age? \_\_\_\_\_
3. What is your race?
  - (01) Caucasian
  - (02) African American
  - (03) Asian American
  - (04) Hispanic
  - (05) Native American
  - (06) Pacific Islander
  - (07) Other

### Part 1

Respond to each of the following items by marking one of the response choices listed just below. Please try to respond to each item separately in your mind from each other item. Choose your answers thoughtfully, and make your answers as true FOR YOU as you can. Please answer every item. There are no "right" or "wrong" answers, so choose the most accurate answer for YOU--not what you think "most people" would say or do. Indicate what YOU usually do when YOU experience a stressful event.

1. I try to grow as a person as a result of the experience.

\_\_\_\_\_ (1) I usually don't do this at all

\_\_\_\_\_ (2) I usually do this a little bit

\_\_\_\_\_ (3) I usually do this a medium amount

\_\_\_\_\_ (4) I usually do this a lot

2. I turn to work or other substitute activities to take my mind off things.

\_\_\_\_\_ (1) I usually don't do this at all

\_\_\_\_\_ (2) I usually do this a little bit

\_\_\_\_\_ (3) I usually do this a medium amount

\_\_\_\_\_ (4) I usually do this a lot

3. I get upset and let my emotions out.

\_\_\_\_\_ (1) I usually don't do this at all

\_\_\_\_\_ (2) I usually do this a little bit

\_\_\_\_\_ (3) I usually do this a medium amount

\_\_\_\_\_ (4) I usually do this a lot

4. I try to get advice from someone about what to do.

\_\_\_\_\_ (1) I usually don't do this at all

\_\_\_\_\_ (2) I usually do this a little bit

\_\_\_\_\_ (3) I usually do this a medium amount

\_\_\_\_\_ (4) I usually do this a lot

5. I concentrate my efforts on doing something about it.

\_\_\_\_\_ (1) I usually don't do this at all

\_\_\_\_\_ (2) I usually do this a little bit



\_\_\_\_\_ (3) I usually do this a medium amount

\_\_\_\_\_ (4) I usually do this a lot

6. I say to myself "this isn't real."

\_\_\_\_\_ (1) I usually don't do this at all

\_\_\_\_\_ (2) I usually do this a little bit

\_\_\_\_\_ (3) I usually do this a medium amount

\_\_\_\_\_ (4) I usually do this a lot

7. I put my trust in God.

\_\_\_\_\_ (1) I usually don't do this at all

\_\_\_\_\_ (2) I usually do this a little bit

\_\_\_\_\_ (3) I usually do this a medium amount

\_\_\_\_\_ (4) I usually do this a lot

8. I laugh about the situation.

\_\_\_\_\_ (1) I usually don't do this at all

\_\_\_\_\_ (2) I usually do this a little bit

\_\_\_\_\_ (3) I usually do this a medium amount

\_\_\_\_\_ (4) I usually do this a lot

9. I admit to myself that I can't deal with it, and quit trying.

\_\_\_\_\_ (1) I usually don't do this at all

\_\_\_\_\_ (2) I usually do this a little bit

\_\_\_\_\_ (3) I usually do this a medium amount

\_\_\_\_\_ (4) I usually do this a lot

10. I restrain myself from doing anything too quickly.

\_\_\_\_\_ (1) I usually don't do this at all

\_\_\_\_\_ (2) I usually do this a little bit

\_\_\_\_\_ (3) I usually do this a medium amount

\_\_\_\_\_ (4) I usually do this a lot

11. I discuss my feelings with someone.

\_\_\_\_\_ (1) I usually don't do this at all

\_\_\_\_\_ (2) I usually do this a little bit

\_\_\_\_\_ (3) I usually do this a medium amount

\_\_\_\_\_ (4) I usually do this a lot

12. I use alcohol or drugs to make myself feel better.

\_\_\_\_\_ (1) I usually don't do this at all

\_\_\_\_\_ (2) I usually do this a little bit

\_\_\_\_\_ (3) I usually do this a medium amount

\_\_\_\_\_ (4) I usually do this a lot

13. I get used to the idea that it happened.

\_\_\_\_\_ (1) I usually don't do this at all

\_\_\_\_\_ (2) I usually do this a little bit

\_\_\_\_\_ (3) I usually do this a medium amount

\_\_\_\_\_ (4) I usually do this a lot

14. I talk to someone to find out more about the situation.

\_\_\_\_\_ (1) I usually don't do this at all

\_\_\_\_\_ (2) I usually do this a little bit

\_\_\_\_\_ (3) I usually do this a medium amount

\_\_\_\_\_ (4) I usually do this a lot

15. I keep myself from getting distracted by other thoughts or activities.

\_\_\_\_\_ (1) I usually don't do this at all

\_\_\_\_\_ (2) I usually do this a little bit

\_\_\_\_\_ (3) I usually do this a medium amount

\_\_\_\_\_ (4) I usually do this a lot

16. I daydream about things other than this.

\_\_\_\_\_ (1) I usually don't do this at all

\_\_\_\_\_ (2) I usually do this a little bit

\_\_\_\_\_ (3) I usually do this a medium amount

\_\_\_\_\_ (4) I usually do this a lot

17. I get upset, and am really aware of it.

\_\_\_\_\_ (1) I usually don't do this at all

\_\_\_\_\_ (2) I usually do this a little bit

\_\_\_\_\_ (3) I usually do this a medium amount

\_\_\_\_\_ (4) I usually do this a lot

18. I seek God's help.

\_\_\_\_\_ (1) I usually don't do this at all

\_\_\_\_\_ (2) I usually do this a little bit

\_\_\_\_\_ (3) I usually do this a medium amount

\_\_\_\_\_ (4) I usually do this a lot

19. I make a plan of action.

\_\_\_\_\_ (1) I usually don't do this at all

\_\_\_\_\_ (2) I usually do this a little bit

\_\_\_\_\_ (3) I usually do this a medium amount

\_\_\_\_\_ (4) I usually do this a lot

20. I make jokes about it.

\_\_\_\_\_ (1) I usually don't do this at all

\_\_\_\_\_ (2) I usually do this a little bit

\_\_\_\_\_ (3) I usually do this a medium amount

\_\_\_\_\_ (4) I usually do this a lot

21. I accept that this has happened and that it can't be changed.

\_\_\_\_\_ (1) I usually don't do this at all

\_\_\_\_\_ (2) I usually do this a little bit

\_\_\_\_\_ (3) I usually do this a medium amount

\_\_\_\_\_ (4) I usually do this a lot

22. I hold off doing anything about it until the situation permits.

\_\_\_\_\_ (1) I usually don't do this at all

\_\_\_\_\_ (2) I usually do this a little bit

\_\_\_\_\_ (3) I usually do this a medium amount

\_\_\_\_\_ (4) I usually do this a lot

23. I try to get emotional support from friends or relatives.

\_\_\_\_\_ (1) I usually don't do this at all

\_\_\_\_\_ (2) I usually do this a little bit

\_\_\_\_\_ (3) I usually do this a medium amount

\_\_\_\_\_ (4) I usually do this a lot

24. I just give up trying to reach my goal.

\_\_\_\_\_ (1) I usually don't do this at all

\_\_\_\_\_ (2) I usually do this a little bit

\_\_\_\_\_ (3) I usually do this a medium amount

\_\_\_\_\_ (4) I usually do this a lot

25. I take additional action to try to get rid of the problem.

\_\_\_\_\_ (1) I usually don't do this at all

\_\_\_\_\_ (2) I usually do this a little bit

\_\_\_\_\_ (3) I usually do this a medium amount

\_\_\_\_\_ (4) I usually do this a lot

26. I try to lose myself for a while by drinking alcohol or taking drugs.

\_\_\_\_\_ (1) I usually don't do this at all

\_\_\_\_\_ (2) I usually do this a little bit

\_\_\_\_\_ (3) I usually do this a medium amount

\_\_\_\_\_ (4) I usually do this a lot

27. I refuse to believe that it has happened.

\_\_\_\_\_ (1) I usually don't do this at all

\_\_\_\_\_ (2) I usually do this a little bit

\_\_\_\_\_ (3) I usually do this a medium amount

\_\_\_\_\_ (4) I usually do this a lot

28. I let my feelings out.

\_\_\_\_\_ (1) I usually don't do this at all

\_\_\_\_\_ (2) I usually do this a little bit

\_\_\_\_\_ (3) I usually do this a medium amount

\_\_\_\_\_ (4) I usually do this a lot

29. I try to see it in a different light, to make it seem more positive.

\_\_\_\_\_ (1) I usually don't do this at all

\_\_\_\_\_ (2) I usually do this a little bit

\_\_\_\_\_ (3) I usually do this a medium amount

\_\_\_\_\_ (4) I usually do this a lot

30. I talk to someone who could do something concrete about the problem.

\_\_\_\_\_ (1) I usually don't do this at all

\_\_\_\_\_ (2) I usually do this a little bit

\_\_\_\_\_ (3) I usually do this a medium amount

\_\_\_\_\_ (4) I usually do this a lot

31. I sleep more than usual.

\_\_\_\_\_ (1) I usually don't do this at all

\_\_\_\_\_ (2) I usually do this a little bit

\_\_\_\_\_ (3) I usually do this a medium amount

\_\_\_\_\_ (4) I usually do this a lot

32. I try to come up with a strategy about what to do.

\_\_\_\_\_ (1) I usually don't do this at all

\_\_\_\_\_ (2) I usually do this a little bit

\_\_\_\_\_ (3) I usually do this a medium amount



\_\_\_\_\_ (4) I usually do this a lot

33. I focus on dealing with this problem, and if necessary let other things slide a little.

\_\_\_\_\_ (1) I usually don't do this at all

\_\_\_\_\_ (2) I usually do this a little bit

\_\_\_\_\_ (3) I usually do this a medium amount

\_\_\_\_\_ (4) I usually do this a lot

34. I get sympathy and understanding from someone.

\_\_\_\_\_ (1) I usually don't do this at all

\_\_\_\_\_ (2) I usually do this a little bit

\_\_\_\_\_ (3) I usually do this a medium amount

\_\_\_\_\_ (4) I usually do this a lot

35. I drink alcohol or take drugs, in order to think about it less.

\_\_\_\_\_ (1) I usually don't do this at all

\_\_\_\_\_ (2) I usually do this a little bit

\_\_\_\_\_ (3) I usually do this a medium amount

\_\_\_\_\_ (4) I usually do this a lot

36. I kid around about it.

\_\_\_\_\_ (1) I usually don't do this at all

\_\_\_\_\_ (2) I usually do this a little bit

\_\_\_\_\_ (3) I usually do this a medium amount

\_\_\_\_\_ (4) I usually do this a lot

37. I give up the attempt to get what I want.

\_\_\_\_\_ (1) I usually don't do this at all

\_\_\_\_\_ (2) I usually do this a little bit

\_\_\_\_\_ (3) I usually do this a medium amount

\_\_\_\_\_ (4) I usually do this a lot

38. I look for something good in what is happening.

\_\_\_\_\_ (1) I usually don't do this at all

\_\_\_\_\_ (2) I usually do this a little bit

\_\_\_\_\_ (3) I usually do this a medium amount

\_\_\_\_\_ (4) I usually do this a lot

39. I think about how I might best handle the problem.

\_\_\_\_\_ (1) I usually don't do this at all

\_\_\_\_\_ (2) I usually do this a little bit

\_\_\_\_\_ (3) I usually do this a medium amount

\_\_\_\_\_ (4) I usually do this a lot

40. I pretend that it hasn't really happened.

\_\_\_\_\_ (1) I usually don't do this at all

\_\_\_\_\_ (2) I usually do this a little bit

\_\_\_\_\_ (3) I usually do this a medium amount

\_\_\_\_\_ (4) I usually do this a lot

41. I make sure not to make matters worse by acting too soon.

\_\_\_\_\_ (1) I usually don't do this at all

\_\_\_\_\_ (2) I usually do this a little bit

\_\_\_\_\_ (3) I usually do this a medium amount

\_\_\_\_\_ (4) I usually do this a lot

42. I try hard to prevent other things from interfering with my efforts at dealing with this.

\_\_\_\_\_ (1) I usually don't do this at all

\_\_\_\_\_ (2) I usually do this a little bit

\_\_\_\_\_ (3) I usually do this a medium amount

\_\_\_\_\_ (4) I usually do this a lot

43. I go to movies or watch TV, to think about it less.

\_\_\_\_\_ (1) I usually don't do this at all

\_\_\_\_\_ (2) I usually do this a little bit

\_\_\_\_\_ (3) I usually do this a medium amount

\_\_\_\_\_ (4) I usually do this a lot

44. I accept the reality of the fact that it happened.

\_\_\_\_\_ (1) I usually don't do this at all

\_\_\_\_\_ (2) I usually do this a little bit

\_\_\_\_\_ (3) I usually do this a medium amount

\_\_\_\_\_ (4) I usually do this a lot

45. I ask people who have had similar experiences what they did.

\_\_\_\_\_ (1) I usually don't do this at all

\_\_\_\_\_ (2) I usually do this a little bit

\_\_\_\_\_ (3) I usually do this a medium amount

\_\_\_\_\_ (4) I usually do this a lot

46. I feel a lot of emotional distress and I find myself expressing those feelings a lot.

\_\_\_\_\_ (1) I usually don't do this at all

\_\_\_\_\_ (2) I usually do this a little bit

\_\_\_\_\_ (3) I usually do this a medium amount

\_\_\_\_\_ (4) I usually do this a lot

47. I take direct action to get around the problem.

\_\_\_\_\_ (1) I usually don't do this at all

\_\_\_\_\_ (2) I usually do this a little bit

\_\_\_\_\_ (3) I usually do this a medium amount

\_\_\_\_\_ (4) I usually do this a lot

48. I try to find comfort in my religion.

\_\_\_\_\_ (1) I usually don't do this at all

\_\_\_\_\_ (2) I usually do this a little bit

\_\_\_\_\_ (3) I usually do this a medium amount

\_\_\_\_\_ (4) I usually do this a lot

49. I force myself to wait for the right time to do something.

\_\_\_\_\_ (1) I usually don't do this at all

\_\_\_\_\_ (2) I usually do this a little bit

\_\_\_\_\_ (3) I usually do this a medium amount

\_\_\_\_\_ (4) I usually do this a lot

50. I make fun of the situation.

\_\_\_\_\_ (1) I usually don't do this at all

\_\_\_\_\_ (2) I usually do this a little bit

\_\_\_\_\_ (3) I usually do this a medium amount

\_\_\_\_\_ (4) I usually do this a lot

51. I reduce the amount of effort I'm putting into solving the problem.

\_\_\_\_\_ (1) I usually don't do this at all

\_\_\_\_\_ (2) I usually do this a little bit

\_\_\_\_\_ (3) I usually do this a medium amount

\_\_\_\_\_ (4) I usually do this a lot

52. I talk to someone about how I feel.

\_\_\_\_\_ (1) I usually don't do this at all

\_\_\_\_\_ (2) I usually do this a little bit

\_\_\_\_\_ (3) I usually do this a medium amount

\_\_\_\_\_ (4) I usually do this a lot

53. I use alcohol or drugs to help me get through it.

\_\_\_\_\_ (1) I usually don't do this at all

\_\_\_\_\_ (2) I usually do this a little bit

\_\_\_\_\_ (3) I usually do this a medium amount

\_\_\_\_\_ (4) I usually do this a lot

54. I learn to live with it.

\_\_\_\_\_ (1) I usually don't do this at all

\_\_\_\_\_ (2) I usually do this a little bit

\_\_\_\_\_ (3) I usually do this a medium amount

\_\_\_\_\_ (4) I usually do this a lot

55. I put aside other activities in order to concentrate on this.

\_\_\_\_\_ (1) I usually don't do this at all

\_\_\_\_\_ (2) I usually do this a little bit

\_\_\_\_\_ (3) I usually do this a medium amount

\_\_\_\_\_ (4) I usually do this a lot

56. I think hard about what steps to take.

\_\_\_\_\_ (1) I usually don't do this at all

\_\_\_\_\_ (2) I usually do this a little bit

\_\_\_\_\_ (3) I usually do this a medium amount

\_\_\_\_\_ (4) I usually do this a lot

57. I act as though it hasn't even happened.

\_\_\_\_\_ (1) I usually don't do this at all

\_\_\_\_\_ (2) I usually do this a little bit

\_\_\_\_\_ (3) I usually do this a medium amount

\_\_\_\_\_ (4) I usually do this a lot

58. I do what has to be done, one step at a time.

\_\_\_\_\_ (1) I usually don't do this at all

\_\_\_\_\_ (2) I usually do this a little bit

\_\_\_\_\_ (3) I usually do this a medium amount

\_\_\_\_\_ (4) I usually do this a lot

59. I learn something from the experience.

\_\_\_\_\_ (1) I usually don't do this at all

\_\_\_\_\_ (2) I usually do this a little bit

\_\_\_\_\_ (3) I usually do this a medium amount



\_\_\_\_\_ (4) I usually do this a lot

60. I pray more than usual.

\_\_\_\_\_ (1) I usually don't do this at all

\_\_\_\_\_ (2) I usually do this a little bit

\_\_\_\_\_ (3) I usually do this a medium amount

\_\_\_\_\_ (4) I usually do this a lot

**Appendix B****Tobacco Measure**

1. Do you currently smoke cigarettes?  
\_\_\_\_\_ (01) Yes, I currently smoke cigarettes.  
\_\_\_\_\_ (02) No, I am currently a non-smoker.
  
2. How many hours per week are you exposed to others' tobacco smoke?  
\_\_\_\_\_ (01) Less than 5 hours  
\_\_\_\_\_ (02) 5 to 10 hours  
\_\_\_\_\_ (03) 10 to 15 hours  
\_\_\_\_\_ (04) More than 15 hours
  
3. How frequently are you around your friends who smoke?  
\_\_\_\_\_ (01) Not at all  
\_\_\_\_\_ (02) Somewhat frequently  
\_\_\_\_\_ (03) Frequently  
\_\_\_\_\_ (04) All the time
  
4. How often do you hang out at places where you are exposed to secondhand smoke?  
\_\_\_\_\_ (01) Rarely or not at all  
\_\_\_\_\_ (02) Somewhat often  
\_\_\_\_\_ (03) Often  
\_\_\_\_\_ (04) Very often

5. How likely is it that in next 3 months you will:

	Definitely will not	Probably will not	Probably Will	Definitely Will
a) Urge a smoker to quit smoking completely and permanently.	1	2	3	4
b) Urge a smoker to cut back the number of cigarettes smoked per day.	1	2	3	4
c) Talk to a smoker about resources for quitting.	1	2	3	4

6. How likely is it that in next 3 months you will:

	Definitely will not	Probably will not	Probably will	Definitely Will
a) Buy a nicotine replacement product (patch, lozenge) to help a smoker quit smoking.	1	2	3	4
b) Call a quit line to seek advice for helping others quit.	1	2	3	4
c) Encourage a smoker to enroll in a smoking cessation program.	1	2	3	4

7. How concerned are you that your friends who smoke will \_\_\_\_\_ if they continue smoking?

- a) Become addicted to nicotine
- b) Develop a smoking dependency
- c) Become hooked on cigarettes
- d) Develop a smoking addiction

8. How likely do you think your exposure to secondhand smoke around your friends who smoke \_\_\_\_\_?

- a) Places you at risk for a smoking-related disease
- b) Exposes you to smoking harms
- c) Is harmful to your overall health
- d) Jeopardizes your physical well-being

9. I feel that smoking is....                      very    somewhat    neither    somewhat    very

- a) Bad                      -----O-----O-----O-----O-----O-----O----- Good
- b) Unenjoyable        -----O-----O-----O-----O-----O-----O----- Enjoyable
- c) Foolish                -----O-----O-----O-----O-----O-----O----- Wise
- d) Unpleasant         -----O-----O-----O-----O-----O-----O----- Pleasant



**Appendix D****Word Stem Exercise (Manipulation Check)**

We are interested in seeing how well you can complete word stems. Please complete the following by filling letters in the blanks to create words. Please fill in the blanks with the first word that comes to mind. Write one letter per blank. Some words may be plural. Thank you!

1. BUR \_\_ \_ D

14. CHA \_\_ \_

2. PLA \_\_ \_

15. KI \_\_ \_ ED

3. \_\_ \_ OK

16. CL \_\_ \_ K

4. WAT \_\_ \_

17. TAB \_\_ \_

5. DE \_\_ \_

18. W \_\_ \_ DOW

6. MU \_\_ \_

19. SK \_\_ \_ L

7. \_\_ \_ NG

20. TR \_\_ \_

8. B \_ T \_ LE

21. P \_ P \_ R

9. M \_ J \_ R

22. COFF \_\_ \_

10. P \_\_ \_ TURE

23. \_ O \_ SE

11. FL \_ W \_ R

24. POST \_\_ \_

12. GRA \_\_ \_

25. R \_ DI \_

## Appendix E

### Distracter Tasks (Distal Defense)

Please read the following short passage from a novel and answer the questions below it.

The automobile swung clumsily around the curve in the red sandstone trail, now a mass of mud. The headlights suddenly picked out in the night—first on one side of the road, then on the other—two wooden huts with sheet metal roofs. On the right near the second one, a tower of course beams could be made out in the light fog. From the top of the tower a metal cable, invisible at its starting-point, shone as it sloped down into the light from the car before disappearing behind the embankment that blocked the road. The car slowed down and stopped a few yards from the huts. The man who emerged from the seat to the right of the driver labored to extricate himself from the car. As he stood up, his huge, broad frame lurched a little. In the shadow beside the car, solidly planted on the ground and weighed down by fatigue, he seemed to be listening to the idling motor. Then he walked in the direction of the embankment and entered the cone of light from the headlights. He stopped at the top of the slope, his broad back outlined against the darkness. After a moment he turned around. In the light from the dashboard he could see the chauffeur's black face, smiling. The man signaled and the chauffeur turned off the motor. At once a vast cool silence fell over the trail and the forest. Then the sound of the water could be heard.

The man looked at the river below him, visible solely as a broad dark motion flecked with occasional shimmers. A denser motionless darkness, far beyond, must be the other bank. By looking fixedly, however, one could see on that still bank a yellowish light like an oil lamp in the distance. The big man turned back toward the car and nodded. The chauffeur switched off the lights, turned them on again, and then blinked them regularly. On the embankment the man appeared and disappeared, taller and more massive each time he came back to life. Suddenly, on the other bank of the river, a lantern held up by an invisible arm back and forth several times. At a final signal from the lookout, the man disappeared into the night. With the lights out, the river was shining intermittently. On each side of the road, the dark masses of forest foliage stood out against the sky and seemed very near. The fine rain that had soaked the trail an hour earlier was still hovering in the warm air, intensifying the silence and immobility of this broad clearing in the virgin forest. In the black sky misty stars flickered.

How do you feel about the overall descriptive qualities of the story?

1	2	3	4	5	6	7	8	9
not at all			somewhat			very		
descriptive			descriptive			descriptive		

Do you think the author of this story is male or female?

\_\_\_\_\_ male          \_\_\_\_\_ female

(Distracter task 2)

Word Search Puzzle

Circle as many words as you can in the puzzle below.

X	L	F	G	N	S	U	R	B	I
P	A	Z	N	E	O	S	F	G	U
R	I	A	I	R	F	E	L	L	D
O	C	N	V	D	T	A	O	A	E
G	E	I	O	L	W	R	O	C	L
R	P	M	M	I	A	C	H	I	I
A	S	A	U	H	R	H	C	D	V
M	T	L	D	C	E	S	S	E	E
V	T	N	E	D	U	T	S	M	R
E	D	U	C	A	T	I	O	N	L

animal  
children  
deliver  
education  
medical  
moving

program  
school  
search  
software  
special  
student

### **Vita**

Yanavey McCloskey is a first generation Cambodian-American. She was born and raised in the inter-city ghettos of Oakland, California. She moved to Cedar City, Utah in 2003 to pursue higher education at Southern Utah University. In May of 2006, she completed a Bachelors of Science degree in Psychology and Communication. In August of 2011, she completed course work for the Masters of Public Administration degree, also at Southern Utah University.

Yanavey is currently the Public Affairs Specialist for the Bureau of Land Management in the Southern Utah area. In this capacity, she applies her studies to real-life applications. She intends to have a long communication-related career in public service, working as a purveyor of information.

Although Yanavey's educational and career endeavors may seem impressive, she is most proud of her role as mother to her three amazing children. Her long standing goal is to someday make the claim that she had a hand in raising three well-adjusted and outstanding individuals.