THE EFFECTS OF SELF-EFFICACY STATEMENTS IN ANTI-TOBACCO FEAR APPEAL PSAS

By

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To the Faculty of Washington State University:

The members of the Committee appointed to examine the thesis of MYIAH HUTCHENS HIVELY find it satisfactory and recommend that it be accepted.

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THE EFFECTS OF SELF-EFFICACY STATEMENTS IN

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Abstract

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Two hundred and ninety-two undergraduate students participated in an experiment examining participants' reactions to anti-tobacco messages. Participants viewed five anti-tobacco public service announcements (PSAs) created for the Washington state Department of Health either in their original form or with a self-efficacy statement added to the end of the PSA, or five neutral advertisements such as soup, cell phone, and banking commercials. Statistically significant results include that participants in the two PSA conditions indicated higher levels of intention to change their behavior when they perceived that the characters were similar to themselves. In addition, participants viewing the PSAs indicated higher levels of realism and fear than participants viewing the neutral commercials. Results regarding differences in perceptions of fear, perceptions of realism, intentions to change their behavior and smoking refusal self-efficacy in the self-efficacy and no efficacy conditions were not statistically significant but were in the predicted direction. Implications and future directions for research are discussed.

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CHAPTER ONE

INTRODUCTION

Tobacco use continues to pose problems for health educators, parents and campaign designers. According to a 2004 nationwide survey, currently 29.2 percent of Americans over the age of twelve reported at least monthly tobacco use, and those aged 18 to 25 had the highest percentage of tobacco use compared to all other age groups (SAMHSA, 2005).

Tobacco companies have been blamed for using media-based tobacco advertisements to attract people to smoke (CDC, 2000), and records show that tobacco industries have spent more than $18 million a day to advertise and promote cigarettes (Federal Trade Commission Report to Congress for 1998, 2000) utilizing numerous strategies and marketing tools to lure people to smoke. To counter this, multiple researchers have tried to determine what elements make mass media messages more or less effective and in particular how anti-smoking campaigns can be made more effective to curb people's smoking behavior. Research has identified youths as an important target for anti-smoking ads because preventing smoking by youths will decrease overall smoking and reduce long-term health effects (Beaudion, 2002).

The media vehicle most commonly used to address public health issues is the public service announcement (PSA) and a common persuasive technique used in PSAs is the fear appeal (Witte, 1998). The most recent theory addressing fear appeals is Witte's (1992, 1998, 2000) Extended Parallel Process Model which states that an effective fear appeal will include four aspects: threat of harm if the message's recommendations are not followed, threat that is personalized to the target of the message, response efficacy, which

is that the recommendation given will eliminate the threat, and personal efficacy or self-efficacy, the belief that an individual can perform the recommended action. While some research has been conducted on manipulating the levels of fear and response efficacy in messages (Mewborn & Rogers, 1979; Rogers & Deckner, 1975; Rogers & Mewborn, 1976; Rogers & Thistlewaite, 1970; Sutton, 1982; Witte, 1991, 1993) researchers have largely ignored how to address the self-efficacy component of the message despite self-efficacy's role in many often-used health behavior change theories such as the Health Belief Model and the Theory of Planned Behavior (Fishbein, Cappella, & Hornik, 2002). This paper extends the current research on fear appeals by examining the effects of self-efficacy statements in fear appeal PSAs.

CHAPTER TWO

LITERATURE REVIEW

Fear Appeals

According to Hale and Dillard (1995), a fear appeal is a persuasive message that focuses on the harmful physical or social consequences of failing to comply with message recommendations. Researchers who have examined how well fear appeals work have had varying results due to the different variables they examine. One common variable researchers manipulate is the level of fear, which is exemplified by depicting an amputated ear versus a suspicious mole, (Janis, 1967; Leventhal, Safer, & Panagis, 1983). The other variable researchers commonly manipulate is the level of response efficacy, which is how strongly the message reinforces that the fear can be removed by taking the recommended action, for example that applying sunscreen reduces the probability of getting skin cancer versus putting on sunscreen is not time-efficient (Witte, 1991, 1993).

Fear appeals have been based on several theories throughout communication research. The earliest theories were drive theories which suggested tension creates a drive to reduce the tension and people would use any recommended action to reduce tension (Hovland, Janis & Kelly, 1953). Drive theory researchers concluded that moderate fear worked best, because too much tension created avoidance. When researchers discovered that strong fear appeals worked best, they developed the Protection Motivation Theory.

The Protection Motivation Theory differs from the drive theories due to its consideration of the affect and cognitions involved in individuals' interpretation of a message (Leventhal, 1970; Rogers,1975). Roger's Protection Motivation Theory postulates that protection motivation arises from the cognitive appraisal of three

components (Rogers, 1975). If the threat is appraised as severe, likely to occur, and can be alleviated, then protection motivation will be aroused and danger control triggered, which leads the individual to change their behavior in order to remove the threat. If a threat is not appraised as severe, likely to occur, or if nothing can be done to alleviate the threat, then no protection motivation would be aroused and there would be no change in behavioral intentions (Rogers, 1975). Witte (1997) states that none of the fear appeal theories, by themselves, could effectively explain when a fear appeal would work and when it wouldn't. She posited this because of the range of data that was being collected regarding fear appeals could not be explained by any one theory. She believed that there was an element missing from the current theories, which was efficacy. Witte (1991) created the Extended Parallel Process Model, which includes efficacy evaluations, in order to give a complete model of how and when fear messages will work.

According to the EPPM, a fear message contains four components: perceived susceptibility, which is an individuals' perception that they are at risk; perceived severity, which is the belief that the portrayed outcome is of consequence; response efficacy, which is the belief that the recommended action will remove the threat; and self-efficacy, which is the individuals' belief that they have the ability to perform the recommended action. Analysis of the EPPM frequently involves grouping perceived severity and susceptibility together as the threat component of the message and response and self-efficacy together as the efficacy portion of the message (Stephenson & Witte, 1998; Witte 1991; Witte, 1993). Witte (1997) proposes that to create behavior change, which occurs when individuals' perceive they need to change their behavior to remove the fear, the messages should contain both high threat and high efficacy. An individual's

perceived need to change a problematic behavior is often called danger control. If threat is high and efficacy is low, individuals will engage in defensive avoidance, and if a low threat is perceived no action will be taken, regardless of efficacy.

Researchers testing the EPPM create high and low efficacy conditions by manipulating the response efficacy statements in ads—that is, by manipulating how effective the recommended action is. A participant's response efficacy score is added to their self-efficacy score, which is their belief that they have the ability to perform the recommended response (Stephenson & Witte, 1998; Witte, 1991). Researchers using the EPPM have determined that participants who are in a high-efficacy condition, regardless of level of threat presented, tend to have higher perceptions of fear due to their ability to cognitively assess the fear in the message instead of avoiding it. In addition, participants in high efficacy conditions tend to have stronger negative attitudes towards the offending behaviors (Stephenson & Witte, 1998; Witte, 1997). On the other hand, participants who are in the low efficacy condition tend to report that the PSAs are manipulative. For example, that participants don't believe the messages are true and think the messages are designed only to scare them (Stephenson & Witte, 1998).

Despite the fact that there are four elements in the EPPM, there are only two elements that researchers often attempt to manipulate. The most commonly researched variables are the level of severity, which is how severe the depicted consequence is, (Janis, 1967; Leventhal et al, 1983) and the strength of the response efficacy message, which is how effective the recommended action is (Mewborn & Rogers, 1979; Rogers & Deckner, 1975; Rogers & Mewborn, 1976; Rogers & Thistlewaite, 1970; Sutton, 1982; Witte, 1991). Despite abounding evidence that self-efficacy is a key factor in behavior

change (Fishbein et al., 2002), attempts to manipulate individuals' perception of control, or self-efficacy, has largely been ignored. Witte (1993) posits that self-efficacy (an individuals' belief that they control the behavior in question) is an audience-based variable whereas response efficacy (the belief that following the advice given in a fear appeal will remove the threatened consequence) is a message-based variable. This makes it impossible for researchers to manipulate self-efficacy because it is an enduring trait. Albert Bandura's Social Cognitive Theory (1986), however, posits that individuals can increase their self-efficacy.

Self-Efficacy

Albert Bandura introduced the concept of self-efficacy through his Social Cognitive Theory and since its introduction it has been widely applied in health research as well as clinical practices. Bandura (1986, 1994) defines self-efficacy as people's perceptions about their own abilities to control what has an effect on their lives. This concept has been applied to a variety of situations, from controlling stress to choosing the right career. According to Bandura (1995), people can build self-efficacy through "mastery" experiences, by increasing positive affect, through vicarious experiences, and/or by social persuasion.

Bandura (1994) stated that the best way to acquire self-efficacy is through life-long mastery experiences, because if you have experienced success you can bounce back quicker from failures. Bandura cautions that failing before having success can undermine self-efficacy, but easy success can also cause negative results. He proposed that the best way to cultivate a strong sense of self-efficacy is to succeed through overcoming obstacles and persevering.

Another avenue to increasing self-efficacy that Bandura addresses is focusing on positive affective responses. Bandura states that positive moods enhance efficacy whereas negative moods diminish efficacy. Therefore, Bandura posits that self-efficacy can be fostered through thinking positively and by interpreting physical reactions positively. For example, an individual might interpret an aroused feeling when faced with a new situation as either excitement or nervousness. Perceiving it as excitement would lead to higher self-efficacy. While the previous two avenues to increased self-efficacy required an individual to physically experience something, the last two ways to increasing self-efficacy, through vicarious experiences and by social persuasion, can be accomplished through the media.

In order to create a vicarious experience, an individual must observe someone who they perceive to be similar to themselves successfully performing a behavior and being rewarded as a result. This concept of learning through watching others is called "modeling" in Social Cognitive Theory (Bandura, 1986) which states that the more similar the model is to an individual, the more likely individuals are to learn the modeled behavior. Therefore, the more similar the successful model is to the targeted audience members, the more likely an individual is to increase their self-efficacy through vicarious experiences.

Key to this study is Bandura's views on social persuasion, because in fear appeals the characters are often punished, not rewarded. Bandura (1995) posits that having others tell us we can do something, or we have control over something, can also increase our self-efficacy, but he cautions that social persuasion can also have detrimental effects. This can occur if we become so convinced that we have the ability to do something that

we attempt a task that is too difficult and become discouraged. This may be true for changing a health behavior, for example, if it is attempted in too drastic of steps. For example, if someone attempts to quit smoking "cold turkey," the individual could become discouraged and resume the habit in full force (Staring & Breteler, 2004). Bandura also posits that individuals who have self-doubt to begin with are psychologically more likely to believe negative statements about their abilities than positive statements. This is the case because they often will only engage in activities that require minimum motivation, thereby reinforcing their low-efficacy beliefs.

Self-efficacy is a key concept to understand because it influences human functioning in a variety of ways. Bandura has identified four processes in which self-efficacy can play an instrumental role: cognitive, motivational, affective, and selection process (Bandura, 1995). In cognitive processes, the higher the sense of self-efficacy the higher the goals people set for themselves. In motivational processes, self-efficacy determines not only the goals people set for themselves but also the amount of effort, the length of perseverance when faced with difficulty, and their resilience to failures. In affective processes, self-efficacy helps exercise control over negative emotions such as anxiety, depression and stress. In selection processes, perceived self-efficacy determines the kind of life people choose to live and the kind of occupation they choose to pursue.

Role of Self-Efficacy in Health

Bandura (1995, 1997, 2004) also has emphasized the health-promotive role of self-efficacy. He notes that self-efficacy can have an influence on our health through two different mechanisms; biopyschosocial responses (such as an individual's ability to control stress) and behavior change (such as the ability to stop smoking). Self-efficacy's

role in health behavior change is so well accepted that is has been incorporated in some of the most often-used theories regarding health behavior change such as the Health Belief Model and Theory of Planned Behavior (Fishbein et al, 2002).

Bandura (1997) posits that self-efficacy influences behavior change throughout the decision-making process. For example, it can effect whether or not someone plans to change a behavior, if they can stay motivated long enough to actually change the behavior, their ability to regain control after setbacks, and how successful they are in maintaining the change that was achieved.

According to Bandura, the first step to changing an unhealthy health practice is to believe that you have the ability to do so. Bandura (1997) states that often people are concerned about the health consequences of their actions, but perceive themselves as unable to do anything about it. If an individual does believe they have control, the next step is to believe that they have the control to stick with it and then do it, because behavior change does not matter unless the change is sustained (Bandura, 1997).

While researchers have looked at self-efficacy in relation to a range of health behaviors, it has been extremely useful to help explain addictive health behaviors and how to treat them (Annis & Davis, 1988; Blume, Schmaling & Marlatt, 2003; Dorsey, Miller & Scherer, 1999; Fagan, Eisenburg, Frazier, Stoddard, Avrunin & Sorensen, 2003; Hasking & Oei, 2002; Maibach, Flora & Nass, 1991; Mudde, Kok & Strecher, 1995; Oei & Burrow, 2000; Oei & Morawsak, 2004; Skuttle, 1999; Staring & Breteler, 2004). Research examining both smoking cessation and alcoholism treatment, for example, point to self-efficacy as a key factor in successful treatment and lasting behavior change (e.g. Blume et al., 2003; Staring & Breteler, 2004).

Researchers have extensively examined the role of self-efficacy in smoking cessation programs. Several researchers have stated that self-efficacy in regard to the ability to quit smoking is often best achieved through smoking cessation programs, and perceived self-efficacy has consistently been shown to have the strongest predictive strength when looking at intention to quit smoking and follow through (Mudde et al., 1995; Schwarzer & Fuchs, 1995). Recent research has also repeated previously found results that perceived self-efficacy to quit smoking is the best predictor of those who will (Staring & Breteler, 2004).

Staring and Breteler (2004) demonstrated that individuals who completed smoking cessation treatments with high self-efficacy scores were more likely to be successful at quitting than those with lower self-efficacy and also those with very high self-efficacy scores. The researchers conclude that individuals with very high self-efficacy scores tend to be unrealistic then relapse after a failure. Fagan, Eisenburg, Frazier, Stoddard, Avrunin and Sorensen (2003) also found results which support the social persuasion aspect of self-efficacy. Fagan et al., (2003) determined that among adolescent smokers, as self-efficacy went down, they became more dependant on nicotine. However, their self-efficacy was increased by pressure from friends to quit smoking. This supports Bandura's theory that self-efficacy can be created through reinforcement by others, which leads to the belief that self-efficacy can be enhanced through the media.

A look at the role of media in the creation of self-efficacy has demonstrated that mere exposure to health campaigns can have a short-term positive effect on self-efficacy (Agha, 2003; Maibach, Flora & Nass, 1991). Agha (2003) and Maibach, Flora and Nass

(1991) determined that mere exposure to health campaign messages increased self-efficacy over an extended period of time. This indicates that self-efficacy's effect in health messages is deserving of more research.

The impact of self-efficacy on other addictive behaviors, such as drinking alcohol also has been examined by researchers. Skuttle (1999) discovered that self-efficacy scores were negatively correlated with perceived benefits from drinking and amounts of alcohol abuse. In other words, the lower self-efficacy scores individuals had, the higher perceived benefits from drinking as well as the higher amounts of abuse they exhibited. Researchers obtained similar results using a college-aged sample (Blume et al., 2003; Dorsey et al., 1999), which demonstrates that an individuals' self-efficacy plays a key role when engaging in addictive behaviors. That is, those who believe they have control over their behavior appear to exert that control.

Oei and Burrow (2000) also examined drinking refusal self-efficacy to confirm that drinking refusal self-efficacy was measuring self-efficacy regarding drinking behaviors rather than other types of substance abuses such as smoking. Drinking refusal self-efficacy is defined as individuals' belief that they have control over their drinking behavior and have the ability to refuse a drink. Oei and Burrow's research once again indicated that self-efficacy was a critical factor in alcohol consumption. Of the four variables they measured, alcohol expectancies, smoking refusal self-efficacy, automatic thoughts and drinking refusal self-efficacy, only drinking refusal self-efficacy was significantly correlated with alcohol consumption.

In addition, a post hoc regression analysis revealed alcohol expectancies, which are positive outcomes associated with drinking, were also significantly correlated to

alcohol consumption; however, the analysis also indicated a strong negative relationship between self-efficacy and alcohol expectancies. This indicates that the more individuals' believe that they can control their drinking, the less positive outcomes they associate with drinking. Therefore, the authors speculated that alcohol consumption would be better predicted by self-efficacy than alcohol expectancies. A follow-up study (Oei & Morawsak, 2004) found that self-efficacy was indeed a better predictor than alcohol expectancies for alcohol consumption. Self-efficacy predicted both amount and frequency of consumption while alcohol expectancies only predicted whether or not they would drink at all. This is important because it appears that targeting an individual's self-efficacy is the most effective route to changing problematic behaviors.

The previous research cited indicates that when participants experience higher-levels of self-efficacy they are more likely to engage in positive health behaviors. Research also indicates that participants may be able to elevate their levels of self-efficacy through media sources.

Hypotheses

Bandura's concept of social persuasion posits that an individual's sense of self-efficacy can be increased by others telling them that they are in charge and in control of the situation. Therefore, after viewing PSAs that include a self-efficacy statement, participants will indicate higher levels of self-efficacy than those who do not see the self-efficacy affirming message.

H1: Participants in the self-efficacy condition will report higher levels of smoking refusal self-efficacy than participants in the no-efficacy condition.

Previous research has demonstrated that when participants have a high sense of self-efficacy regarding their control over an unhealthy behavior, their positive expectancies for performing that behavior decrease (Austin & Johnson, 1997a, 1997b). This hypothesis is also supported by a variety of the research regarding the effects of self-efficacy during treatment for addictive behaviors, where those with high self-efficacy had lower positive expectancies for the substance (Oei & Morawsak, 2004; Skuttle, 1991). In addition, Witte and colleagues work suggests that individuals with higher efficacy have stronger negative attitudes toward the problematic behavior in question (Stephenson & Witte, 1998; Witte, 1991).

H2: Participants in the self-efficacy condition will report lower expectancies associated with tobacco use than participants in the no efficacy condition.

In keeping with the results of Witte and Stephenson (1998), participants in the self-efficacy condition will be able to acknowledge the fear presented in the ads and cognitively process it because their sense of control over the situation has been primed, whereas the participants in the no-efficacy condition are more likely to become defensive.

H3: Participants in the self-efficacy condition will indicate higher perceptions of fear than participants in the no-efficacy condition.

Witte and colleagues have demonstrated that when participants are put in a low efficacy situation, they often perceive that the messages are manipulative, which would imply that that they are not realistic. This paper proposes that the same will be true when the self-efficacy as opposed to the response efficacy is manipulated. This is hypothesized because previous research utilizing the EPPM sums an individuals' self-efficacy and

response efficacy score to create their efficacy perceptions, therefore, an increase in self-efficacy as opposed to response efficacy should still have the same overall "efficacy" effect.

H4: Participants in the self-efficacy condition will indicate higher levels of realism than participants in the no-efficacy condition.

Witte and colleagues have consistently demonstrated that in order to change a behavior, participants must have high efficacy. Bandura also posits that individual's must have high self-efficacy to change a behavior, which has been supported by research with smoking cessation and alcoholism treatment (i.e. Staring & Breteler, 2004; Skuttle, 1999). However, this experiment is unable to test actual behavior change, therefore it is predicted that the efficacy condition will affect their behavioral intentions.

H5: Participants in the self-efficacy condition will indicate higher levels of behavioral intention than participants in the no-efficacy condition.

A key aspect of Social Cognitive Theory is that the models must be similar to the audience in order for the message to be processed and learned from, therefore those who perceive the characters as more similar, will process the message further and indicate higher levels of behavioral intentions.

H6: Participants who perceive the characters as similar to themselves will indicate higher levels of behavioral intention than participants who do not perceive the characters as similar to themselves.

CHAPTER THREE

METHOD

Two hundred and ninety-two undergraduate students enrolled in a two-hundred-level communication course required for certification into communication as a major participated either for extra credit or partial course credit. Other extra credit and course credit alternatives were available. Participant's age ranged from 18 to 41 with a mean age of 20.24. Both genders were represented with 38.7% participants indicating they were male and 61% indicating they were female. One participant did not indicate his or her gender. One hundred ninety-four participants classified themselves as nonsmokers, 50 indicated they were social smokers, 17 indicated they were regular smokers, 14 indicated they were former smokers and 17 did not answer the question.

For this study, a between-groups, post-test only experimental design was utilized. The factor was exposure to self-efficacy messages. Participants were randomly assigned to the condition based on their order. Participants first completed a questionnaire that measured their rebellious tendencies and their general self-efficacy. Based on their condition, participants then viewed the appropriate PSAs and completed the posttest.

Stimuli

Participants in the self-efficacy condition viewed five anti-tobacco PSAs that were created and used by the Washington state Department of Health. The PSAs were manipulated to include a self-efficacy statement on the taglines of the PSAs. The titles of the PSAs are Rotting, Boy Smokes You, Rowboat, Roulette, and Bus. These five ads were chosen from eight ads that were viewed by 6th and 8th graders in the spring of 2004, and were determined to contain high levels of fear (Austin & Pinkleton, unpublished).

Rotting depicts a female smoking in a public bathroom and portrays the health consequences of smoking appearing on the outside of her body, i.e. tumors growing on her face, tar flowing out of her mouth, teeth discoloring. The voice-over in the ad describes what's happening and poses the question: "If you had to see your body slowly but surely rotting away, would you still smoke?" The tagline that appears when the question is asked is "TOBBACCO SMOKES YOU, Unfilteredtv.com." The self-efficacy tagline was "You Control Your Future."

Boy Smokes You depicts a male lighting a cigarette at a party and then follows the smoke through his body portraying the health consequences of the smoke, i.e. heart beating faster, lungs filling with tar. The voice-over of the ad states, in addition to showing a graphic which states "It's the truth. It's an outrage. Tobacco Smokes You." The self-efficacy tagline was "You Can Make the Right Decision."

Rowboat depicts two males and one female in a boat out on a lake. The three light cigarettes and then a hole in the bottom of the boat is shown, and the boat begins to fill with water. One of the males pulls out the life jackets, but only two are there. The ad concludes with a voice-over stating "1 in 3 kids who smokes will die from it." The tagline shows a graphic which states "TOBBACCO SMOKES YOU, Unfilteredtv.com." The self-efficacy tagline was "You Can Stay Afloat."

Roulette depicts a roulette wheel spinning and images of two males and a female smoking each taking up a third of the wheel. The roulette ball spins around the edge of the wheel and when the ball drops the ad cuts to a black screen with the tagline "TOBBACCO SMOKES YOU, Unfilteredtv.com" and the voice-over states "1 in 3 kids

who smoke will die from it." The self-efficacy tagline was "You Can Change Your Luck."

Bus depicts two females and a male waiting at a bus stop. When the three light cigarettes the bus door opens and they are invited onto the bus which is filled with people smoking. One of the female characters tells a fellow passenger that she wants off the bus, and the passenger replies that they all do. The ad concludes with a graphic which reads "Most kids think they will quit smoking within 5 years, but 70% are still smoking" and then cuts to a black screen with the tagline "TOBBACCO SMOKES YOU, Unfilteredtv.com." The self-efficacy tagline was "You Can Stay Off of the Bus."

Participants in the no-efficacy condition viewed the same five PSAs without the self-efficacy tagline.

EPPM Variables

The four aspects of a fear appeal, according to Witte and colleagues, were measured to verify that results are due to the efficacy manipulation, and not a difference in any of the other EPPM variables. All the measures are modified from previous research on the EPPM and have been found to be reliable with Cronbach's alpha scores ranging from .73 to .89 (Witte, 1991; Witte, 1993; Witte & Stephenson, 1998).

Self-efficacy. Self-efficacy is an aspect of the EPPM but is also expected to change based on the manipulation so measures for self-efficacy can be found below in the "dependant variables" section.

Response efficacy. Items that measured response efficacy, which has been conceptualized as the belief that the recommended response will eliminate the fearful consequences, were measured by four questions on a seven-point scale and include "Not

smoking decreases my risk for cancer," "Not smoking decreases my risk for heart disease," "Not smoking is healthy," and "Avoiding tobacco smoke will help me live longer." The Cronbach's alpha for the four items was .50. As expected, there were no differences among conditions, F (2, 291) = 1.26, p = .29.

Perceived severity. Items that measured perceived severity, which has been conceptualized as an individual's beliefs about the significance of the threat, were measured by four questions on a seven-point scale and include "Using tobacco is dangerous," "Using tobacco is harmful to my health," "Using tobacco causes cancer," and "Using tobacco is related to heart disease." The Cronbach's alpha for the four items was .63, and as expected there were no differences among the conditions, F (2, 291) = .75, p = .48.

Perceived susceptibility. Items that measured perceived susceptibility, which has been conceptualized as beliefs about an individual's risk of experiencing a threat, were measured by four questions on a seven-point scale and include "I am likely to get a tobacco related cancer," "I will experience a negative effect of cancer sometime in my life," "I am likely to develop health problems related to tobacco use," and "I am likely to get a tobacco related disease sometime in my life." The Cronbach's alpha for the four items was .73, and as expected there were no differences among the conditions F (2, 291) = .40 p = .67.

Dependant Variables

Smoking refusal self-efficacy. SRSE has been conceptualized as an individuals' belief that they have control over their smoking behavior and have the ability to refuse a cigarette (Schwarzer & Fuchs,1995). SRSE was tested in the posttest using the following

eleven questions on a seven-point scale. The first six items were created by Kremers, Mudde and de Vries (2001) and found to have a Cronbach's alpha score of .93. The remaining five items were modified from a drinking-refusal self-efficacy scale created Young and Oei (1996) and found to have a Cronbach's alpha of .85 (Lee & Hively, 2005). The items from Kremmers et al. are "I can refuse a cigarette when with others who smoke," "I can refuse a cigarette when with friends who smoke," "I can refuse a cigarette when friends offer me a cigarette," "I can refuse a cigarette when I feel upset," "I can refuse a cigarette when I feel depressed," and "I can refuse a cigarette when I feel worried." The items modified from Young and Oei are "I have control over my smoking behavior," "I am sure I can control how much I smoke at a party," "I can stop smoking whenever I want," "I can control how much I smoke more than the average person," and "I can refuse a cigarette even if my friends want me to smoke." The Cronbach's alpha for the eleven items was .86.

Realism. Realism has been conceptually defined as the extent to which participants perceive the portrayals in the PSAs as realistic. Realism was measured by four questions on a seven-point scale of strongly agree to strongly disagree which have been modified from measures used by Austin and colleagues (i.e. Austin, Miller, Silva, Guerra, Geisler, & Gamboa, et al., 2002) and found to be reliable with Cronbach's alpha scores ranging from .72 - .75. The items include "People in the ads do things that real people do," "People in the ads act like real people do," "The people in the ads look like real people," and "The portrayals in the ads are realistic." The Cronbach's alpha for the four items was .78.

Expectancies. Expectancies, or individuals' beliefs about the positive outcomes of tobacco use, were measured by six questions on a seven-point scale of strongly agree to strongly disagree which have been modified from items used by Austin and colleagues and found to be reliable with Cronbach's alpha scores ranging from .75 to .85. The items include "Smoking makes you look cool," "Smoking helps you lose weight," "Smoking helps you relax," "Using tobacco helps you fit in," "A cigarette is a good reward after a long day," and "Smoking is something that is fun to do with friends." The Cronbach's alpha for the six items was .73.

Perceptions of Fear. Perceptions of fear has been conceptualized as an emotional reaction that occurs when an individual perceives a threat that is personally relevant (Witte, 1997). Perceptions of fear were measured by five questions on a seven-point scale modified from Lee and Hively (2005) and found to have a Cronbach's alpha of .82. The items are "These ads made me think a great deal about the dangers of using tobacco," "These ads scare me about the dangers of smoking," "I found myself feeling very frightened when I watched these ads," "Ads like these truly make me afraid to smoke," and "These ads remind me of how risky it is to smoke." The Cronbach's alpha for the five items was .92.

Behavioral Intention. Behavioral intention is conceptualized as the participants' intention to change their smoking behavior if they are smokers, or their intent to try to influence others not to smoke if they are non-smokers. Items for smokers were modified from items used by Lee and Hively (2005) and found to have a Cronbach's alpha score of .83, and the items for non-smokers were modified from items used by Austin and colleagues and found to be reliable. The items for smokers include, "I plan on changing

my smoking behavior soon," "I don't plan on changing my smoking behavior unless I see my health suffering," and "I plan on changing my smoking behavior by the time I leave college." The Cronbach's alpha for the three items, using only participants who currently smoke, was .71. The items for non-smokers include "I intend to talk to others about their smoking behavior," "I plan on talking to others about the harmful effects of tobacco," and "I intend to talk to my family about their smoking behavior." The Cronbach's alpha for the three items was .79.

Similarity. Similarity was conceptualized as the extent to which participants perceived that the characters in the PSAs were similar to themselves. The items were measured by four questions on a seven-point scale of strongly agree to strongly disagree which have been modified from items used by Austin and colleagues and found to be reliable. The items include "I do things that the people in the ads do," "I like the things that the people in the ads like," "The people in the ads were like me," and "The people in the ads face the same situations as I do." The Cronbach's alpha for the four items was .73. Participants were classified as having high or low levels of similarity by separating dividing them based on the midpoint of the scale.

Demographics. Demographic information collected included the gender, age, year in school, average grades received, family income and smoking status/behavior of the participants.

CHAPTER FOUR

RESULTS

Results were obtained by entering constructs into a one-way ANOVA with planned contrasts. Two orthogonal contrasts were conducted with the following contrast coefficients: efficacy, 1, no-efficacy, -1, control, 0, and efficacy, -1, no-efficacy, -1, control, 2. Most of the hypothesis were tested by looking at the first set of contrast coefficients.

Manipulation Check

In order to asses whether or not participants read the self-efficacy tagline participants engaged in an aided recall exercise. Participants were asked to circle all of the graphics they remember seeing for each PSA given five responses. Responses included: the tagline created by the ad company which appears on each PSA, Tobacco Smokes You; the self-efficacy statement; two statements that were verbalized in the PSA; and one message that did not appear in the PSA. Results of a t-test indicate that the manipulation was successful t (168) = 10.80, p <.001.

H1: Participants in the self-efficacy condition will report higher levels of smoking refusal self-efficacy than participants in the no-efficacy condition.

Results of a contrast analysis indicate that there was not a significant condition effect for smoking refusal self-efficacy t (289) = .09, p = .94. When only participants who identified themselves as social or regular tobacco users were analyzed, results were not significant but were in the predicted direction t (64) = -.42, p = .34.

H2: Participants in the self-efficacy condition will report lower expectancies associated with tobacco use than participants in the no-efficacy condition.

Results indicated that there was not a significant condition effect for tobacco expectancies for all participants t (289) = -.24, p = .41, or for participants who self-identified as social or regular tobacco users t (64) = -1.17, p = .15. Further analysis revealed that there was a significant difference for those who have tried tobacco and those who have not, t (286) = -6.28, p < .001. Participants who had tried tobacco (n = 204, M = 15.95, *s.d.* = 7.04) indicated higher tobacco expectancies than participants who had not tried tobacco (n = 84, M = 10.73, *s.d.* = 4.51).

H3: Participants in the self-efficacy condition will indicate higher perceptions of fear than participants in the no-efficacy condition.

Results indicated that there was a significant condition effect for perceptions of fear F (2, 291) = 149.51. p < .001. Further analysis revealed that the differences that emerged were due to a higher perception of fear in the self-efficacy condition (n= 97, M = 24.35, *s.d* = 7.26) and the no-efficacy condition (n = 98, M = 23.58, *s.d.* = 8.2) compared to the control condition (n = 97, M = 8.52, *s.d.* = 5.94) t (289) = -17.28, p < .001. The difference between the self-efficacy and no-efficacy conditions was not significant, t (289) = -.79, p = .23, but results were in the predicted direction.

H4: Participants in the self-efficacy condition will indicate higher levels of realism than participants in the no-efficacy condition.

Results indicate there was a significant condition effect for perceptions of realism F (2, 291) = 14.08, p < .001. Further analysis revealed that the differences that emerged were due to higher perceptions of realism in the self-efficacy condition (n= 97, M = 19.32, *s.d* = 5.85) and the no-efficacy condition (n = 98, M = 19.26, *s.d.* = 5.66) compared to the control condition (n = 97, M = 15.57, *s.d.* = 5.41) t (289) = 1.40, p < .001. The difference

between the self-efficacy and no-efficacy conditions was not significant, t (289) = -.08, p = .46, but were in the predicted direction. When examining participants who identified themselves as social or regular smokers, the results again were not significant but supported directionally t (64) = -.40, p = .35.

H5: Participants in the self-efficacy condition will indicate higher levels of behavioral intention than participants in the no-efficacy condition.

Results indicate that there was not a significant condition effect for behavioral intention t (282) = -.22, p = .41. When participants who identified themselves as social or regular smokers were examined, there still was not a significant effect, t (64) = -.84, p = .20, but were in the predicted direction.

H6: Participants who perceive the characters as similar to themselves will indicate higher levels of behavioral intention than participants who do not perceive the characters as similar to themselves.

Results indicate that there was a significant effect for similarity, t (188) = -2.50, p <.01. Participants were divided based on the scale midpoint to either high or low similarity. Participants who perceived the characters were highly similar (n = 46, M = 12.22, *s.d.* = 4.97) indicated higher levels of intention to change their behavior than participants who perceived the characters to be low in similarity to themselves (n = 144, M = 10.01, *s.d.* = 5.92).

Table 1

Means for all participants and only tobacco users

	All participants			Self identified social and regular tobacco users		
	N	Mean	Standard deviation	N	Mean	Standard deviation
Perceptions of Fear:		***			***	
Efficacy	97	24.35	7.26	20	22.00	8.32
No-efficacy	98	23.58	8.20	23	22.39	8.78
Control	97	**8.52**	5.94	24	**6.92**	3.41
Realism:		***			**	
Efficacy	97	19.32	5.85	20	18.90	6.09
No-efficacy	98	19.26	5.66	23	18.17	5.56
Control	97	**15.57**	5.41	24	**14.71**	6.27
Smoking Refusal Self-Efficacy:						
Efficacy	97	64.22	12.23	20	53.90	17.96
No-efficacy	98	64.38	14.43	23	51.70	18.12
Control	97	65.72	12.62	24	58.45	15.89
Tobacco Expectancies:						
Efficacy	97	14.74	6.44	20	21.00	5.29
No-efficacy	98	14.51	7.13	23	18.91	6.37
Control	97	13.98	6.94	24	20.42	7.23
Intention to change behavior:						
Efficacy	97	10.63	5.01	20	15.40	4.16
No-efficacy	98	10.47	5.58	23	14.17	5.04
Control	97	9.87	4.38	24	13.33	5.00

*** = $p < .001$, * * = $p < .01$

CHAPTER FIVE

DISCUSSION

This experiment was designed to demonstrate that including a self-efficacy statement in anti-tobacco fear appeal PSAs would lead to better processing of the message evidenced by increased smoking refusal self-efficacy, increased intention to change behavior, lower tobacco expectancies, higher perceptions of realism and higher perceptions of fear. Results indicated that the hypotheses did not reach significance, but they were directionally supported for perceptions of fear, perceptions of realism, smoking-refusal self-efficacy, and intention to change their behavior.

The first hypothesis predicted that participants exposed to self-efficacy statements would indicate higher levels of smoking-refusal self-efficacy. It was determined that this hypothesis was not statistically supported but results did indicate the predicted direction when only participants who identified themselves as social or regular smokers were analyzed. It is possible that the effects of the self-efficacy statements could be significant if a different presentational method was used.

Several researchers have examined the effect of self-efficacy in minimal interventions, which include PSAs (Maibach, Flora & Nass, 1991; Bamford, Booth, McGuire & Salmon, 2005). They posit that when the results are not significant, it does not necessarily indicate that the intervention was not effective, but often participants were not exposed to the intervention for long enough. Therefore, future research should be conducted where participants are exposed to commercials containing a self-efficacy message over an extended period of time. For example, Maibach, Flora and Nass (1991) were able to get significant findings using minimal interventions only after participants

were exposed to the messages for five years with their normal television viewing habits, and Bamford, Booth, McGuire and Salmon (2005) obtained results after a 6 to 8 week period. Finding directional results after a single exposure, while not at all definitive, should indicate the need for more attention through future research projects.

Previous research also has examined the impact of mediums other than television on health behaviors (Austin, 1995: Schooler, Chaffee, Flora & Roser, 1998) which also would be a beneficial avenue for future research in regards to boosting self-efficacy. Austin (1995) asserts that consistent messages need to come from a variety of sources in order to have the most impact. A potential future study could include exposing participants to television and print advertisements, in addition to interpersonal discussions which could potentially amplify the results by reaching audience members that may not be influenced through only television messages.

The second hypothesis predicted that participants in the self-efficacy condition would report lower tobacco expectancies than participants in the no-efficacy condition. It was found that the only significant difference was between participants who had tried tobacco and those who had not, regardless of what condition they were assigned to. This result is consistent with the theory of cognitive dissonance (Festinger, 1957). Cognitive dissonance posits that when individuals engage in a behavior which is known to be dangerous, they value it more positively. This could indicate that changing expectancies could take significant time and effects may have to be mediated through other variables, such as self-efficacy.

The third hypothesis predicted that participants in the self-efficacy condition would indicate higher levels of fear than participants in the no-efficacy condition. This

hypothesis was not statistically supported, but the results were in the predicted direction. What was significant was the difference in perceptions of fear in the control condition and the two experimental conditions. The difference in perceptions of fear from soup ads to graphic anti-tobacco ads is not surprising, but the directional support for the difference in ads that contained self-efficacy messages compared to the no-efficacy condition is encouraging. It is possible that the results could reach significance, as with smoking-refusal self-efficacy, with multiple exposures or using a variety or mediums. A higher perception of fear has previously been interpreted by Witte and colleagues as more in-depth processing of the message, which would be encouraging for pro-health messages.

The fourth hypothesis predicted that participants in the self-efficacy condition would have higher perceptions of realism than participants in the no-efficacy condition. Again, this hypothesis was not statistically supported, but the results were in the predicted direction and significant differences emerged between the control and experimental conditions. Therefore, not only are anti-tobacco ads perceived as more realistic than other commercials, when an efficacy message is utilized, they are even more realistic, although not at a significant level. This is important because Austin and colleagues have consistently shown perceptions of realism leads to further processing of mediated messages. These results highlight the fact that more research should be conducted on how message processing differs based on what persuasive strategy is utilized since results differed from the PSAs to the neutral commercials.

The fifth hypothesis predicted that participants in the self-efficacy condition would indicate higher levels of intention to change their behavior than participants in the no-efficacy condition. This hypothesis was not supported, but was in the predicted

direction when self-identified social and regular smokers were analyzed. When this result is taken in conjunction with the results of the first hypothesis, it lends directional support to the EPPM, but in a new way.

This study adds to the EPPM by demonstrating that self-efficacy can be affected, in the short term, through mediated messages. These results give directional support that demonstrates efficacy levels may be temporarily boosted by media messages, which can lead to more desirable processing of the messages from a public health standpoint. It confirmed the EPPM by demonstrating that this short term effect on self-efficacy leads to a higher intention to change behavior, although again only directionally. This is consistent with the traditional EPPM hypothesis, which is that increased efficacy, although usually response efficacy, will lead to higher behavioral intentions. Future research should examine the long-term effects of these messages, possibly through week and month returns. That can lead to testing effects, however, it would further our understanding of the potential impact of self-efficacy statements in mediated messages.

The sixth hypothesis predicted that participants who perceived the characters in the PSAs as similar to themselves would indicate higher levels of intention to change their behavior. This hypothesis was supported. This result confirms the importance of perceived similarity to characters in message processing. This not only confirms Social Cognitive Theory, but this finding is important for message designers and indicates that similarity is a variable that should be considered when pre-testing campaign messages. This has significant social impact when designing health messages because behavioral intentions mean more than increased sales of a product.

Limitations of this study include that results are based on a college-student population and therefore cannot be generalized to the general public. Another limitation is the small and unequal cell sizes for the participants who were current tobacco users. More research needs to be conducted on this population, especially for anti-tobacco messages as these individuals should be the primary target audience. Another limitation includes a threat to construct validity, through turning the continuous variable of similarity into the two categories of high and low perceived similarity; however, this is a strategy that is often used in our field.

In sum, this research provides initial evidence for the benefit of using self-efficacy statements in health messages to improve behavioral intentions. It extends current research on the extended parallel process model by demonstrating that self-efficacy in addition to response efficacy can be manipulated to increase behavioral intentions within health messages. It also provides a new avenue for health campaign research with several suggested directions. While this study should not be considered the final word, or definitive evidence, on the use of self-efficacy statements, it does provide intriguing results worthy of more research. In addition, while this project did not provide conclusive evidence for the use of self-efficacy statements, it did provide conclusive evidence of the importance of similarity to characters in mediated messages and evidence that PSAs are interpreted differently from other commercials. Message designers should continue to keep this in mind while designing messages in order to create the most effective messages possible.

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APPENDIX

Consent Form

We are asking you to participate in a project that has been approved by the Washington State University Institutional Review Board for human subjects participation. We are gathering information about your opinions about what is effective and not effective in public service announcements.

Your participation is greatly appreciated. This session should take about a half an hour and will involve watching some advertisements and filling out a survey. Your participation is voluntary so if you are uncomfortable answering any of the questions in the survey, you do not have to answer them. You can leave the study at any time and will still receive your extra credit.

Your identity will remain confidential. If you have questions about your rights as a participant, you can call the WSU Institutional Research Board at 509-335-9661. If you have any questions you can contact the principle investigator, Myiah Hively, at 335-3658 or myiahjo@yahoo.com.

If you agree to participate please sign below:

_____

Name Date

Please indicate how much you agree with the following statements on a scale of 1 to 7, where 1 means strongly disagree and 7 means strongly agree. Your answers are confidential so please answer the questions as honestly as possible.		
1	I feel insecure about my ability to do things.	
2	I like wild parties.	
3	I like driving fast.	
4	I am rebellious.	
5	I avoid facing difficulties.	
6	I believe rules are meant to be broken.	
7	I am a self-reliant person.	
8	I often do things spontaneously.	
9	I would love to have new and exciting experiences, even if they are illegal.	
10	Failure just makes me try harder.	
11	Life without danger would be too dull for me.	
12	I like people who are partiers.	
13	I have control over my life.	
14	I enjoy doing things that others find dangerous.	
15	I give up easily.	
16	I sometimes like to do things that are frightening.	
19	When I have something unpleasant to do, I stick to it until I finish it.	
20	I'm likely to do drugs when I party.	
22	I give up on things before completing them.	
23	Having alcohol is the key to having a really good party.	

ID # _____

Please circle all the graphics you saw **on the** first ad **(boy smoking at a party)**

1. Tobacco smokes you
2. 1 in 3 kids who smokes will die from it
3. You can make the right decision
4. Smoking gives you cancer
5. Don't smoke

Please circle **all** the graphics you **saw** on the second ad (girl smoking in a bathroom)

1. You control your future
2. Don't smoke
3. Tar builds up in your lungs
4. Tobacco smokes you
5. It's the truth, it's an outrage

Please circle **all** the graphics you **saw** on the third ad (roulette wheel spinning)

1. It's the truth, it's an outrage
2. Tobacco smokes you
3. You can change your luck
4. Don't smoke
5. You can make the right decision

Please circle **all** the graphics you **saw** on the fourth ad (three kids in a boat)

1. Don't smoke
2. You can stay afloat
3. It's the truth, its an outrage
4. Tobacco smokes you
5. You smoke, you die

Please circle **all** the graphics you **saw** on the fifth ad (three kids on a bus)

1. 1 in 3 kids who smoke will die from it
2. You can stay off the bus
3. You can't quit
4. Tobacco smokes you
5. Don't smoke

Please indicate how much you agree with the following statements on a scale of 1 to 7, where 1 means strongly disagree and 7 means strongly agree. Your answers are confidential so please answer the questions as honestly as possible.

Strongly Disagree 1	2	3	4	5	6	7 Strongly Agree	
1	The people in the ads looked happy.						
2	Using tobacco is dangerous.						
3	Smoking makes you look cool.						
4	I do things that the people in the ads do.						
5	Not smoking is healthy.						
6	These ads made me think a great deal about the dangers of using tobacco.						
7	I would like to do the things that people in the ads do.						

8	People in the ads do things that real people do.	
9	I plan on changing my smoking behavior soon.	
10	Most people my age have smoked before.	
Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree		
11	I am likely to get a tobacco related cancer.	
12	I have control over my smoking behavior.	
13	The portrayals in the ads are realistic.	
14	I like these ads very much.	
15	To stay, or become, a non-smoker is very difficult.	
16	Not smoking decreases my risk for cancer.	
17	I am certain I can refuse a cigarette when with others who smoke.	
18	Smoking helps you relax.	
19	The people in the ads face the same situations as I do.	
20	I plan on talking to others about the harmful effects of tobacco.	
21	I can stop smoking whenever I want.	
22	The people in the ads looked like they were having fun.	
23	Using tobacco causes cancer.	
24	I found myself feeling very frightened when I watched these ads.	
25	I am likely to develop health problems related to tobacco use.	
26	Smoking is something that is fun to do with friends.	
27	I would like to look like the characters in the ads.	
28	I am certain I can refuse a cigarette when I feel upset.	
29	I like the things that the people in the ads like.	
30	Most people my age smoke regularly.	
31	Ads like these truly make me afraid to smoke.	
32	Not smoking decreases my risk for heart disease.	
33	These ads are cool.	
34	I can refuse a cigarette even if my friends want me to smoke.	
35	Using tobacco is harmful to my health.	
36	A cigarette is a good reward after a long day.	
37	People in the ads act like real people do.	
38	I can relate myself to the ads.	
39	I am certain I can refuse a cigarette when I feel worried.	
40	These ads scare me about the dangers of smoking.	
41	The people in the ads are attractive.	
42	I plan on changing my smoking behavior by the time I leave college.	
43	I will experience a negative effect of cancer sometime in my life.	
44	I am certain I can refuse a cigarette when with friends who smoke.	
45	I would like to be like the characters in the ads.	
46	I intend to talk to others about their smoking behavior.	
47	I am sure I can control how much I smoke at a party.	
48	Most of my friends smoke.	
49	These ads remind me of how risky it is to smoke.	

50	The portrayals in the ads are possible.	
51	Smoking helps you lose weight.	
52	I don't plan on changing my smoking behavior unless I see my health suffering.	
53	I am certain I can refuse a cigarette when friends offer me a cigarette.	
54	The people in the ads seem to be popular.	
55	Using tobacco is related to heart disease.	
Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree		
56	The people in the ads were like me.	
57	I intend to talk to my family about their smoking behavior.	
58	It would be fun to be one of the people in the ads I saw.	
59	I am likely to get a tobacco related disease sometime in my life.	
60	The people in the ads look like real people.	
61	I am certain I can refuse a cigarette when I feel depressed.	
62	Most of my friends have smoked before.	
63	Using tobacco helps you fit in.	
64	I had a strong emotional reaction to these ads.	
65	Avoiding tobacco smoke will help me live longer.	
66	I can control how much I smoke more than the average person.	
Please answer the following questions as honestly as possible, circling or writing in your response.		
67	Do you consider yourself a (please circle one) Regular Smoker (or tobacco user) Social Smoker (smoke or use tobacco only during special occasion or when "out") Former Smoker (or tobacco user) Non- Smoker	
68	Have you **ever** tried tobacco? Yes No (if no skip to # 64)	
69	How old were you when you first tried tobacco? _____ years old	
70	How often have you used tobacco in the last week? _____ days/week	
71	How often have you used tobacco in the last month? _____days/month	
72	How often have you used tobacco in the last six months? _____days/6 months	
73	How often have you used tobacco in the last year? _____days/year	
74	What is your age?	
75	What is your gender? Male Female	
76	What is your year in school? Freshman Sophomore Junior Senior	
77	What grades do you normally get in school? Mostly A's Mostly A's and B's Mostly B's Mostly B's and C's Mostly C's Mostly C's and D's Mostly D's or below	
78	What is your family's average income? ___ $10,000 or less ___ $10,001 – 25,000 ___ $25,001 – 50,000	

	___ $50,001 – 75,000	___ $75,001 – 100,000	___ $100,001 – 150,00
	___ over $150,000	___ Don't know	

THANK YOU FOR YOUR TIME!