CREATING A HEALTHIER CITIZENRY:

AN EFFICACY STUDY OF

ANTI-SMOKING

PUBLIC SERVICE

ANNOUNCEMENTS

by

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ABSTRACT

This study sought to pinpoint certain factors that make a health campaign more or less effective, enabling the design of better messages that can create a healthier citizenry. An efficacy study was conducted to assess which appeals (rational or emotional) and type of benefit (first-person or third-person) advertised in public service announcements have the greatest impact on ad effectiveness and how that effectiveness interacts with health intentions. This study also introduces a new factor into health campaign research that could have an impact on effectiveness: moral development.

Results indicate that the type of appeal being used in a health ad does not impact that ad's effectiveness, while messages advertising a third-person benefit of the health behavior are more appealing than those advertising a first-person benefit. They also indicate that an ad presenting both a third-person benefit and an emotional appeal, or a first-person benefit with a rational appeal, would have a greater influence than an ad presenting only an appeal, only a benefit, or a different combination of either. Results also indicate that using either an ad with a third-person benefit and an emotional appeal, or with a first-person benefit and a rational appeal, have success communicating with viewers who already have low intentions to smoke. The findings of this study indicate that moral development does play a role in how an individual evaluates a health ad. Practical implications and directions for future research are discussed.

DEDICATION

This dissertation is dedicated to all of my family and friends who have been extraordinarily supportive and understanding during the process of earning my Ph.D. In particular, this dissertation is dedicated to my husband, Johnathan, who has believed in me and encouraged me every step of the way. This dissertation is also dedicated to my parents, Louis and Donna McCurry, who have helped me become the person I am today and let me know I can accomplish anything I set my mind to, and to my parents-in-law, Johnny and Beverly Johnson, who have shown endless love and support throughout this entire journey.

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CHAPTER 1

INTRODUCTION

Healthcare is a large—and costly—industry. In 2012, healthcare spending reached $2.8 trillion and represented 17.2 percent of the United States' Gross Domestic Product, an increase over 2011's spending by 3.7 percent (Centers for Medicare and Medicaid Services, 2014). This figure represents an expense of $8,915 per person, and it doesn't end there (CMS, 2014). In 2012, a family of four spent an average of $20,728 on healthcare, including $15,745 in health insurance expenses alone (Monroe, 2012). Also in 2012, health spending was projected to increase over the next decade by an average of 5.8 percent each year (CMS, 2014). With increasing national and family health-related costs, it's become as imperative as ever to encourage healthy behaviors. This necessitates an increase in the importance of effective health communication strategies that impact health attitudes and intentions. As Baldwin, Rothman, Vander Weg, and Christensen (2012) noted, "The leading health risk indicators in the United States (e.g., obesity, tobacco use) are directly related to behavioral choices people make. Thus, effective strategies are needed to promote and maintain healthy behavioral practices" (p. 1209).

Prevention campaigns could positively benefit hundreds of thousands of active or potential users, but often such campaigns fall short of their designed objectives (Alvaro, Crano, Hohman, Johnson & Nakawaki, 2013). Campaigns designed to deter the use of health-harming substances, including illicit drugs, alcohol and tobacco, have been found to be inconsistent in their effectiveness (Alvaro, et al., 2013). Specifically, Frieden (2014) noted that while some

public health programs succeed in accomplishing their goals, many fail to impact health outcomes. Therefore, he provides guidance on how programs can be effective, suggesting that communication is one of the essential areas that leads to health program success (Frieden, 2014). "Effective communication, such as hard-hitting anti-tobacco campaigns, can lead to widespread behavioral change and can also help change social norms" (Frieden, 2014, p. 20).

With increasing health problems and the increasing costs of healthcare putting a strain on our country's financial resources, creating a healthier citizenry would be in the best interest of every taxpayer (CMS, 2014; Monroe, 2012). But as some have found (see, Alvaro et al., 2013; Frieden, 2014), the success of health campaigns is not a given. The question then becomes: How to make them better? What particular components of these campaigns are most effective at changing attitudes, beliefs or behaviors? By pinpointing certain factors that make a health campaign more or less effective, better messages can be created to encourage audiences to engage in a healthier lifestyle (Alvaro et al., 2013; Baldwin et al., 2012; Cohen et al., 2007; Frieden, 2014).

One step involved in determining what makes health messages effective is looking at particular features of the advertisements or public service announcements (PSAs) used in health campaigns. According to Alvaro et al. (2013), an important step in producing effective health communication is determining specific features of ads that appeal to target audiences, and research shows success in campaigns where participants have favorable attitudes toward campaign ads (Alvaro et al., 2013; Cohen et al., 2007). Further, impacting health behaviors requires campaigns that present ads appropriately designed for the target audience (Alvaro et al., 2013; Noar, 2006). This study attempts to discover how campaign designers can develop appropriate ads for health campaigns; specifically, this research focuses on the type of appeal

used in the ad and the type of benefit being advertised in anti-smoking messages targeted to adolescents and young adults.

Anti-smoking messages are a common theme among health campaigns (Snyder et al., 2004; Pechmann & Reibling, 2006), and often the targeted audiences for these campaigns are adolescents and young adults, as research shows that 86% of smokers begin smoking before the age of 21 (American Lung Association, n.d.). Adolescence is a formative time in the lifespan when individuals are beginning to make health choices for themselves. This study examines individuals who are at this critical time in their lives to investigate the perception of health messages at varying stages of development.

Both affective and factual appeals have been correlated with the effectiveness of health campaigns (Lawton et al., 2009; Niederdeppe et al., 2008). However, studies comparing the two appeals have produced mixed results (Stafford & Day, 1995; Mahapatra, 2013). Therefore, this study examines the impact of persuasive appeal (emotional vs. rational) on the effectiveness of health messages. Additionally, while research has shown that ads focusing on a behavior's health benefits on others have been effective (Pechmann, 2001; Beaudoin, 2002), no research has examined whether the type of benefit being advertised impacts the ad's perceived effectiveness. Therefore, this study seeks to explore this possibility further by examining the type of benefit being advertised (first-person vs. third-person) and its impact on ad effectiveness.

An area that could prove beneficial in helping practitioners create more effective messages for targeted audiences is moral development. Moral development determines how individuals judge what is right, wrong, just, etc. This development naturally has implications when targeting individuals with messages that impact their attitudes and behaviors, and this is especially true when considering health campaigns. Moral development helps explain how

viewers of ads might interpret the messages being presented, thereby potentially leading to the discovery of additional information on how to more appropriately design campaigns. This study contributes to research in this area by applying moral development concepts specifically to health communication research and using it to determine how to better present health information. The study investigates adolescents' perceptions of health ads to determine if any correlations exist between perceived message effectiveness and moral development.

However, studying the effectiveness of health campaigns is a difficult feat and is often done using quasi-experimental methods (Noar, 2006; Gagne, 2008; Hutchinson & Meekers, 2012; Beaudoin & Thorson, 2007; Harrison et al., 2011). An efficacy methodology used by Evans, Uhrig, Davis and McCormack (2009) involves a classic experimental design: randomly assigning participants to a condition, exposing them to certain stimuli and then testing them. Efficacy designs allow for more experimental control and studying messages to determine whether they could be effective under ideal conditions. Evans et al. (2009) noted that rigorous efficacy studies are rare in health communication research, but that they could be a positive step forward in determining the types of messages that would be most effective. Therefore, the study detailed here is designed to determine the specific components that make health messages most effective. This study used an efficacy design to evaluate components of health PSAs and to determine the best way to present health information, and examined the impact of moral development on the evaluation and perception of health PSAs.

This dissertation will first look at the existing literature in this area, outline the method for the study, and then describe and discuss the results. Study limitations and directions for future research are also examined.

CHAPTER 2

REVIEW OF THE LITERATURE

The purpose of this study was to contribute practical knowledge to communication practitioners in order to enhance the development of health communication campaigns. By determining the factors of health messages that are most effective, better-designed campaigns can be implemented to encourage healthy lifestyles and help curb health care spending both on the public and personal levels. This study was designed to examine which components of ads used in health campaigns (which are often unpaid public service announcements, or PSAs) are most effective. Thus, the literature regarding health campaign effectiveness, health campaign evaluation methodologies and specific ad or PSA components, along with theories applicable to this research, is reviewed.

Campaign Effectiveness

There is no shortage of research examining the effectiveness of different health campaigns, and many of those campaigns have been found to produce their desired results. For example, research has shown the Montana Meth Project to be profoundly successful in altering the attitudes and behaviors of adolescents toward the use of methamphetamine (Siebel & Mange, 2009). The campaign, consisting of thoroughly-researched television, radio and print ads depicting shocking consequences of meth use, is credited with reducing teen use of meth by 45% and meth-related crime by 62% in the state of Montana (Siebel & Mange, 2009). Morales, Wu

and Fitzsimons (2012) noted that the campaign used both fear and disgust appeals and found in their research that this combination significantly boosted the ads' persuasiveness. Siebel and Mange (2009) emphasize that the behavioral outcomes of the Montana Meth Project were the result of changed attitudes toward meth. "The Meth Project shows that a research-based marketing campaign can substantially change the attitudes and ultimately the behavior of its target audience" (Siebel & Mange, 2009, p. 415).

Banerjee, Andersen, Warvadekar and Pearson (2013) studied an anti-abortion campaign and found significant differences in knowledge about abortion between women who had been exposed to an abortion informational campaign in parts of India and those who had not. They also found differences between those who had been exposed to multiple intervention activities and those who had only been exposed to one event of the campaign. They noted that, "over the two-year study period, the behavior change communication intervention was associated with improved knowledge about the legal aspects of abortion in India and about where to obtain safe abortion services" (Banerjee et al., 2013, p. 148). The researchers concluded that interventions designed to improve knowledge and perceptions can be effective "where myths, misperceptions and lack of information hinder women's access to safe abortion services" (Banerjee et al., 2013, p. 149).

Similarly, Beaudoin and Thorson (2007), who studied the effects of a campaign in Kansas that was geared toward changing adults' attitudes toward youth health, found that exposure to the campaign "was a significant predictor of beliefs about youth development" (p. 446). They also found that campaign exposure predicted behaviors toward youth development, and that these behaviors increased over time for participants who were exposed to the campaign.

As behavioral changes were not found during the initial evaluation of the campaign, the authors concluded that behavior changes might be more gradual and change over time.

Eves, Webb, Griffin and Chambers (2012) studied the efficacy of pre-tested messages encouraging the use of stairs instead of elevators. A workplace with messages posted next to the elevator saw increased stair usage by 7.2%. A workplace with additional messages in the stairwell saw a stair usage increase of 12.3%. The researchers conclude, "this study suggests multi-component interventions that target attitudes, as well as behaviour at the time choice is made, can substantially increase stair climbing at work" (Eves et al., 2012, p. 9).

Harrison, Morgan, King and Williams (2011) designed and evaluated a campaign to encourage African Americans in the state of Michigan to sign up for the organ donor registry while getting their driver's licenses renewed. They found that registry sign ups among African Americans significantly increased during the months the campaign was implemented, but they found the greatest increase during the phase of the campaign that utilized the interpersonal communication element.

Gagne (2008) measured attitudes and the relationship among participants' attitudes, intentions and behaviors, along with campaign exposure, and found effects of an anti-smoking campaign on attitudes toward campaign messages and toward smoking's impact on health. The researcher also found that participants' attitudes toward how smoking impacted other people was the stronger predictor for cessation, an attitude the author notes "evokes the fear of social stigma" (Gagne 2008, p. 143).

Hersey et al. (2005) evaluated the American Legacy Foundation's "truth" anti-tobacco industry campaign targeted toward teenagers. They found that the campaign resulted in negative beliefs about the industry, which led to negative attitudes toward the industry. Farrelly et al.

(2009) also found that exposure to the truth campaign was correlated with "changes in attitudes, beliefs and intentions to smoke" and that anti-smoking campaigns that are appropriately researched and implemented can have an effect on teenagers' beliefs and attitudes about smoking (p. 42). They concluded that the truth campaign was perceived favorably among youth and can impact their attitudes and intentions to smoke.

Other studies, however, show that health communication campaigns often produce mixed or limited results. For instance, Frieden (2014) noted that while some public health programs succeed in accomplishing their goals, many fail to impact health outcomes. Noar (2006) examined previous studies in health communication to reveal the state of research in this field. Overall, he notes that previous meta-analyses of health campaigns indicate that campaigns can have an effect on attitudes, knowledge and behaviors, but mostly these effects have been small and at times short-lived. For example, the CDC analyzed its 2013 anti-smoking campaign and found that the number of calls to the quitline increased by 75% during the campaign and sharply dropped "almost to pre-campaign levels once the campaign ended" (CDC, 2013, p. 763). The number of unique visitors to the website increased 38-fold during the campaign, but decreased by 96% once the campaign ended. These results led the authors to note that their findings indicate such campaigns are connected to increased usage of quit support items, but that the effects quickly decrease after the campaign ends.

Similarly, an anti-smoking campaign that was presented in schools was found to have a temporary impact. Michaelidou, Dibb and Ali (2010) set out to determine the impact of anti-smoking messages presented by schools on the attitudes and intentions of teenage students in the UK. Michaelidou et al. (2010) found that the school presentation had an impact on attitudes but

not intentions. A significant effect on attitudes was found between times one and two (pre-intervention and the first post-intervention time).

Race and ethnicity can also affect the success of the campaigns. Cowell, Farrelly, Chou and Vallone (2009) found a statistically significant relationship between exposure to the American Legacy Foundation's truth campaign and attitudes and beliefs about tobacco companies. In examining races and ethnicities, beliefs of white and African American youth were impacted similarly. Hispanic and Asian youth were impacted similarly to each other, but differently from white and African American youth. In discussing their results, the authors note that their findings indicate that some messages may resonate differently across racial and ethnic groups. Further they state that research that determines the impact of different content and wording would be essential in improving messages that intend to change behaviors in youth of different backgrounds.

Niederdeppe, Fiore, Baker and Smith (2008) examined whether the effectiveness of anti-smoking ads on television varied by education and income levels. They found that recall of ads encouraging the viewer to keep trying to quit (KTQ) was associated with quit attempts in individuals in more highly educated populations. However, second-hand smoke (SHS) ad recall and income were not associated with quit attempts. Neither type of ad recall was associated with smoking abstinence for any population. The researchers concluded that:

> some types of smoking cessation media messages may have greater impact on quit attempts among more-educated compared with less-educated populations. Over time, these differences could produce widened disparities in smoking by [socioeconomic status]. There is a need to develop media campaigns that are more effective with less-

educated smokers, a group that constitutes a disproportionately large portion of the smoking population. (Niederdeppe et al., 2008, p. 923)

As illustrated by the literature reviewed above, research investigating the effectiveness of health campaigns returns inconsistent results. There is some evidence that health campaigns can be effective, but not all campaigns achieve their intended goals or produce results of significance. Therefore, this study adds to the literature in this area by determining how to improve the effectiveness of health campaigns.

Ad Components

Alvaro et al. (2013) considered measuring audiences' evaluations of persuasive messages a necessity in developing drug-prevention campaigns, yet reported that the "study of ad evaluation effects has stimulated relatively little interest in prevention circles" (p. 1028). According to Alvaro et al. (2013), audiences' reactions to ads used in persuasive campaigns are as important as exposure. They report that the next step in producing effective health communication is determining specific components of ads that appeal to target audiences. Similarly, in studying the effects of the American Legacy Foundation's "truth" campaign on teenagers' attitudes toward the tobacco industry, Hersey et al. (2005) reported that future research seeking to improve messages should "explore ad characteristics that contribute to favorable ad reactions" (p. 29).

Ad Effectiveness

Some research indicates that effecting health behaviors requires campaigns that present ads appropriately designed for the target audience. Alvaro et al. (2013) noted that research

involving ad effectiveness "may inform designers of persuasion-based prevention campaigns, guiding pre-implementation efforts in the design of ads that targeted groups find appealing and thus, influential" (p. 1027). Pechmann (2001) emphasized that creating campaigns necessitates considering important issues, including "the message content (what to say), the executional style (how to say it), the target audience (whom to say it to and, hence, which media to choose), and the budget" (p. 177).

In his meta-analysis of 10 years' worth of research, Noar (2006) compiled a list of the major principles that are most likely to be included in effective health campaigns. One of his principles is appropriate message design, and he stated that an effective campaign will "use a message design approach that is targeted to and likely to be effective with the audience segment; develop novel and creative messages; design messages that will spark interpersonal discussions and may persuade individuals important to the target audience (e.g., influencers)" (p. 25). However, he noted that the design of messages was not studied in much of the research examined and suggested that future studies work to develop new and innovative approaches to health message design (Noar, 2006).

This study attempted to discover how campaign designers can develop appropriate ads for health campaigns. Specifically, the research detailed in this dissertation focused on two components of ads and audiences' reactions to them.

Type of Appeal

Health communication ads often vary in the type of persuasive appeal used to encourage healthy behaviors or discourage risky ones. Lawton, Conner and McEachan (2009) note that only small changes in behavior can be attributed to changes in intention. They argue that affect plays

a larger role in changing attitude than social cognition models have emphasized, and that affect could be powerful in affecting attitudes, intentions and behaviors. In controlling for intention, the researchers determined to evaluate affective and cognitive attitudes and their influence on a variety of health behaviors. Lawton et al. (2009) found that affective attitudes significantly predicted all the health behaviors measured, and continued to predict nine of the health behaviors once intention was included. Cognitive attitudes predicted 10 of the health behaviors being measured. The authors note that their findings indicate the strongest impact of affective attitude occurred for behaviors with an immediate bearing on the "senses or on physiological state… Health campaigns and messages that focus on the risks of engagement may serve as useful tools to reduce the uptake or initiation of risky behaviors but may be very poor in influencing those who have experienced the positive effect of the behavior (e.g., drinking) on their emotions" (Lawton et al., 2009, p. 62). Additionally, in their research of the Wisconsin Tobacco Prevention and Control Program, Niederdeppe et al. (2008) found that "ads with evocative testimonials about the health effects of smoking have been cited by former smokers as influential in their efforts to quit" (p. 916).

As the research cited above indicates, both affective and factual appeals have been correlated with the effectiveness of health campaigns. However, not many studies have compared the two appeals. Stafford and Day (1995) examined the impact of emotional and rational ads on attitudes toward ads. They report that the emotional ads used in their study "were designed to generate positive emotions and create warm feelings; they included subjective, evaluative properties" while the ads with rational appeals used in their study "were more direct, containing factual information presented in a straightforward manner; they were characterized by objectivity and designed to be thinking ads" (Stafford & Day, 1995, p. 62). They found that

participants who viewed advertisements utilizing an emotional appeal had a higher attitude toward the ad than participants who viewed advertisements with a rational appeal. Mahapatra (2013) stated that "emotion is an essential component for successful execution of advertising message" and found that ads with an emotional appeal had a greater impact on participants than ads with a rational appeal (p. 88).

This study examined impact of persuasive appeal (emotional vs. rational) on the effectiveness of health messages. However, since there is not much research comparing the two appeals, no prediction of which appeal will have the greater impact on effectiveness can be made.

Type of Benefit

Very little research has examined whether the type of benefit being presented in an ad impacts its perceived effectiveness; that is, whether an ad that emphasizes first-hand effects on the self might be more or less effective than a message that features the impact a health behavior has on a third-person other. Pechmann, Goldberg, Reibling, and Zhao (2000) classified seven message types most commonly used in anti-smoking ads and adolescents' evaluations of them (as reported in Pechmann, 2001). One message type found to be effective was called "Endangers Family," which emphasized the dangers of second-hand smoke. However, Pechmann concluded, "research seems to suggest that certain types of advertising messages work better than others, but additional studies must be conducted before any definitive conclusions can be drawn" (p. 179). Similarly, Beaudoin (2002) found that second-hand effects of smoking were a common message in anti-smoking ads and were generally effective. However, no research could be found that

compared messages which highlight health behaviors' first-hand effects on the self and second-hand effects on a third-person other.

Therefore, this study sought to explore this possibility by examining the type of benefit being advertised (first-person vs. third-person) and its impact on ad effectiveness. Because type of benefit has not been studied, no prediction of which benefit will have the greater impact on effectiveness can be made.

Health Intentions & Ad Effectiveness

Research evaluating health campaigns is typically geared toward the effectiveness of the campaigns in terms of their ability to affect changes in health knowledge, attitudes, beliefs, behavior or intentions. Evans et al. (2009) noted that rigorous efficacy studies could be a positive step toward determining the types of messages that would be most effective in changing audiences' health intentions, and this is the goal of many studies in this area (Chang, 2009; Lee, et al., 2013; Pechmann & Reibling, 2006; Rusmevichientong, 2014; Shen 2010). However, there is a dearth of research that examines the impact a viewer's existing health intentions would have on his or her judgments of a health message. Therefore, this study explored how health intentions interact with perceived ad effectiveness in communicating health messages.

Theoretical Perspective

One theory provides the foundation for this study: moral development theory. This theory helps inform how viewers of ads might interpret the messages being presented. This study contributes to research in this area by applying the theory specifically to health communication

research and using it to determine how to more effectively communicate health information, a new concept in both the moral development and health communication fields.

Moral Development

Moral development determines how individuals judge what is right, wrong, just, etc. This development naturally has implications when targeting individuals with messages that impact their attitudes and behaviors. This is especially true when considering health campaigns. Campaigns designed to encourage the adoption of beliefs or behaviors that enhance a person's health or quality of life often frame these behaviors as being "good for you." Knowing how different groups of individuals judge what is "good" is important in developing effective messages for them.

Lawrence Kohlberg is a prominent researcher who took a profound and personal interest in examining human development. His passion for development became evident in his work, and he is regarded as a top researcher in moral development. But like most research that has become—and has stayed—prominent over the years, his work has been analyzed to discover which parts of it are most fruitful and how they can be developed to better describe humanity (Kohlberg & Hersh, 1974; Rest, Narvaez, Thoma, & Bebeau, 2000). The work resulting from taking the best parts of Kohlberg's moral research and expounding upon them is known as a neo-Kohlbergian perspective of moral development. In order to fully understand the neo-Kohlbergian definition of moral development, one must understand Kohlberg's original moral development perspective.

Moral development is the result of transformations in a person's form and structure of thought. Moral development is defined by a notion of cooperation in how we define what is good

and just, and involves interacting in social situations that contain a moral component. According to Kohlberg and Hersh (1974), studying cultural values can't tell us how a person interacts with his or her social environment, since cultural values differ. Studying how a person solves problems in his or her social world requires looking at developing structures of moral judgment, which have been found to develop sequentially across cultures.

According to Kohlberg and Hersh (1974), moral reasoning is influenced by an ability to empathize and a capacity for guilt. Therefore, since moral judgment and reasoning are determined by a person's interactions with his or her environment, it is necessary that an individual be able to take on new perspectives and roles. Reworking different perspectives and roles into successively more complex and adequate definitions of justice is moral development. Social interactions promote moral development, as coming in contact with moral conflicts that are not easily resolved by one's current level of reasoning results in development.

In evaluating the way individuals develop moral reasoning and judgment, Kohlberg and Hersh (1974) ascertained that this development takes place in stages. These stages, they note, are distinguished by three characteristics. First, structure wholes, meaning individuals are consistent in their level of moral judgment. Second, they are an invariant sequence, meaning individuals always progress and never move backward, and this is true for all cultures. Third, they are hierarchical integrations, meaning current stage thinking includes lower stage thinking, but individuals prefer reasoning at the highest stage available to their cognition.

Kohlberg's perspective of moral development is defined by six stages within three levels. The first level of moral development is the pre-conventional stage, which is the time before which an individual reaches an understanding of group conventions. During this level of development, individuals are focused on the self, and the rightness and wrongness of actions are

determined by the consequences of those actions or by deferring to those in authority. Stage 1 is called the punishment and obedience stage. Children in this stage of moral development will do or not do something based on the punishment they may receive, and avoiding punishment and deference to power are valued. A child considers an act to be wrong if he or she was punished after doing it, and other actions may be avoided to avoid receiving punishment. Stage 2 is called the instrumental-relativist orientation stage, in which children develop an "I'll scratch your back if you scratch mine" mentality of morality. They will do something only if they will be getting something in return, and are motivated to act based on the consequences of their actions. Further, a child sees an action as "right" if it satisfies his own needs and occasionally the needs of others

The second level of moral development from Kohlberg's perspective is the conventional level, where individuals begin to focus on group norms. Individuals in this level of development shift the focus from self to the group, and begin to care about what the group has decided is right and wrong. Stage 3 is called the interpersonal concordance stage, in which a child will act in such a way to be seen as a "good boy/nice girl." Right actions are those that earn the approval of others. In this stage, intentions become important to the individual, and he or she earns approval by being nice. Stage 4 is called the law and order stage. Children and adolescents in this stage of development believe a right action is the one that follows the rules and that laws are in place to be followed. The right behavior is doing one's duty, respecting authority and maintaining order. People in this stage value social order and fear a post-apocalyptic type of chaos if order is not maintained.

Kohlberg's third level of moral development is known as the post-conventional stage, in which individuals move their focus beyond group norms into more universal principles and definitions of goodness and justice. Stage 5 is the social contract or legalistic stage. Individuals

in this stage take a legal point of view, but understand that these laws can be changed based on principle and reason. These individuals may weigh certain principles against one another and act based on the principle they hold in highest regard. The right action is defined by individual rights as agreed upon by the whole society; this is the official morality of the U.S. government and Constitution. In stage 6, right is defined by a decision of a conscience in accord with self-chosen ethical principles, like principles of justice, reciprocity, equality of human rights and respect for the dignity of human beings as individuals. Stage 6 is the universal-ethical-principle stage and is attained by few individuals. This stage became a theoretical endpoint in Kohlberg's work.

The neo-Kohlbergian perspective of moral development was developed by Rest, Narvaez, Thoma and Bebeau (2000). They maintain that Kohlberg's work was a good combination of several disciplines and did well in addressing the social issues of the day (civil rights, Vietnam, etc.). However, their criticisms of Kohlberg's work include the fact that he made several revisions to his work such that it was in constant flux, and that his perspective did not include a comprehensive definition and theory of moral development. Furthermore, they maintain that development happens more within schemas of cognition than in stages. The neo-Kohlbergian schemas are defined by four characteristics: they involve top-down processing; they are formed as individuals recognize the similarities and recurrences in their experiences; they consist of making representations of prior stimuli; and they are used to interpret information. Rest, et al. (2000) also noted five distinct differences between Kohlberg's stages and their proposed schemas of moral development. First, their schemas hold that development occurs as a shifting distribution rather than a staircase. Second, the schemas are more concrete and specific than the stages. Third, the schemas do not directly assess cognitive operations. Fourth, universality in moral development is considered an empirical question in the neo-Kohlbergian perspective. Last,

measuring an individual's schema development involves using a tacit, multiple-choice methodology of evaluation rather than relying on self-reports in interviews.

The neo-Kohlbergian perspective defines moral development as occurring in three schemas: personal interest, maintaining norms, and post-conventional. The personal interest schema is similar to Kohlberg's stages 2 and 3, and the individual's focus is on the self. Individuals in the neo-Kohlbergian personal interest schema evaluate dilemmas based on what would be gained or lost, and decisions are justified by personal stake. Rest, et al. (2000) report that individuals develop out of this stage before they reach adolescence. The maintaining norms schema is similar to Kohlberg's stage 4. Those in the maintaining norms schema identify existing rules and authorities and obey those authorities out of respect for the system. They believe that without law there is no order, and that maintaining social order defines morality. The focus has been shifted to the group and what the group defines as right and wrong. Actions are performed based on laws and group-wide decisions, and there is an assumption that laws and rules will be applied society-wide and maintain a level of reciprocity. The post-conventional schema is similar to Kohlberg's stages 5 and 6. The focus shifts beyond group norms and conventions to more universal definitions of goodness and justice. Those in the post-conventional schema believe that moral obligations are based on shared ideals, are fully reciprocated and open to scrutiny. There is an assumption that laws and principles will be regarded with full reciprocity universally.

Influences on moral development. Changes in moral development have been found to continue throughout the lifespan (Armon & Dawson, 1997; Thoma, 1986; Walker, 1984), with Armon and Dawson (1997) finding specifically that development continues into adulthood in the

stage-like manner that has been found in youth and adolescent moral development. Additionally, several factors have been found to influence moral development. Interestingly and most notably, education has been found by many researchers to influence moral development, even when those researchers weren't specifically looking for an education effect (Armon & Dawson, 1997; Thoma, 1986; Rest, 1975; King & Mayhew, 2002; Walker, 1984; Coleman, 2011; Mayhew & Engberg, 2010; Maeda, Thoma & Bebeau, 2009). Education and moral development share a positive relationship. Seemingly as a rule, increases in an individual's amount of education are related to increases in his or her scores on moral reasoning and moral judgment scales. These effects were found in test-retest studies of students across time spans, in studies whose purposes were to investigate gender differences and discovered confounding educational effects, and in cohort studies examining differences between same-age peers who attended college and those who did not. Even with other variables controlled for, most notably age, which for youth and adolescents is necessarily correlated with education, educational level was found as an effect of moral development. Rest (1975) and King and Mayhew (2002) found that students who attended college scored higher on scores of moral development than their same-age peers who had not attended college, and Mayhew and Engberg (2010) even found differences in moral development in the same students over the course of one semester in college. Thoma (1986) found the effect of education was stronger than an effect of gender.

Rates of moral development have been found to vary across various educational contexts; specifically, certain types of educational institutions seem to be more conducive to moral development than others. For instance, King and Mayhew (2002) found that students at liberal arts colleges scored higher on measures of moral development than students at public research institutions or Bible colleges, and Maeda, Thoma and Bebeau (2009), found that students who

attended colleges that were academically ranked highly scored higher for moral development than students who attended academically lower ranked schools. However, studies looking at moral development differences among programs of study have provided inconsistent results. Maeda, Thoma and Bebeau (2009) found that students in medical school programs consistently scored higher in moral development than students in other programs, and King and Mayhew (2002) found that business and accounting majors scored higher than non-majors. However, Maeda, Thoma and Bebeau's (2009) medical school finding was the only program to show consistent differences in moral development, and King and Mayhew (2002) found inconclusive results when investigating program of study specifically.

Educational institutions themselves have produced inconsistencies in moral development, as Maeda, Thoma and Bebeau (2009) found that relationships between gender and moral judgment and language status and moral judgment are consistent across institutions, while relationships between political affiliation and moral judgment and education level and moral judgment vary across institution types.

Several researchers set out to discover if moral development is impacted by gender (Royzman, Goodwin & Leeman, 2011; Maeda, Thoma & Bebeau, 2009; Thoma, 1986; Walker 1984). Gender differences have been found in some research, but with small effect. For example, Royzman, Goodwin and Leeman (2011) found that gender was a predictor of morality. Thoma (1986) and Walker (1984) both found gender effects through the lifespan, but those effects were either small or rare and attributable to confounding variables. Other studies examining gender effects on moral development have produced mixed results. Maeda, Thoma & Bebeau (2009) found a stronger relationship between gender and moral development than either political affiliation or education level and moral judgment, yet Thoma (1986) found a greater effect of age

and education level than of gender in moral development. However, gender effects consistently manifest in research throughout the lifespan, with some gender differences being found across educational institutions (Maeda, Thoma & Bebeau, 2009) and through the lifespan (Thoma, 1986; Walker, 1984). Walker (1984) found that females score lower in adolescence and adulthood (although this effect in adulthood was confounded with education) and Thoma (1986) found females tend to score higher.

Race and ethnicity effects on moral development have not been well-researched. Coleman (2011) studied the influence of race on the moral development of journalists and found that African-American, Hispanic and Asian journalists were not biased toward their own races or against other minority races when making journalistic decisions with ethical components. However she did find a small effect of race on overall moral development scores. This is one area that is under-researched but that holds great importance. As diversity continues to increase on college campuses, in workplaces and in other areas where social interactions take place, understanding any effects of race and ethnicity on moral development is critical.

Application of moral development to health communication. As indicated earlier, moral development is an important consideration in health campaigns. For instance, Kohlberg's stages of moral development and the neo-Kohlbergian perspective of moral development schemas point out that individuals at different levels of development focus on different things when judging whether an action is good. Kohlberg's stages 2 and 3 and the neo-Kohlbergian personal interest schema focus on the self and the consequences of actions when engaging in moral reasoning. The law and order stage and the maintaining group norms schema state that individuals begin focusing on group conventions and doing things because the group decided

what actions were right and wrong. Kohlberg's post-conventional stage and the neo-Kohlbergian post-conventional schema state individuals begin focusing beyond group norms into more universal principles of justice and equality.

Based on this information, a number of factors should be emphasized or avoided when planning campaigns targeting individuals in the childhood, adolescent and young adult stages of life. First, children are often in the pre-conventional, consequence-focused, subjective and self-reflective stages of moral development, so role-taking and health messages targeting these individuals would need to be designed accordingly. For example, a campaign designed to encourage children to exercise more would need to focus on the consequences of exercise, namely the individual benefits the children would receive by exercising. Emphasizing that exercising produces good results and that the children might be seen as a good boy or girl if they exercised would be most beneficial in reaching this age group. However, as these children haven't yet reached a level of development where group norms matter, emphasizing that "everybody does it" or using other group-focused messages should be avoided.

Adolescents are often in the stage of life where their focus is on group conventions. They are in the law and order, mutual perspectives time of life where they want to fit in and be like the group. In fact, maintaining group norms has been described as the heart of adolescence. Messages designed to influence health attitudes and behaviors of adolescents should focus on group norms, emphasizing that the behaviors are beneficial for the group, that the group approves/doesn't approve of doing them, or that it is following the group's agreed upon rules. Since the hierarchical integration of stages means that individuals at this stage of development also reason at lower stages, the use of personal consequences could also be considered. However, individuals in this group have not yet developed the ability to reason on a societal level or take

societal perspectives, so messages emphasizing those factors should be avoided. For instance, a campaign to encourage teenagers not to text while driving could show that their actions may affect not only themselves but other people, too, or highlight celebrities or other people held in high esteem by their peers who have spoken out against texting while driving.

Young adults have hopefully developed into being able to recognize societal perspectives and more universal principles. These individuals are able to see beyond the good of the self and the group into a more universal sense of justice and equality. Messages targeting young adults should emphasize the principles at play when encouraging behavior or attitude change, and should point out the societal value in the behaviors. Since the hierarchical integration of stages means that individuals at this stage of development also reason at lower stages, the use of personal consequences and group norms could also be considered. For instance, a campaign designed to discourage drunk driving among young adults may emphasize the personal consequences of getting ticketed or arrested, the third-person consequences of hitting and possibly killing another person while drunk, or the societal consequences of the number of lives lost due to drunk driving and the financial strain drunk driving places on society.

Along with the considerations of various levels of moral reasoning, campaigns determined to affect attitudes and behaviors should also consider other characteristics of the target audiences that may influence their levels of moral development. Since moral development determines how a person decides what is right and wrong, things like education, educational context, gender, race, costs and intentions that influence moral development should be taken into account. For instance, when targeting audiences of varying education levels, the messages designed to encourage health behaviors may have to change. Those who have a high school education may judge the rightness or wrongness of the actions differently than those who have

two-year, four-year or graduate degrees. The campaign would need to be adjusted and targeted accordingly. As the effects of gender and race become better researched and understood, these factors would need to be taken into consideration as well.

Based on the research reviewed above, this study sought to examine how specific components of health campaigns—type of appeal and benefit—interact to impact ad effectiveness and whether an individual's health intentions impact his or her perceptions of an ad's effectiveness. The perception of health messages and adoption of health behaviors seem to have a natural connection to moral and ethical development, yet it remains to be known whether an individual's level of moral development would affect his perception of health messages. The research detailed here applies moral development to the perception and effectiveness of health messages to determine whether this subject lends more insight into what makes health communication more effective. Therefore three research questions were posed:

RQ1: How do components of health campaigns (type of appeal, type of benefit) impact ad effectiveness?

RQ2: How do components of health campaigns (type of appeal, type of benefit) interact with ad effectiveness and health intentions?

RQ3: How does moral development influence the perceived effectiveness of health messages?

Health Communication Research Methodologies

In research that examines health campaigns, most work focuses on evaluating the campaigns or gauging their effectiveness. This research is typically geared toward the

effectiveness of the campaigns in terms of their ability to affect changes in health knowledge, attitudes, beliefs, behavior or intentions. Health communication campaigns have been evaluated with inconsistent and often unsuccessful results (Alvaro et al., 2013; Frieden, 2014; Noar 2006). However, the very nature of health campaigns makes their evaluation problematic. Noar (2006) found that the majority of health campaign research is quasi-experimental at best and notes that randomization in evaluating campaign effectiveness is rare. Because of the experimental limitations in evaluating health communication campaigns, Noar (2006) argues, it is difficult to conclude with any confidence that health campaigns work. Noar (2006) conducted a meta-analysis of health campaign research spanning a decade, and determined that the most frequent type of research involved evaluating a campaign after its conclusion. The second-most frequent type of research looked at campaigns as they were being conducted. Often, these evaluations are quasi-experimental designs. Similarly, Gagne (2008) reported that a longitudinal survey is a common way to predict patterns and trends in behavior prior to, during and following an anti-smoking campaign. Hutchinson and Meekers (2012), looking at the effectiveness of a family planning campaign conducted in Egypt, admitted that experimental evaluation is often impractical or impossible in large-scale campaigns. They note that randomization of participants is difficult because of the scope of the campaign and the high levels of exposure. Therefore, they note, gauging the effectiveness of a campaign such as this requires comparisons between those who recall being exposed to the campaign and those who do not.

As the literature suggests, gauging the effectiveness of health campaigns is no small task. This feat is often attempted after the campaign has been conducted or while the campaign is under way, but randomization and true experimental design is often impossible or impractical. In measuring the Kansas campaign that sought to change adults' attitudes toward youth health,

Beaudoin and Thorson (2007) utilized weekly telephone surveys, which, while certainly one of the best options available, was a weak evaluative design. Its true effectiveness cannot be concluded, as the measurement relies on self-reports and the participants' remembering being exposed and the contents of the messages. At most the evaluation could somewhat determine self-reported attitude and behavioral changes. Similarly Gagne (2008) used measurements to evaluate the anti-smoking campaign in British Columbia that relied on the participants' memories of the campaign and on the use of short-term measures to predict long-term patterns. Harrison, Morgan, King, and Williams (2011) measured actual behavioral changes to evaluate an organ donation campaign by looking at the data provided on registry sign-ups, but that evidence is anecdotal. No real connection could be made to the campaign, and certainly no causation could be stated. Hutchinson and Meekers (2012) admitted that their evaluation was experimentally weak and had to rely on comparisons between those who remembered being exposed to the campaign and those who did not. The lack of randomization in that evaluation further abates the research design, but Hutchinson and Meekers (2012) noted that this type of research is common among large-scale campaigns.

Efficacy

Evans, Uhrig, Davis and McCormack (2009), however, offered an alternative to effectiveness evaluations. They noted that effectiveness research looks at campaign messages as they're presented in real-world situations to study whether the messages are effective. This limits the experimental design and often relies on comparisons between those who have been exposed and those who have not. They argue that efficacy research is a better option for studying whether a message could be effective in the first place, especially when studying PSAs that are often

limited by the amount of exposure they can generate. Efficacy studies involve a classic experimental design: randomly assigning participants to a condition, pretesting them, exposing them to certain stimuli and then post-testing. One example the researchers provide involved exposing students to health ads. The researchers created a magazine in which they placed the health ads that were being tested, filler ads, and regular magazine content, and the students were surveyed to determine their health beliefs and attitudes after viewing the magazine. While this laboratory type of setting did not allow for the researchers to discuss effectiveness in a real-world setting, they were able to gauge the effectiveness of the messages in optimal conditions.

Efficacy designs allow for more experimental control and studying messages to determine whether they could be effective under ideal conditions. Evans et al. (2009) noted that rigorous efficacy studies are rare in health communication research, but that they could be a positive step forward in determining the types of messages that would be most effective in changing audiences' health knowledge, attitudes, behaviors, beliefs or intentions. "In particular, there is a dearth of evidence on how message and marketing strategies work, and efficacy methods can help to build the evidence base in these areas" (Evans et al., 2009, p. 327).

While certainly effectiveness studies taking place during or after the execution of campaigns will continue to be necessary to determine things like exposure rates, longitudinal attitude and behavior changes, or other information necessary to determine returns on investment, efficacy studies should have a place in health communication research to ensure that campaign materials could be effective before time, money and effort are expended in executing campaigns. These types of studies would allow researchers to test campaigns before their implementation, possibly saving time and money by being able to adjust campaigns for peak effectiveness ahead of time. The study detailed here used an efficacy design to evaluate components of health PSAs and

participants' perceptions of them to determine the best way to present health information with the intention of improving the overall health—and lowering the health care expenditures—of individuals and families.

CHAPTER 3

METHODOLOGY

As indicated in the review of the literature, research on campaign effectiveness has produced inconsistent results (see, Alvaro et al., 2013; Frieden, 2014). By determining which components of health messages can make a campaign more effective and how moral development influences effectiveness, better campaigns can be designed to encourage audiences to adopt healthier lifestyles (Alvaro et al., 2013; Baldwin et al., 2012; Cohen et al., 2007; Frieden, 2014; Hersey et al, 2005). Research question 1 asked, "How do components of health campaigns (type of appeal, type of benefit) impact ad effectiveness?" Research question 2 asked, "How do components of health campaigns (type of appeal, type of benefit) interact with ad effectiveness and health intentions?" Research question 3 asked, "How does moral development influence the perceived effectiveness of health messages?" These research questions were investigated by conducting an efficacy study of health messages using a 2x2 within-subjects factorial design. Based on the literature reviewed, two particular components of health messages were studied: the type of appeal (emotional vs. rational) and the type of benefit (first person vs. third person). The theoretical perspective of moral development was investigated by measuring participants' levels of moral development as an independent variable.

Studying this topic by investigating two specific health message components—appeal and benefit—called for the creation of four experimental stimuli to ensure that participants were exposed to each possible combination of the two components: emotional/first person;

emotional/third person; rational/first person; rational/third person. These conditions are illustrated in table 1.

Table 1

Experimental Stimuli

Stimulus	Appeal	Benefit
1	Emotional	First Person
2	Emotional	Third Person
3	Rational	First Person
4	Rational	Third Person

Procedure

Participants (N=196) were exposed to each of the four experimental stimuli and answered a questionnaire. The questionnaire asked participants about the perceived effectiveness of the ads and their health intentions, and measured their moral development levels. At the end of the questionnaire, demographic information was collected.

Stimulus

Each participant was exposed to four PSAs that varied by the components being manipulated. The variations were pre-tested to ensure they conveyed the intended components. Participants in the pilot test (N=143) each evaluated 12 ads (three ads in each condition: emotional/first-person, emotional/third-person, rational/first person, rational/third-person). There were statistically significant differences among the ads in: emotional appeal, F (1, 142)=45.655, p<.001; rational appeal, F (1, 142)=7.576, p<.001; and type of benefit being advertised, F (1, 142)=2.136, p<.05. The final ads selected for use in the study were those with the highest means

of ratings for the desired components. Forced-choice manipulation checks were also included on this study's questionnaire to ensure participants perceived the variations as intended.

To control for any previous exposure, the PSAs were specially created for this study by the researcher and have not been previously published. Because smoking cessation and prevention are common messages used in health campaigns, the stimuli were anti-smoking PSAs (Snyder et al., 2004). For example, ads demonstrating the emotional appeal played to the reader's emotions (smoking impacts physical appearance, emotions and feelings), while the rational ads appealed to the reader's logic (smoking increases risks for disease and death). Ads demonstrating the first-person benefit group contained text that emphasized smoking's dangers for the reader's own health while the third-person benefit ads contained text that emphasized the dangers of second-hand smoke. The stimulus ads used in this study can be found in appendix A.

Participants

The goal of this study was to determine how components of health messages impact ad effectiveness and to examine the influence of moral development on the perception of health messages; therefore, participants needed to exhibit varying levels of moral development, which necessitated using participants of varying ages and educational levels. Anti-smoking messages are a common theme among health campaigns (Snyder et al., 2004; Pechmann & Reibling, 2006), and often the targeted audiences for these campaigns are adolescents and young adults, as research shows that 86% of smokers begin smoking before the age of 21 (American Lung Association, n.d.). Adolescence is a formative time in the lifespan when individuals are beginning to make health choices for themselves. Studying participants in this critical time of life allows for the examination of health message perception at varying stages in moral development

and helps inform practitioners as to the types of messages that best get through to this important demographic. Therefore, participants for this study were adolescents and young adults, ages 15-25, who were students in grades ten through graduate school.

Recruitment took place via classes and camps occurring on the campus of the University of Alabama during the summer and fall semesters of 2014. This included recruiting students who were a part of the university's early college program (high school sophomores, juniors and seniors) and students enrolled in undergraduate and graduate-level classes in varying colleges throughout the university. Once the participants accessed the online-based questionnaire, the software used to conduct the questionnaire, Qualtrics, randomized the order of the experimental stimuli. The beginning of the questionnaire screened the participants to assure each one fell within the desired age ranges and agreed to participate in the study.

Measurements and Scales

Table 2 illustrates the independent variables and dependent variables for each of the research questions. The scales that were used to measure each variable are described below.

Table 2

Research Questions, Independent Variables, Dependent Variables

Research Question	Independent Variables	Dependent Variables
1. How do components of health campaigns (type of appeal, type of benefit) impact ad effectiveness?	Ad components: type of appeal, type of benefit	Ad effectiveness
2. How do components of health campaigns (type of appeal, type of benefit) interact with ad effectiveness and health intentions?	Ad components: type of appeal, type of benefit; Health intentions	Ad effectiveness
3. How does moral development influence the perceived effectiveness of health messages?	Moral development	Ad effectiveness

Dependent variables. For each of the research questions, the dependent variable that was measured is ad effectiveness. Ad effectiveness was measured using a five-item, Likert-type scale derived from ad effectiveness measures used by Lee et al. (2013) and Alvaro et al. (2013). The participants rated the following items on a scale of 1-5, with 1 indicating strongly disagree and 5 indicating strongly agree: This ad was convincing; This ad said something important to me; Overall, how much did you agree or disagree with what this ad said?; The information in this ad is believable to me; This ad got my attention.

Independent variables. For research questions 1 and 2, this study examined whether the two ad components discussed above—appeal and benefit—impacted ad effectiveness. These independent variables were measured using each stimulus PSA's manipulation checks. The manipulation checks were adapted from Liu and Stout's (1987; see also Cornelis, Adams and Cauberghe, 2012) scale to measure ad tone. This scale was used to ensure the participants

perceived the ads to be presenting the type of ad component intended. The participants were asked to select an adjective based on which word better described the ad they viewed. To measure appeal, the participants were asked to judge whether the ad was: logical/emotional; objective/subjective; factual/nonfactual. To measure benefit, the participants were asked to judge whether the ad was: about me/about someone else; impacts me/impacts those around me; affects me/affects someone close to me.

For research question 2, an independent variable that was measured was health intentions. Intentions to smoke were measured using questions from Pechmann and Reibling's (2006) measurement of intent. The participants rated the following items on a scale of 1-5, with 1 indicating strongly disagree and 5 indicating strongly agree: "In the future, I might smoke one puff or more of a cigarette," "I might try out cigarette smoking for a while," and "If one of my best friends were to offer me a cigarette, I would smoke it."

Research question 3 asks about the impact moral development might have on ad effectiveness. This variable was measured using the Defining Issues Test 2 (DIT2). The DIT2 is a revised version of the original Defining Issues Test (DIT1) that was a test designed to measure moral development and was derived from Kohlberg's (1976, 1984) work in this area. The DIT1 evaluates moral development through a multiple-choice task "that asks participants to rate and rank a standard set of items" (Rest et al., 1999, p. 645). The test is designed to activate an individual's moral schemas as he or she reads and responds to six moral dilemmas. The DIT2 was created and tested by Rest et al. (1999) to revise the decades-old DIT1. Rest et al. (1999) set out to update the DIT1 by updating the dilemmas presented to participants, shorten the test and make clearer the test's instructions. The DIT2 also includes a "new way of indexing DIT data, the N2 index, [which] had superior performance on the seven [validity] criteria in contrast to the

traditional P index, which has been used [on the DIT1] for over 25 years" (Rest et al., 1999, p. 644). In comparing the DIT2 to the original DIT, Bebeau and Thoma (2003) state, "DIT2 has updated stories and is also a shorter test, has clearer instructions, retains more subjects through subject reliability checks, and in studies so far, does not sacrifice validity. If anything it improves on validity" (p. 31).

The scenarios and questions on the DIT2 are included in this dissertation's questionnaire in the appendices.

Other measured constructs. Because other factors may impact the participants' evaluations of the ads, another construct was measured: smoking status. This construct was measured using Hersey et al.'s (2005) smoking status continuum. The five categories of smoking status Hersey et al. (2005) used were: "(a) closed to smoking (those who had not smoked cigarettes and did not intend to do so), (b) open to smoking (those who had not smoked cigarettes but indicated that they might smoke in the future; that is, they had intentions to smoke), (c) prior experimenters (those who had tried cigarettes but who had not smoked during the past 30 days), (d) early smokers (those who had smoked cigarettes at least once in the past 30 days but were not yet established smokers), and (e) established smokers (those who had smoked cigarettes on 20 of the past 30 days and who had smoked 100 or more cigarettes in their lifetime)" (p. 24-25). Each participant was placed into one of the five categories based on his or her answer to this direct question. Further, some of the demographic information collected served as covariates in investigating the research questions. The questionnaire used for this study can be found in appendix B.

Scale Reliability & Normality

For each research question, ad effectiveness was the only dependent variable measured. This variable was measured using a five-item, Likert-type scale derived from ad effectiveness measures used by Lee et al. (2013) and Alvaro et al. (2013). The participants rated the following items on a scale of 1-5, with 1 indicating strongly disagree and 5 indicating strongly agree: This ad was convincing; This ad said something important to me; Overall, how much did you agree or disagree with what this ad said?; The information in this ad is believable to me; This ad got my attention. Participants answered these questions after viewing each of the four ads. This scale had good internal consistency, as the Cronbach alpha coefficient was .915 in measuring stimulus ad 1, .938 in measuring ad 2, .896 in measuring ad 3 and .906 in measuring ad 4. The results of the questions measuring effectiveness were averaged into one effectiveness score for each ad. Ad 1 effectiveness had skewness of -.589 (SE=.182) and kurtosis of .054 (SE=.361). Ad 2 effectiveness had skewness of -1.043 (SE=.183) and kurtosis of 1.315 (SE=.363). Ad 3 effectiveness had skewness of -.522 (SE=.185) and kurtosis of 3.899 (SE=.06). Ad 4 effectiveness had skewness of -.634 (SE=.185) and kurtosis of -1.576 (SE=.067).

For research question 2, health intention was an independent variable that was measured. Intentions to smoke were measured using questions from Pechmann and Reibling's (2006) measurement of intent. The participants rated the following items on a scale of 1-5, with 1 indicating strongly disagree and 5 indicating strongly agree: "In the future, I might smoke one puff or more of a cigarette," "I might try out cigarette smoking for a while" and "If one of my best friends were to offer me a cigarette, I would smoke it." The scale had good internal consistency, as the Cronbach alpha coefficient was .921 in measuring health intention. The

results of the questions measuring intentions to smoke were averaged into one health intention score. Skewness for this score was .728 (SE=.187) and kurtosis was -.698 (SE=.371).

For research question 3, moral development levels were measured using the Defining Issues Test 2 (DIT2). The DIT2 is a revised version of the original Defining Issues Test (DIT1) that was a test designed to measure moral development and was derived from Kohlberg's (1976, 1984) work in this area. The DIT2 was created and tested by Rest et al. (1999) to revise the decades-old DIT1. Rest et al. (1999) set out to update the DIT1 by updating the dilemmas presented to participants, shorten the test and make clearer the test's instructions. While Bebeau and Thoma (2003) report the DIT2 reliability to generally be .81, and even lower for the short form version, the Cronbach alpha coefficient was .682. Bebeau and Thoma (2003) mention that reliability may be lower when participants do not represent a full range of educational levels. As the participants in this study were mostly college students, it was expected that the DIT2 reliability for this study would be lower than average. Skewness for the N2 index, a resulting DIT2 score used to analyze moral development, was .717 (SE=.215) and kurtosis was .355 (SE=.427).

CHAPTER 4

RESULTS

The study described here was designed to meet the objective of determining how health campaigns can be more effective and encourage audiences to adopt healthier lifestyles. By determining the factors of health messages that are most effective and how viewers' moral development may impact their perceptions of those messages, better-designed campaigns can be implemented to encourage healthy lifestyles and help curb health care spending both on the public and personal levels. This study is designed to examine which components of ads used in health messages (emotional vs. rational appeals; first person vs. third person benefit), and in which combinations, are more effective, as well as how moral development interacts with perceived effectiveness. An efficacy, 2x2 factorial experiment was implemented to accomplish this objective by measuring the perceived effectiveness of four health PSAs, as well as participants' self-reported health intentions and levels of moral development.

Participant Demographics

A total of 196 respondents participated in the study by answering the questionnaire. Forty-seven participants, or 24% of the total sample, did not provide any demographic information. Out of those who provided demographic information about themselves (N=149), 38% (N=57) were male and 62% (N=92) were female. The average age of the participants was 22.36 years (*SD*=6.027), with 8% (N=12) being between the ages of 15 and 18, 50% (N=75)

being 19-21 years old, and 42% (N=62) being 22 years old or older. Caucasians made up 75.8% of the sample (N=113), with 10.7% (N=16) identifying as African American, 8% (N=12) identifying as Asian or Pacific Islander, 2.7% (N=4) identifying as Hispanic, less than 1% (N=1) identifying as American Indian/other Native American and 2% (N=3) identifying as "other race/ethnicity."

The majority of participants reported they were juniors or seniors at a four-year university (N=120, 61.2%). Students attending a two-year college, freshmen and sophomores comprised 8.2% (N=16) of the sample. Eleven participants (5.6%) were high schoolers, and two participants (1%) reported being a master's or other formal education student. In indicating their personal political views, 22.9% (N=45) indicated they were very liberal or somewhat liberal, 33.2% (N=65) indicated they were very conservative or somewhat conservative, and 19.9% (N=39) reported being neither liberal nor conservative. A majority (69.9%, N=137) were U.S. citizens and spoke English as a primary language, while 6.1% (N=12) were not U.S. citizens and spoke English as a second language. Most of the participants were originally from the South (57.1%, N=112), while 6.6%, 2%, 2% and 6.6% were from the Northeast, Midwest, West, or outside of the U.S., respectively (N=13, 4, 4, 13, respectively).

Manipulation Checks

To determine if the participants viewed the stimulus PSAs as containing the intended manipulations, a total of six questions were asked about each ad: three asking about the appeal they perceived the ad using, and three asking about the benefit being advertised. These manipulation checks were measured as categorical variables (emotional/rational appeal or first person/third person benefit) and, since a Chi-square test explores a relationship between two

categorical variables, a Chi-square test for independence was conducted to determine whether the ads were rated statistically significantly different between the categories. As demonstrated by table 3, at least one manipulation check in each category for each ad was statistically different. Table 3 lists the Chi-square results of the manipulation checks for which there were statistically significant differences.

Table 3

Manipulation Check Chi-square Statistics

Manipulation Check	Chi-Square	df	Asymp. Sig.	Observed N for intended manipulation	Observed N for other manipulation
Ad 1 Appeal Check 1	21.356	1	0.000	121	59
Ad 1 Appeal Check 2	6.084	1	0.014	106	73
Ad 2 Appeal Check 1	86.382	1	0.000	151	27
Ad 2 Benefit Check 1	40.819	1	0.000	131	46
Ad 3 Appeal Check 1	99.197	1	0.000	152	21
Ad 3 Appeal Check 2	131.798	1	0.000	162	11
Ad 3 Appeal Check 3	133.339	1	0.000	161	10
Ad 4 Appeal Check 1	45.786	1	0.000	131	42
Ad 4 Appeal Check 2	113.606	1	0.000	158	17
Ad 4 Appeal Check 3	133.766	1	0.000	164	11
Ad 4 Benefit Check 1	25.034	1	0.000	120	54

One special note is that the benefit component did not rate as well as expected, even though it pretested successfully. After qualitatively inspecting the data, it appears as if the questions intending to determine whether the participants perceived the ads to be “about me” or “about someone else,” in an effort to note whether they saw the ad as demonstrating a first

person or third person benefit, were not relatable, as a large majority (77.5%, N=152) have never or rarely smoked and did not perceive that a smoking ad would be about them.

Ad Effectiveness

Research question 1 asked, "How do components of health campaigns (type of appeal, type of benefit) impact ad effectiveness?" The participants' answers to the three questions measuring effectiveness for each ad were averaged into the participants' effectiveness scores for each ad. To answer the research question, paired samples t-tests were conducted to compare the effectiveness scores of the rational group ads to those of the emotional group ads, and the effectiveness scores of the first person benefit ads to those of the third person benefit ads. The difference in perceived effectiveness between the rational and emotional ads was not statistically significant: When comparing the effectiveness of the ads based on the type of appeal, there was no statistically significant difference between the groups. The difference in perceived effectiveness between the first person and third person ads, however, was statistically significant. The third-person benefit ads were perceived as more effective than the first-person benefit ads, $t(166)=4.056$, $p<.001$.

In looking at the combinations of appeal and benefit and their impact on perceived effectiveness, a repeated measures ANOVA was conducted to determine which ads were rated as most effective. There was a statistically significant difference between the effectiveness of the ads, $F(1,166)=4.934$, $p<.05$. A comparison of the means of the ads' effectiveness scores reveals that ad 2, which contained an emotional appeal with a third-person benefit, was rated the most effective ($M=4.053$, $SD=.815$), followed by ad 3, rational appeal with first-person benefit ($M=3.910$, $SD=.789$), ad 4, rational appeal with third-person benefit ($M=3.737$, $SD=.872$) and ad

1 being rated least effective of the four (M=3.537, SD=.924), which contained an emotional appeal with a first-person benefit.

Additional repeated measures ANOVAs were conducted with demographic information as between-subjects variables and covariates to determine whether differences exist between the participants and their perceptions of the ads' effectiveness. The repeated measures ANOVA returned no significant differences among participants' educational levels, age, or smoking status and perceived ad effectiveness. However, there was a statistically significant effect of the participants' biological sex or gender and perceived ad effectiveness, $F(1, 143)=13.038$, $p<.001$. Females rated each ad more effective than males. Table 4 illustrates this result.

Table 4

Ad Effectiveness and Sex

	Sex	Mean	Std. Deviation	N
Ad 1 (Emotional Appeal/First-Person Benefit)				
	Male	3.1927	1.04914	55
	Female	3.6222	0.83327	90
	Total	3.4593	0.94108	145
Ad 2 (Emotional Appeal/Third-Person Benefit)				
	Male	3.72	0.91214	55
	Female	4.2022	0.73469	90
	Total	4.0193	0.8371	145
Ad 3 (Rational Appeal/First-Person Benefit)				
	Male	3.6691	0.82482	55
	Female	4.0356	0.75585	90
	Total	3.8966	0.80004	145
Ad 4 (Rational Appeal/Third-Person Benefit)				
	Male	3.4364	0.89616	55
	Female	3.8889	0.86225	90
	Total	3.7172	0.89956	145

Health Intention

Research question 2 asked, "How do components of health campaigns (type of appeal, type of benefit) interact with ad effectiveness and health intentions?" To answer this question, a repeated measures ANOVA was conducted to determine if participants' reported intentions to smoke correlated with their perceived effectiveness of the ads. There were significant differences among the rated effectiveness of the ads when using health intention as a covariate, $F(1,162)=4.036$, $p<.05$. Those with a lower reported intention to smoke rated the ads as more effective than those who reported a higher intention to smoke. The ads were evaluated as effective in the same order as general ad effectiveness, with ad 2 being rated higher ($M=4.05$, $SD=.814$), followed by ad 3 ($M=3.915$, $SD=.786$), ad 4 ($M=3.734$, $SD=.873$) and ad 1 being rated lowest of the four ($M=3.53$, $SD=.924$).

To more closely explore the combinations of ad appeal and benefit and their impact on perceived effectiveness, and because significant differences were found among perceived effectiveness when comparing all four ads, additional repeated measures ANOVAs were run to determine if participants' intentions to smoke were correlated with the perceived effectiveness of two ads compared at a time. With health intention as a covariate, there were statistically significant differences between the perceived effectiveness of ad 1, a first-person benefit/emotional appeal ad, and ad 2, a third-person benefit/emotional appeal ad, $F(1, 165)=8.516$, $p<.01$, with ad 2 being rated more effective ($M=4.05$, $SD=.814$) than ad 1 ($M=3.535$, $SD=.924$). There were statistically significant differences between the perceived effectiveness of ad 1 and ad 3, a first-person benefit/rational appeal ad, $F(1,166)=9.438$, $p<.01$, with ad 3 ($M=3.915$, $SD=.786$) being rated more effective than ad 1 ($M=3.53$, $SD=.924$). There was also a statistically significant difference between the perceived effectiveness of ad 1 and ad

4, a third-person benefit/rational appeal ad, $F(1,163)=4.317$, $p<.05$, with ad 4 ($M=3.734$, $SD=.873$) being rated more effective than ad 1 ($M=3.53$, $SD=.924$). However, there were no statistically significant differences between the perceived effectiveness of ads 2 and 3, ads 2 and 4, or ads 3 and 4 when health intention is a covariate. To sum, ads 2, 3 and 4 were all rated significantly more effective than ad 1 when health intention was covaried, but ads 2, 3 and 4 were not significantly more effective than any of the other ads. Table 5 illustrates these findings.

Table 5

Effectiveness Results with Health Intention Covariate

Ad	Rated Higher Than
2: Third-person/Emotional	1: First-person/Emotional
3: First-person/Rational	1: First-person/Emotional
4: Third-person/Rational	1: First-person/Emotional

Moral Development

Research question 3 asked, "How does moral development influence the perceived effectiveness of health messages?" Table 6 presents descriptive statistics of the participants' DIT2 results.

Table 6

DIT2 Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Post Conventional (P Score)	127	.00	68.00	27.1772	14.02613
Personal Interest (Stage 2/3)	127	2.00	70.00	33.1339	13.66397
Maintaining Norms (Stage 4)	127	.00	66.00	31.9055	13.90411
N2 Score	127	-.56	65.33	25.7444	12.73080
Valid N	127				

To answer research question 3, a repeated measures ANOVA was conducted to determine if participants' moral development levels predicted their perceived effectiveness of the ads. There were no statistically significant differences in the effectiveness ratings of the ads with moral development as a covariate. However, to more closely explore the combinations of ad appeal and benefit and their relationship with moral development and perceived effectiveness, additional repeated measures ANOVAs were run to determine if participants' moral development levels were correlated with differences between the perceived effectiveness of two ads compared at a time, rather than all four. With moral development as a covariate, there were statistically significant differences between the perceived effectiveness of ad 1, a first-person benefit/emotional appeal ad, and ad 2, a third-person benefit/emotional appeal ad, $F(1,124)=4.802$, $p<.05$, with ad 2 being rated more effective ($M=4.05$, $SD=.814$) than ad 1 ($M=3.535$, $SD=.924$). There were statistically significant differences between the perceived effectiveness of ad 2 and ad 4, a third-person benefit/rational appeal ad, $F(1,124)=9.485$, $p<.001$, with ad 2 ($M=3.915$, $SD=.786$) being rated more effective than ad 4 ($M=3.734$, $SD=.873$). There was also a statistically significant difference between the perceived effectiveness of ad 3, a first-person benefit/rational appeal ad, and ad 4, $F(1,124)=6.555$, $p<.05$, with ad 3 ($M=3.915$, $SD=.786$) being rated more effective than ad 4 ($M=3.734$, $SD=.873$). However, there were no statistically significant differences between the perceived effectiveness of ads 2 and 3, ads 1 and 3, or ads 1 and 4 when moral development was analyzed as a covariate. To sum, ad 2 was rated significantly more effective than ads 1 and 4, with ad 3 also being rated significantly more effective than ad 4, when moral development was covaried. Table 7 illustrates these findings.

Table 7

Effectiveness Results with Moral Development Covariate

Ad	Rated Higher Than
2: Third-person/Emotional	1: First-person/Emotional
2: Third-person/Emotional	4: Third-person/Rational
3: First-person/Rational	4: Third-person/Rational

The participants' levels of moral development were analyzed using the N2 index score calculated from their DIT2 results. Dong (2009) reported normative scores from a database of DIT2 results, stating that undergraduates (N=32,974) exhibit an average N2 score of 34.76 (SD=15.45). The mean N2 score for this study's sample (N=127), which consists largely of undergraduates, was 25.7 (SD=12.73). As this is significantly lower than average, it may be that the N2 is not a good representation of the strategies participants are using to interpret ad effectiveness. In addition to the overall N2 score, the DIT provides assessments of three developmentally ordered moral schema: personal interest (in which moral judgments are formed with a focus on the self and personal relationships), maintaining norms (which prioritizes the rule of law, social norms, and the role of authority in formulating a moral judgment) and post-conventional (which attends to the underlying shared ideals that ought to organize social cooperation). The N2 score primarily focuses on the most-developed post-conventional schema, but the DIT also offers an index for each schema. Given that the current sample overwhelmingly prefers the maintaining norms schema for making moral judgments, the primary analyses of this study were expanded to include maintaining norms as the index for moral judgment development.

Although differences for ad effectiveness were found among genders, as discussed above, when the maintaining norms (stage 4 score) is covaried out, that significant difference no longer exists. To better examine the relationship between moral development and perceived ad effectiveness, multiple regressions were run to determine where correlations may occur and how strong these relationships are. For ads 1 and 4, there were no significant correlations between moral development and perceived ad effectiveness. For ad 2, however, maintaining norms explained a statistically significant amount of the variance in ad effectiveness, R^2=.094, F(1, 124)=6.296, p<.05. Similarly, for ad 3, maintaining norms explained a statistically significant amount of the variance in ad effectiveness, R^2=.069, F(1, 124)=4.527, p<.05. Thus, when the participant's preferred moral judgment strategy was included in the analysis we find that moral judgment scores do account for a portion of the variance in the ad effectiveness ratings for two of the four ads.

CHAPTER 5

DISCUSSION AND CONCLUSION

As personal and national healthcare expenditures continue to rise, so does the importance of effective health communication that can influence health decisions. Health and prevention campaigns could be an important step toward impacting intentions, but often these campaigns are inconsistent in their effectiveness (Alvaro, et al., 2013; Frieden, 2014). However, understanding the influence of moral development and isolating certain components that make a health campaign more or less effective could lead to the creation of better messages that encourage audiences to engage in healthier lifestyles (Alvaro et al., 2013; Baldwin et al., 2012; Cohen et al., 2007; Frieden, 2014).

The goal of this study was to determine what factors of health PSAs impact ad effectiveness. Further, this study sought to explore health message effectiveness as it relates to the viewer's health intention and a possible new consideration for health message effectiveness: moral development. The 2x2 efficacy experiment described here measured participants' perceived effectiveness of four anti-smoking ads, each including either an emotional or rational appeal and either a first person or third person benefit of quitting smoking. Participants' health intentions and moral development levels were also measured in order to analyze relationships among these variables.

Research Question 1

Research question 1 asked, "How do components of health campaigns (type of appeal, type of benefit) impact ad effectiveness?" Although not many previous studies have compared ad appeals, some research credits emotional appeals with greater ad success (Niederdeppe, et al., 2008; Stafford and Day, 1995; Mahapatra, 2013). In this study, however, paired sample t-tests comparing the effectiveness of the ads based on type of appeal revealed no significant differences between emotional or rational appeals. For this sample, looking at only the type of appeal that was presented in each ad, whether the ad used an emotional or a rational appeal did not impact the participants' perceived effectiveness of that ad. Similarly, few previous studies have examined whether an ad that emphasizes first-hand effects on the self might be more or less effective than one that features the impact a health behavior has on a third-person other, although some research indicates that second-hand effects of smoking in anti-smoking ads were generally effective (Beaudoin, 2002). In this study, the ads presenting a third-person benefit of quitting smoking were perceived as more effective than ads advertising a first-person benefit. When analyzed with the type of benefit as the only consideration, ads that implored the viewer to quit smoking for the sake of those around him or her resonated better with the participants in this study, as indicated by their ratings of effectiveness. These findings indicate that although the type of appeal used in an ad may not impact its perceived effectiveness, whether the ad speaks to benefits to the viewer's self or third-person other should be taken into consideration when designing a campaign for maximum effectiveness, and is deserving of more research.

Evaluating the impact various combinations of these components have on ad effectiveness provides more insight than just weighing the components separately. Analyzing all four ads together revealed statistically significant differences among their effectiveness, as ad 2

was rated most effective, followed by ad 3, ad 4 and ad 1, in order. Ad 2 presented a third-person benefit, which is consistent with the finding that this benefit was more effective, and an emotional appeal. However, the second-most effective ad was ad 3, which was ad 2's opposite, advertising a first-person benefit and rational appeal. Ad 4 was found third-most effective, and it contained a third-person benefit and rational appeal. Ad 1, which consistently was rated least effective, advertised a first-person benefit and emotional appeal.

Most of the participants' demographical information had no bearing on the ads' effectiveness ratings, as there were no significant differences found among educational levels, age, or even smoking status and their perceived effectiveness of the ads. However, the ads used in this study seemed to be more appealing to females than males. There were statistically significant differences among gender and the ads' effectiveness, even though the effectiveness rank order of the ads according to gender was the same as the rank order when gender was controlled: ad 2 was most effective among males and females, followed by ads 3, 4 and 1, respectively. Each of the four ads was more effective among females in this sample than males, as the females' mean effectiveness score was significantly higher for each ad. However, this may indicate that females are generally more affirming than males when making an evaluation.

To answer research question 1, the findings of this study indicate that the type of appeal being used in a health ad does not impact that ad's effectiveness, while messages advertising changing a behavior for the sake of those around the reader are more effective than those beseeching the reader to change for his or her own health benefits. They also indicate that an ad presenting both a third-person benefit and an emotional appeal, or a first-person benefit with a rational appeal, would have a greater influence than an ad presenting only an appeal, only a

benefit, or a different combination of either. These implications would especially apply to female viewers.

Research Question 2

Research question 2 asked, "How do components of health campaigns (type of appeal, type of benefit) interact with ad effectiveness and health intentions?" As discussed in chapter 2, many studies seek to determine how health campaigns influence health intentions (Chang, 2009; Lee, et al., 2013; Pechmann & Reibling, 2006; Rusmevichientong, 2014; Shen 2010). However, there is very little research that examines whether a viewer's existing health intentions impact the way he or she evaluates a health message. In taking into consideration participants' intentions to smoke as a covariate, significant differences were found among perceived ad effectiveness. This is especially interesting in light of participants' smoking status (closed to smoking, open to smoking, prior experimenter, early smoker, or established smoker) having no significant influence on their evaluations of the ads' effectiveness. Lower scores of intentions to smoke predicted greater perceived ad effectiveness than higher intention scores. The ads' rank in order of effectiveness was the same as when health intentions were controlled for, with ad 2 being the most effective and ad 1 being the least effective. For those with a lower intention to smoke, the ad presenting a third-person benefit and an emotional appeal were seen as most efficacious, followed by the ad advertising a first-person benefit and rational appeal.

Looking at comparisons of two ads at a time, rather than comparing all four, provides additional insight into how the combinations of ad components interact with viewers' intentions to smoke. Ads 2, 3 and 4 were all significantly more effective than ad 1, but none of those were more effective than the other three. With this group of participants, using health intention as a

covariate, ad 1 was not effective. This indicates that an ad presenting a first-person benefit with an emotional appeal would not effectively communicate with a targeted audience with low intentions to smoke, and that any of the other combinations (third-person and emotional, first-person and rational, third-person and rational) would be a better choice.

To answer research question 2, the results of these analyses indicate that using either an ad with a third-person benefit and an emotional appeal, or one with a first-person benefit and a rational appeal, would have success communicating with viewers who already have low intentions to smoke. An ad presenting a first-person benefit and emotional appeal would not be effective among this audience. Ads 2 and 3 in this experiment would be particularly effective as part of a prevention campaign targeting this sample of participants.

Research Question 3

Research question 3 asked, "How does moral development influence the perceived effectiveness of health messages?" Moral development determines how individuals judge what is right, wrong, just, etc. This development has implications when targeting individuals with messages that impact their behaviors. This is especially true when considering health campaigns, as campaigns designed to encourage the adoption of beliefs or behaviors that enhance a person's health or quality of life often frame these behaviors as being "good for you." Knowing how different groups of individuals judge what is "good" is important in developing effective messages for them. The neo-Kohlbergian perspective defines moral development as occurring in three schemas: personal interest, maintaining norms, and post-conventional. (See chapter 2 for a more detailed discussion about moral judgment and the schemas of moral development.) As this sample of participants were mostly students in high school or undergraduate college, it could be

reasonably assumed most of these students would be in a maintaining norms schema of development, where their focus has been shifted to the group and what the group defines as right and wrong, or entering a post-conventional stage, where the focus shifts beyond group norms and conventions to more universal definitions of goodness and justice.

In analyzing moral development as a covariate with the ads' effectiveness, there were no significant differences found. A surface exploration of this concept would make it appear as if moral development does not have any influence in how these participants perceived the ads. However, a more detailed look at the differences in perceived ad effectiveness, by comparing two ads at a time rather than all four, revealed that ad 2 was perceived as more effective than ads 1 or 4, and ad 3 was also more effective than ad 4. Taking levels of moral development as calculated by participants N2 index scores into consideration, ads 2 and 3 were considered the most effective, even though there were no significant differences between the two.

However, the DIT2 results for this sample were lower than average for individuals of similar age and education level, and the sample itself did not contain individuals of a range of education levels idealized for moral judgment studies, perhaps skewing the outcome of this investigation. A more accurate examination of this data, then, involves analyzing levels of moral judgment from the perspective of developmental indices. Examining differences in ad effectiveness using the maintaining norms schema as a covariate negated the differences found among the ads' ratings by gender. While before there was a significant difference between the way males and females rated the ads when other factors are controlled, the presence of the maintaining norms schema, which it could be reasonably assumed would be prominent among this sample, disavowed that difference. Further, regressions run to look more closely at the impact of moral development on the perception of health message effectiveness revealed that ads

2 and 3 were again more effective among those with higher maintaining norms schema reasoning than the other ads. Ads 2 and 3 appealed more to those who scored higher in the maintaining norms schema, suggesting that moral development does come into play in rating the effectiveness of health messages.

Realizing that participants in this study preferred the maintaining norms schema for making moral judgments helps provide some insight into their penchant for ad 2 in most analyses. Ad 2 presented an emotional appeal with a third-person benefit, and individuals in the maintaining norms schema believe that without law there is no order, and that maintaining social order defines morality. They identify existing rules and authorities and obey those authorities out of respect for the system. When individuals develop into this schema of moral reasoning, their focus has been shifted to the group and what the group defines as right and wrong. Actions are performed based on laws and group-wide decisions, and there is an assumption that laws and rules will be applied society-wide and maintain a level of reciprocity.

To answer research question 3, the findings of this study indicate that moral development does play a role in how an individual evaluates a health ad. The ads presenting a third-person benefit and an emotional appeal, or a first-person benefit and a rational appeal, were more effective among those who rated higher in the maintaining norms schema and among those with higher moral development as indicated by the N2 index score. Taking moral judgment into account through developmental indices for this sample also seemingly erased gender differences in ad effectiveness that were revealed in previous analyses.

Practical Implications

As this experiment was based on the efficacy design proposed by Evans et al. (2009), additional practical implications can be drawn from these results. The efficacy study designed to test these anti-smoking messages allowed for more experimental control, ensuring each participant was exposed to the message and allowing for the determination of whether these messages could be effective under ideal situations. This design helped determine whether using the experimental materials could be effective before any time, money and effort are expended in executing a campaign.

The results demonstrated that the most effective health PSAs used in this experiment were ad 2, which presented a third-person benefit and emotional appeal, and ad 3, which presented a first-person benefit and rational appeal. These two ads were consistently rated most effective in every scenario where significance was found: with other factors controlled for, gender as a between-subjects variable, intention to smoke as a covariate, moral development as a covariate, and maintaining norms schema as a covariate. Even when the ads were compared two at a time rather than all four together, ads 2 and ads 3 were significantly more effective than the other ads. Conversely, ad 1, which presented a first-person benefit and emotional appeal, was consistently rated as the least effective ad of the four health PSAs used in this experiment. Further, in gauging only the type of appeal or type of benefit advertised, the type of appeal alone produced no significant differences, while third-person benefit was rated more effective than first-person benefit.

These results suggest that the combinations of the third-person benefit with an emotional appeal and the first-person benefit with a rational appeal disseminate an anti-smoking message in a way that viewers perceive as effective. This appears to be especially true for females, those

with lower intentions to smoke, and those with higher moral reasoning in the maintaining norms schema. However, the ad component combination of first-person benefit with an emotional appeal was essentially perceived as ineffective.

The results of this study also show that moral development should be taken into consideration when designing health messages. In this study, those who scored higher in the maintaining norms schema perceived the third-person benefit and emotional appeal components as most effective. The maintaining group norms schema states individuals begin focusing on group conventions and doing things because the group decided what actions were right and wrong, so it is unsurprising that those who score higher in this schema would find a message advertising a third-person benefit most effective. Messages designed to influence health behaviors of individuals in the maintaining norms schema of moral development should focus on group norms, emphasizing that the behaviors are beneficial for the group, that the group approves or doesn't approve of doing them, or that the behaviors follow the group's agreed upon rules.

Limitations & Directions for Future Research

While this study produced interesting insights into the perception of health messages, several limitations prohibit the results from being generalized to any larger population beyond the students who participated in the study. First, time and money limitations necessitated the use of a convenience sample recruited from students enrolled in classes at the University of Alabama in the semesters during which data collection took place. This resulted in a relatively homogenous sample, majority female and Caucasian averaging 22 years old. While a homogenous sample helps limits confounding variables in examining perceived ad effectiveness

and answering research questions 1 and 2, a more diverse sample would have enabled a better exploration of moral development's ties to message evaluation. The sample was also limiting in that a majority reported having never or rarely smoked. The participants' already low intentions to smoke and young age may have impacted their judgments of the ads. Future studies in this area using similar samples should utilize stimulus materials that advertise a more relatable health message that more greatly impacts the participants, such as healthy eating or exercise.

Second, this sample generated moral development scores that deviate from the norms as reported by Dong (2009). The normative N2 index score for undergraduates is 34.76, while the students in this sample returned an average of 25.7. The results of this study do not allow for speculation as to why the moral development levels for this sample would be so much lower than average, although the relatively unvaried demographical characteristics of the participants would impact moral development results. The lack of educational diversity in the sample prohibits a rich analysis of perceived ad effectiveness over varying levels of moral development, which is necessary to reach a full understanding of how these two areas may overlap. Further, this sample returned no significant moral development differences among any demographic information tested: age, educational level, gender, race, smoking status, political view, or type of college attended. As research shows that moral development should differ among ages and educational levels (Armon & Dawson, 1997; Thoma, 1986; Rest, 1975; King & Mayhew, 2002; Walker, 1984; Coleman, 2011; Mayhew & Engberg, 2010; Maeda, Thoma & Bebeau, 2009), and sometimes gender (Maeda, Thoma & Bebeau, 2009; Thoma, 1986; Walker, 1984), typical DIT2 results should show at least some variation among demographic variables, thus providing further evidence as to the non-normative state of this sample. The results from this study indicate that the interaction of moral development and health message effectiveness should be studied further;

however, future studies in this area should utilize diverse samples, especially in regard to educational level.

The ads used in the study also served as a limitation. Presenting the specific components desired—emotional and rational appeals, first-person and third-person benefits—required differences in the ads that may have impacted their perceived effectiveness beyond the variables studied. Each ad varied in the photo, colors, words and layouts used to demonstrate the variables of interest. Ad 2, which was consistently the highest-rated ad, was the only ad to contain the picture of a human being, which added to the emotional value of the ad but made it markedly different from the other ads. Ad 1, which was consistently the lowest rated ad, was the only ad in portrait orientation. Future research in this area should use stimulus materials that are as identical as possible while still containing the desired manipulations.

Even though this study produced interesting results that provided insight into how various ad components interact to impact perceived effectiveness, this topic should be studied further. For this sample, the combination of third-person benefit and emotional appeal, as well as first-person benefit and rational appeal, were effective in communicating an anti-smoking message. However, a majority of this sample reported that they have never or rarely smoked, a characteristic that may have impacted these participants' responses to questions about the ads they viewed. Those who do not smoke may naturally find an anti-smoking message appealing, or may not relate to any message regarding smoking. To more fully understand how the type of benefit and appeal used in a health ad interact to impact the effectiveness of a health message, a variety of health messages should be studied on a variety of samples. For instance, would these results be replicated in a study using ads that encourage healthy diets or regular exercise? Would the type of appeal and benefit impact the effectiveness of a message encouraging certain

behaviors known to prevent different types of cancers? Do different components affect the perceived efficacy of messages differently among various age groups, genders, races or educational levels? While this study made an important step in understanding how to better design health messages, these questions are important to answer in order to distinctly improve health campaigns and, in turn, impact health behaviors and expenditures and create an overall healthier citizenry.

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APPENDIX A

INSTITUTIONAL REVIEW BOARD PROTOCOL APPROVAL LETTER

May 30, 2014

Virginia Johnson
College of Communication and Information Sciences
Box 870172

Re: IRB#: 14-0R-203 "Health Communication Efficacy"
Dear Ms. Johnson:
The University of Alabama Institutional Review Board has granted approval for your proposed research.

Your application has been given expedited approval according to 45 CFR part 46. You have also been granted the requested waivers. Approval has been given under expedited review category 7 as outlined below:

(7) Research on individual or group characteristics or behavior (including, but not limited to, research on perception, cognition, motivation, identity, language, communication, cultural beliefs or practices, and social behavior) or research employing survey, interview, oral history, focus group, program evaluation, human factors evaluation, or quality assurance methodologies

Your application will expire on May 28, 2015. If your research will continue beyond this date, complete the relevant portions of the IRB Renewal Application. If you wish to modify the application, complete the Modification of an Approved Protocol Form. Changes in this study cannot be initiated without IRB approval, except when necessary to eliminate apparent immediate hazards to participants. When the study closes, complete the appropriate portions of the IRB Request for Study Closure Form.

Please use reproductions of the IRB approved stamped information sheet to provide to your participants.

Should you need to submit any further correspondence regarding this proposal, please include the above application number.

Good luck with your research.

Sincerely,

Carpantato T. Myles, MSM, CIM, CIP
Director & Research Compliance Officer
Office of Research Compliance
The University of Alabama

APPENDIX B

PARTICIPANT INFORMATION FORM

Dear Student,

My name is Nia Johnson, and I am a graduate student at the University of Alabama. I am doing a study called Health Campaign Efficacy. This study is being done to find out how health messages can be more effective by determining how young people respond to ads.

In order to learn how messages can be more effective, I am asking students to view four advertisements, and then answer some questions about those ads, about moral situations, and about themselves. You are being asked to participate in this study by viewing the ads and answering the questions. This will take you less than an hour.

This knowledge is important/useful because by determining the factors of health messages that are most effective, better-designed campaigns can be implemented to encourage healthy lifestyles among young people. The results of this study will help health campaign designers understand better ways to communicate their messages.

No one will be able to tell what you said or did during this study. We will not tell your parents or teachers how you answered any of the questions. If you do not want to participate, it will not hurt your grade.

If something makes you feel bad while you are in the study, please call or email me. You do not have to finish the study. You can stop whenever you want—just tell me. You can ask me about this study right now or at any time. Call me at 205-913-6685 or email me at vemccurry@crimson.ua.edu.

It does not cost you anything to participate; the only cost to you from this study is your time. You will not be compensated for being in this study.

No risk, dangers or harm are foreseen to you if you participate in this study. Although you will not benefit personally from being in the study, you may feel good about knowing that you have helped determine how we can better reach other young people with important health messages.

If you are enrolled in certain courses, you may be eligible for extra credit if you participate in this study. Your course instructor will provide you with more information about how much extra credit you can earn by participating in this study. I will provide instructors with the names of the

students who participate, but I won't show the instructors any of your answers and I will delete your name from the questionnaire as soon as I give the instructor your name.

If you have questions, concerns, or complaints about the study call me at 205-913-6685 or email me at vemccurry@crimson.ua.edu.

If you have questions about your rights as a person in a research study, call Ms. Tanta Myles, the Research Compliance Officer of the University, at 205-348-8461 or toll-free at 1-877-820-3066.

You may also ask questions, make suggestions, or file complaints and concerns through the IRB Outreach website at http://osp.ua.edu/site/PRCO_Welcome.html or email the Research Compliance office at participantoutreach@bama.ua.edu.

After you participate, you are encouraged to complete the survey for research participants that is online at the outreach website or you may ask the investigator for a copy of it and mail it to the University Office for Research Compliance, Box 870127, 358 Rose Administration Building, Tuscaloosa, AL 35487-0127.

I have read this information form and by checking the box below I agree to participate in this study.

[check box here] I have read this participant information form and agree to participate in this study.

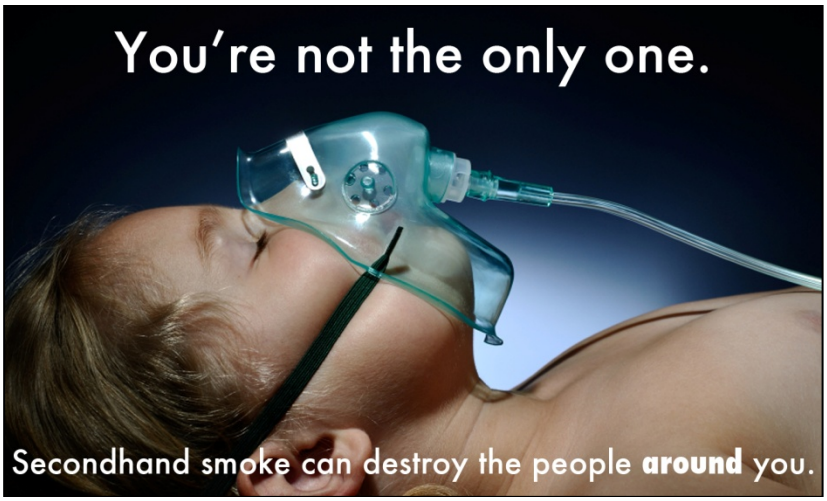
If you would like to print out a copy of this consent form for your records, you may do so before you start the survey.

APPENDIX C

STIMULUS ADS

Ad 1

Ad 2



Ad 3


SMOKING INCREASES YOUR RISK FOR
HEART DISEASE BY 4 TIMES
STROKE BY 4 TIMES
LUNG CANCER BY 25 TIMES

Ad 4


Each year
almost 50,000 people
DIE from SECONDHAND SMOKE.

APPENDIX D

STUDY QUESTIONNAIRE

Pre-exposure

1. Select your age range:
    a. younger than 15
    b. 15-25
    c. older than 25

2. Select the level of education you are currently enrolled in:
    a. Less than 9th grade
    b. 10th grade-college undergraduate
    c. Graduate school
    d. Not currently enrolled in school

3. How often do you smoke cigarettes?
    a. I've never smoked and do not intend to.
    b. I've never smoked, but I might smoke in the future.
    c. I've tried cigarettes, but I have not smoked during the past 30 days.
    d. I've smoked 1-19 days during the last 30 days.
    e. I've smoked 20 or more days during the last 30 days.

During exposure (manipulation checks while viewing each ad)

This ad is:
4. logical/emotional
5. objective/subjective
6. factual/nonfactual

This ad:
7. is about me/about someone else
8. is about something that impacts me/is about something that impacts those around me
9. affects me/affects someone close to me

Post-exposure to each ad

On a scale of 1-5, rate your level of agreement with the following:
10. This ad was convincing.

11. This ad said something important to me.
12. Overall, how much did you agree or disagree with what these ads said?
13. The information in these ads about smoking is believable to me.
14. This ad got my attention.

How would you rate this ad?*
15. good-bad
16. likeable-not likeable
17. irritating-not irritating
18. interesting-not interesting

After viewing all ads:

I think smoking is:*
19. good/bad
20. wise/foolish
21. favorable/unfavorable
22. desirable/undesirable
23. beneficial/ detrimental

On a scale of 1-5, rate your level of agreement with the following:
24. In the future, I might smoke one puff or more of a cigarette.
25. I might try out cigarette smoking for a while.
26. If one of my best friends were to offer me a cigarette, I would smoke it.

The rest of this questionnaire is concerned with how you define the issues in a social problem. Several stories about social problems will be described. After each story, there will be a list of questions. The questions that follow each story represent different issues that might be raised by the problem. In other words, the questions/issues raise different ways of judging what is important in making a decision about the social problem. You will be asked to rate and rank the questions in terms of how important each one seems to you.

PLEASE TRY TO FINISH THE QUESTIONNAIRE IN ONE SITTING.

Imagine you are about to vote for a candidate for the Presidency of the United States. Before you vote, you are asked to rate the importance of five issues you could consider in deciding who to vote for. Rate the importance of each item (issue) by checking the appropriate box.

*1. Rate the following issues in terms of importance. (Great, Much, Some, Little, No)
1. Financially are you personally better off now than you were four years ago?
2. Does one candidate have a superior moral character?
3. Which candidate stands the tallest?
4. Which candidate would make the best world leader?
5. Which candidate has the best ideas for our country's internal problems, like crime and healthcare?

Note. Some items may seem irrelevant or not make sense (as in item #3). In that case, rate the item as "NO".

After you rate all of the items you will be asked to RANK the top four items in terms of importance. Note that it makes sense that the items you RATE as most important should be RANKED as well. So if you only rated item 1 as having great importance you should rank it as most important.

*2. Consider the 5 issues above and rank which issues are the most important.
1 2 3 4 5
Most important item
Second most important
Third most important
Fourth most important

Again, remember to consider all of the items before you rank the four most important items and be sure that you only rank items that you found important.

Note also that before you begin to rate and rank items you will be asked to state your preference for what action to take in story.
Thank you and you may begin the questionnaire!

Famine
The small village in northern India has experienced shortages of food before, but this year's famine is worse than ever. Some families are even trying to feed themselves by making soup from tree bark. Mustaq Singh's family is near starvation. He has heard that a rich man in his village has supplies of food stored away and is hoarding food while its price goes higher so that he can sell the food later at a huge profit. Mustaq is desperate and thinks about stealing some food from the rich man's warehouse. The small amount of food that he needs for his family probably wouldn't even be missed.
*3. What should Mustaq Singh do? Do you favor the action of taking food?
Should take the food
Can't decide
Should not take the food

*4. Rate the following issues in terms of importance.
Great
Much
Some
Little
No
1. Is Mustaq Singh courageous enough to risk getting caught for stealing?
2. Isn't it only natural for a loving father to care so much for his family that he would steal?
3. Shouldn't the community's laws be upheld?
4. Does Mustaq Singh know a good recipe for preparing soup from tree bark?
5. Does the rich man have any legal right to store food when other people are starving?

6. Is the motive of Mustaq Singh to steal for himself or to steal for his family?
7. What values are going to be the basis for social cooperation?
8. Is the epitome of eating reconcilable with the culpability of stealing?
9. Does the rich man deserve to be robbed for being so greedy?
10. Isn't private property an institution to enable the rich to exploit the poor?
11. Would stealing bring about more total good for everybody concerned or wouldn't it?
12. Are laws getting in the way of the most basic claim of any member of a society?
*5. Consider the 12 issues above and rank which issues are the most important.

Most important item
Second most important
Third most important
Fourth most important

Reporter

Molly Dayton has been a news reporter for the Gazette newspaper for over a decade. Almost by accident, she learned that one of the candidates for Lieutenant Governor for her state, Grover Thompson, had been arrested for shop-lifting 20 years earlier. Reporter Dayton found out that early in his life, Candidate Thompson had undergone a confused period and done things he later regretted, actions which would be very out-of-character now. His shoplifting had been a minor offense and charges had been dropped by the department store. Thompson has not only straightened himself out since then, but built a distinguished record in helping many people and in leading constructive community projects. Now, Reporter Dayton regards Thompson as the best candidate in the field and likely to go on to important leadership positions in the state. Reporter Dayton wonders whether or not she should write the story about Thompson's earlier troubles because in the upcoming close and heated election, she fears that such a news story could wreck Thompson's chance to win.

*6. Do you favor the action of reporting the story?

Should report the story
Can't decide
Should not report the story

*7. Rate the following issues in terms of importance.

Great
Much
Some
Little
No

1. Doesn't the public have a right to know all the facts about all the candidates for office?
2. Would publishing the story help Reporter Dayton's reputation for investigative reporting?
3. If Dayton doesn't publish the story wouldn't another reporter get the story anyway and get the credit for investigative reporting?
4. Since voting is such a joke anyway, does it make any difference what reporter Dayton does?
5. Hasn't Thompson shown in the past 20 years that he is a better person than his earlier days as a shop-lifter?
6. What would best service society?
7. If the story is true, how can it be wrong to report it?

8. How could reporter Dayton be so cruel and heartless as to report the damaging story about candidate Thompson?
9. Does the right of "habeas corpus" apply in this case?
10. Would the election process be more fair with or without reporting the story?
11. Should reporter Dayton treat all candidates for office in the same way by reporting everything she learns about them, good and bad?
12. Isn't it a reporter's duty to report all the news regardless of the circumstances?
*8. Consider the 12 issues you rated above and rank which issues are the most important.

Most important item
Second most important
Third most important
Fourth most important

School Board

Mr. Grant has been elected to the School Board District 190 and was chosen to be Chairman. The district is bitterly divided over the closing of one of the high schools. One of the high schools has to be closed for financial reasons, but there is no agreement over which school to close. During his election to the School Board, Mr. Grant had proposed a series of "Open Meetings" in which members of the community could voice their opinions. He hoped that dialogue would make the community realize the necessity of closing one high school. Also he hoped that through open discussions, the difficulty of the decision would be appreciated, and that the community would ultimately support the school board decision. The first Open Meeting was a disaster. Passionate speeches dominated the microphones and threatened violence. The meeting barely closed without fist-fights. Later in the week, school board members received threatening phone calls. Mr. Grant wonders if he ought to call off the next Open Meeting.
*9. Do you favor calling off the next Open Meeting

Should call off the next open meeting
Can't decide
Should have the next open meeting

*10. Rate the following issues in terms of importance.

Great
Much
Some
Little
No

1. Is Mr. Grant required by law to have Open Meetings on major school board decisions?
2. Would Mr. Grant be breaking his election campaign promises to the community by discontinuing the Open Meetings?
3. Would the community be even angrier with Mr. Grant if he stopped the Open Meetings?
4. Would the change in plans prevent scientific assessment?
5. If the school board is threatened, does the chairman have the legal authority to protect the Board by making decisions in closed meetings?
6. Would the community regard Mr. Grant as a coward if he stopped the open meetings?
7. Does Mr. Grant have another procedure in mind for ensuring that divergent views are heard?

8. Does Mr. Grant have the authority to expel troublemakers from the meetings or prevent them from making long speeches?
9. Are some people deliberately undermining the school board process by playing some sort of power game?
10. What effect would stopping the discussion have on the community's ability to handle controversial issues in the future?
11. Is the trouble coming from only a few hotheads, and is the community in general really fair-minded and democratic?
12. What is the likelihood that a good decision could be made without open discussion from the community?
*11. Consider the 12 issues you rated above and rank which issues are the most important.

Most important item
Second most important
Third most important
Fourth most important

Cancer
Mrs. Bennett is 62 years old, and in the last phases of colon cancer. She is in terrible pain and asks the doctor to give her more pain-killer medicine. The doctor has given her the maximum safe dose already and is reluctant to increase the dosage because it would probably hasten her death. In a clear and rational mental state, Mrs. Bennett says that she realizes this; but she wants to end her suffering even if it means ending her life. Should the doctor give her an increased dosage?
*12. Do you favor the action of giving more medicine?

Should give Mrs. Bennett an increased dosage to make her die.
Can't decide
Should not give her an increased dosage

*13. Rate the following issues in terms of importance.

Great
Much
Some
Little
No

1. Isn't the doctor obligated by the same laws as everybody else if giving an overdose would be the same as killing her?
2. Wouldn't society be better off without so many laws about what doctors can and cannot do?
3. If Mrs. Bennett dies, would the doctor be legally responsible for malpractice?
4. Does the family of Mrs. Bennett agree that she should get more painkiller medicine?
5. Is the painkiller medicine an active heliotropic drug?
6. Does the state have the right to force continued existence of those who don't want to live?
7. Is helping to end another's life ever a responsible act of cooperation?
8. Would the doctor show more sympathy for Mrs. Bennett by giving the medicine or not?
9. Wouldn't the doctor feel guilty from giving Mrs. Bennett so much drug that she died?
10. Should only God decide when a person's life should end?
11. Shouldn't society protect everyone against being killed?

12. Where should society draw the line between protecting life and allowing someone to die if the person wants to?

*14. Consider the 12 issues you rated above and rank which issues are the most important.

Most important item
Second most important
Third most important
Fourth most important

Demonstration

Political and economic instability in a South American country prompted the President of the United States to send troops to "police" the area. Students at many campuses in the U.S.A. have protested that the United States is using its military might for economic advantage. There is widespread suspicion that big oil multinational companies are pressuring the President to safeguard a cheap oil supply even if it means loss of life. Students at one campus took to the streets in demonstrations, tying up traffic and stopping regular business in the town. The president of the university demanded that the students stop their illegal demonstrations. Students then took over the college's administration building, completely paralyzing the college. Are the students right to demonstrate in these ways?

*15. Do you favor the action of demonstrating in this way?

Should continue demonstrating in these ways
Can't decide
Should not continue demonstrating in these ways

*16. Rate the following issues in terms of importance.

Great
Much
Some
Little
No

1. Do the students have any right to take over property that doesn't belong to them?
2. Do the students realize that they might be arrested and fined, and even expelled from school?
3. Are the students serious about their cause or are they doing it just for fun?
4. If the university president is soft on students this time, will it lead to more disorder?
5. Will the public blame all students for the actions of a few student demonstrators?
6. Are the authorities to blame by giving in to the greed of the multinational oil companies?
7. Why should a few people like Presidents and business leaders have more power than ordinary people?
8. Does this student demonstration bring about more or less good in the long run to all people?
9. Can the students justify their civil disobedience?
10. Shouldn't the authorities be respected by students?
11. Is taking over a building consistent with principles of justice?
12. Isn't it everyone's duty to obey the law, whether one likes it or not?

*17. Consider the 12 issues you rated above and rank which issues are the most important.

Most important item
Second most important
Third most important

Fourth most important

Please provide some information about yourself:

27. Sex:
    a. Male
    b. Female
28. What is your age? (Enter in years.)
    a. _____
29. Which best describes your race/ethnicity? [Check all that apply]
    a. African American or Black
    b. Asian or Pacific Islander
    c. Hispanic
    d. American Indian/ Other Native American
    e. Caucasian (other than Hispanic)
    f. Other (please specify)
30. What is your level of education? Please mark the highest level of formal education you are currently enrolled in or have completed:
    a. Grades 7, 8 9
    b. Grades 10,11,12
    c. Vocational/Technical school (schools that do not offer a bachelor's degree)
    d. Junior College
    e. Freshman in a bachelor's degree program
    f. Sophomore in a bachelor's degree program
    g. Junior in a bachelor's degree program
    h. Senior in a bachelor's degree program
    i. Professional Degree beyond the bachelor's degree (M.D., M.B.A., D.D.S., J.D., Nursing)
    j. Professional degree in Divinity
    k. Master's in teaching or Master's in Education
    l. Master's degree in graduate school
    m. Doctoral degree Ed.D.
    n. Doctoral degree Ph.D.
    o. Other
31. Type of college attended:
    a. Two year college
    b. Four year college
    c. N/A
32. If you are a college undergraduate or graduate student, what is your major field of study?
    a. _____
33. If you are a college undergraduate or graduate student, what is your minor field of study?
    a. _____
34. Household income:
    a. < $24,999
    b. $25,000-$49,999
    c. $50,000-$74,999
    d. $75,000-$99,999

    e. $100,000+
35. Marital status:
    a. Single/Never married
    b. Married
    c. Divorced
    d. Separated
    e. Widowed
36. Number of children:
    a. 0
    b. 1
    c. 2
    d. 3
    e. 4
    f. 5+
37. What region of the U.S. are you from originally?
    a. Northeast
    b. Midwest
    c. South
    d. West
    e. not from the U.S.
38. Where do you currently reside?
    a. Northeast
    b. Midwest
    c. South
    d. West
    e. not in the U.S.
39. In terms of your political views, how would you characterize yourself?
    a. Very Liberal
    b. Somewhat Liberal
    c. Neither Liberal nor Conservative
    d. Somewhat Conservative
    e. Very Conservative
40. Are you a citizen of the U.S.A?
    a. Yes
    b. No
41. Is English your primary language?
    a. Yes
    b. No

*The answers to these questions were not used in the final analysis for this study.