ABOVE THE INFLUENCE: EXAMINING THE IMPACT OF
UNINTENTIONAL NORMATIVE MESSAGES IN FEAR APPEAL BASED
ANTI-MARIJUANA PUBLIC SERVICE ANNOUNCEMENTS

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The motion picture you are about to witness may startle you. It would not have been possible otherwise, to sufficiently emphasize the frightful toll of the new drug menace which is destroying the youth of America in alarmingly increasing numbers. Marihuana is that drug -- a violent narcotic -- an unspeakable scourge -- The Real Public Enemy Number One!

-Reefer Madness
ABSTRACT OF THE THESIS

Above the Influence: Examining the Impact of Unintentional Normative Messages in Fear Appeal Based Anti-Marijuana Public Service Announcements

by
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The present study examines the immediate attitudinal effects of fear appeal and normative persuasive messages in the National Youth Anti-Drug Campaign’s anti-marijuana public service announcements. The public service announcements are a part of a series called the “Above the Influence” campaign, which attempts to utilize modern electronic media to communicate anti-marijuana messages. However, an opposing body of research has claimed that there are so-called boomerang effects occurring as a result of unintentional normative messages being present in many of the campaign’s advertisements. The present study aims to reconcile the contradictory findings present in the previous research by exposing subjects to differing levels of Above the Influence PSAs and determining the effects of increased exposure. The present study does not provide any statistically significant evidence indicating that the fear appeals were effective, and findings contradict the National Youth Anti-Drug Campaign research claiming that the ads are creating more anti-marijuana attitudes among teens. However, the results from the present study also fail to confirm the existence of normative messages being unintentionally communicated in the Above the Influence PSAs. Finally, the present study does provide evidence of a positive correlation between perceived normativeness of marijuana use and pro-marijuana attitudes.
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I don’t know exactly how obtaining my Master’s degree is going to impact my life, but my grandfather always said “education is never a waste.” I know that the knowledge, wisdom, and experience that I have gained in this process are going to be much more valuable than any piece of paper that I am handed at graduation. I will always believe education is meant to hold more intrinsic than materialistic value, and I could have easily walked away from this experience without the degree in hand, but thanks to a few key people I was compelled to return and obtain the document that states my completion of the Master’s program. I would like to thank Brianne – you made every day of grad school fun and being around you was and always will be the best part of my day. Peter – your positivity and tenacity in life and education is inspiring, Patricia – thanks for the kick in the butt when I needed it, and my mom, who has had amazing confidence in me and who has an amazing subliminal mind control over me to get me to do anything… planting seeds… Whether or not I ever put Master’s Degree in Communication on a resume is inconsequential… The experiences I have had, the people I have met, and the knowledge I have gained… Have all been worth the effort… and the money that I will be paying back for the next few years... ugh.

Thank you for reading, and keep tuned in: it is only going to get bigger and better from here.
CHAPTER 1

INTRODUCTION

The “War on Drugs” did not officially begin until 1971 when President Nixon declared so in an address to congress that was made in conjunction with the two-year anniversary of the creation of a National Drug Policy. President Nixon stated that marijuana is “public enemy number one” but whether or not he meant to borrow rhetoric from the infamous film Reefer Madness, is unknown. It is important to note that this so called “War on Drugs” had begun several years before in media and film. The battle against drugs has been fought on two fronts. In addition to the legal battle and police actions against illicit drugs, a campaign of anti-drug public service announcements (PSAs) and propaganda has attempted to persuade our citizens to avoid harmful drugs entirely. It is safe to say that reefer madness was the first anti-drug PSA and that anti-drug PSAs have come a long way.

While the war on drugs has been fought for several decades it was not until the last ten to fifteen years that communication scholars have taken a critical eye to the theoretical background from which anti-drug PSAs seem to be basing their persuasive appeals. Within this relatively short window of exploration there have been several conflicting conclusions drawn about the relevance, importance, ethics, and effectiveness of these campaigns. Much of their focus has been on a contentious anti-marijuana campaign labeled “Above the Influence.” It is important to examine and explain the various paradoxes and contradictions that exist within the recent body of research regarding this particular campaign and to attempt to reconcile the various incongruent findings with sound theoretical perspectives. In doing so, the first chapter of this thesis aims to provide the justification for further study in the area of persuasion and anti-marijuana PSAs. In particular, this chapter provides an examination of literature regarding the “Above the Influence Campaign,” a theoretical explanation of the persuasive appeals found in many of the anti-marijuana PSAs, and finally a critique of the research methods used thus far to measure the effectiveness in past studies. This literature review will reveal the paradoxes in the current literature, and provide justification for the study that is presented in the following chapters.
RATIONALE

Created by Congress in 1998 in response to a rising trend in teen substance abuse, the “Above the Influence” and “Parents…the Anti-Drug” media campaigns have been using the power of advertising toward teens and parents to strengthen anti-drug attitudes and behaviors. The advertisements have been spread through a variety of media including the Internet, education systems, and television. The most recent anti-drug media campaign has attempted to function at a national level to “establish and reinforce anti-drug beliefs and behaviors” (National Youth Media Drug Campaign, 2009). As part of an integrated approach with other federal, state and local efforts, the campaign aims to prevent and reduce illicit drug use among youth. In addition the campaign aims to:

Offer support to parents in their efforts to keep their children drug-free. The Media Campaign uses all available media tools – from TV, radio, print and Web-based advertising, to other means of public communications outreach – and is showing success. (National Youth Media Drug Campaign, 2009)

Research regarding the effectiveness of these campaigns has proved to be quite contradictory. The research results provided on the campaign’s website (Palmgreen, Lorch, Stephenson, Hoyle, & Donohew, 2007) indicate that the campaign has been very effective, explaining that:

Since 2001, teen drug use has declined overall. Notably, a recent study examining the impact of the Media Campaign’s “marijuana initiative” showed declines in teen marijuana use among the teen target, during a time in which these teens were not exposed to any other similar campaigns or in-school programs (National Youth Media Drug Campaign, 2009).

In addition the website references a second study; Longshore, Ghosh-Dastidar, and Ellickson (2006) stated that:

Additionally, research also shows that teens that were exposed to the Media Campaign’s messages, along with an in-school program, were significantly less likely to smoke marijuana as teens that were exposed to the in-school program alone (National Youth Media Drug Campaign, 2009).

Finally, Schmuckler (2006) reported that:

…few [campaigns] have been as effective as the one spearheaded last year by Foote Cone & Belding for the federal National Youth Anti-Drug Media Campaign. The media plan charted a new course in the third year of a five-year effort to reduce teenage marijuana use by 25 percent. Foote Cone surpassed annual awareness goals in a matter of months as it established a new strategy for talking to teens (p. SR3).
However, while the government continues to spend money on these anti-drug campaigns, organizations critical of the campaign have sprung up all over the internet; Students for a Sensible Drug Policy, Stopthewar.org, Safeaccessnow.org, and Norml.org to name a few. With the 2010 efforts to tax and control marijuana use in California, this debate has been pushed to the forefront. Many organizations have begun to voice their opinion against the large government spending on what some call an “offensive and misleading anti-drug advertising campaign” (Norml.org, 2009; Safeaccessnow.org, 2009; Stopthewar.org, 2009; Students for a Sensible Drug Policy, 2009). According to Students for a Sensible Drug Policy (2009):

While it is important to educate young people about the effects of drugs and drug abuse, these ads are an abysmal failure. Young people want to know the truth about the effects of drugs and their real risks. But when we see ads that obviously exaggerate and stretch reality for political purposes, we are offended and turned off to anything credible the government may have to say. So it's not at all surprising that a series of federally-funded research studies show that the ads are not only ineffective, but can actually make some young people more likely to use drugs. (Students for a Sensible Drug Policy, 2009)

These critics bring an important point of view into the conversation about anti-drug campaigns. They remind researchers to constantly be examining and reexamining the effectiveness and economical efficiency of anti-drug ads.

In addition to these online organizations, several scholarly studies have been critical of the use of anti-drug PSAs (Cho & Boster, 2007; Cho & Boster, 2008; Hornik, 2006; Hornick, Jacobsen, Orwin, Piesse, & Kalton, 2008; Nack, 2008). In particular, Hornick, et al. (2008) found that “through June 2004, the campaign is unlikely to have had favorable effects on youths and may have had delayed unfavorable effects. The evaluation challenges the usefulness of the campaign” (p. 2229).

Several scholars have found that the PSAs tended to have a “boomerang effect” indicating that the ads are actually increasing the likelihood of the individual to try marijuana (Fishbein, Hall-Jamieson, Zimmer, Von Haeflen, Nabi, 2002; Hornik, 2006; Hornik et al. 2008; Yzer, Cappella, Fishbein, Hornik, & Ahern, 2003). The boomerang effects created by these ads are often attributed to the creation of a normative perception of marijuana use. According to Jacobsohn (2007):

Findings support the mediating role only of perceived descriptive norms, specifically perceptions of peer marijuana use prevalence, and the moderating role
only of interpersonal communication, specifically a youth's engagement in and valence of drug conversations with friends. Evidence of these relationships is compelling due to lagged results substantiating causal claims. Thus, socially oriented factors seem to account for the unintended effects more effectively than psychological or cognitive explanations. (p. 2)

While the loss frame messages are effective in altering many of the cognitive processes, it seems that the normative and social perspective might be able to more accurately explain the opposite behavioral effects of anti-drug campaigns.

In addition to the large body of communication research criticizing the anti-drug ad campaigns, governmental drug use statistics are not exactly congruent with the reports put out by the National Youth Anti-Drug Campaign. These conflicting findings come to a head in the recent report by Bob Dennison, director of the campaign in Washington, D.C. According to Dennison “marijuana use among teens has dropped 19 percent since the campaign's inception” (Schmuckler, 2006, p. SR3). However, further examination of government statistics does not support this statement. According to the National Center for Health Statistics (2010), marijuana use among high school seniors has increased from 18.8% in 2007 to 19.4% in 2008. These statistics do not support the research provided by the National Youth Anti-Drug Campaign as reported by Schmuckler (2006).

Additional government research indicates that anti-marijuana attitudes are decreasing. Findings reported by the Bureau of Justice (2009) indicate that a decreasing number of high school seniors think people are at great risk of harming themselves with marijuana use. A longitudinal study, sponsored by the National Institute for Drug abuse and conducted by the University of Michigan, indicate that when asked; “How much do you think people risk harming themselves by using marijuana?” A record low of 54% of high school seniors thought that people who use marijuana are at great risk of harming themselves (University of Michigan, 2007).

A recent congressional report has also found inconsistencies throughout the various studies measuring the campaigns effectiveness. On July 3, 2006 an official report to congress announced the re-authorization “of the National Youth Anti-Drug Media Campaign, a multi-media federal program to persuade America’s youth not to use drugs” (Eddy, 2006, p. 1). Congress agreed on a “House-passed appropriations bill that funds ONDCP…$100 million for the campaign for FY2007” (Eddy, 2006, p. 1). However, in the same report, Eddy (2006) also reveals that:
The media campaign’s effectiveness has been questioned, and the program has engendered its share of controversy. Nevertheless, ONDCP, the office of the “drug czar,” is optimistic that recent changes in campaign strategy will help to reduce illegal drug use by young people. (p. 1)

However, the large body of communication research criticizing anti-marijuana PSAs begs the question; how much of that decline is an effect of the Above the Influence anti-drug campaign? It is important that communication researchers attempt to resolve the inconsistencies that arise when comparing these research studies. Resolving these discrepancies may be integral in determining, not only how to frame anti-drug messages, it may also provide further insight into how to frame other health messages as well.

The varying results of prior studies have indicated that there are two leading persuasion theories vying for the minds PSA viewers; loss frame messages, or what will be referred to as, fear appeals and normative messaging. The next section will provide an overview of these persuasion theories in order to provide theoretical background for the inter-functionality apparent in anti-marijuana PSAs.

**Theoretical Background of Persuasive Appeals**

Various persuasive appeals have been utilized in anti-marijuana PSA’s; some being more successful than others.

**Fear Appeals**

According to Palmgreen et al. (2007), “analyses indicated that the initiative's dramatic depiction of negative consequences of marijuana use was principally responsible for its effects on high-sensation-seeking youths” (p. 1644). Fear appeals function by “describing the terrible consequences that may happen unless people do what the message recommends” (Witte, 1992). The fear appeal then attempts to persuade the individual into aligning with their requests.

Depictions of negative consequence (i.e. loss frame appeals) are one of the oldest types of persuasive appeals. The threat of some sort of loss as a certain consequence of a particular action has been used to persuade since biblical texts and is still being used in modern contexts as well. Interestingly fear appeals are at once one of the most familiar persuasive appeal and the most unpredictable. According to Cho and Witt (2004) the use of fear appeals is fraught with accounts of unsuccessful results and even adverse effects if used
incorrectly. This is important for communication scholars to understand. The use of these types of appeals can yield unpredictable results and may be tricky to measure or understand.

The effectiveness of fear appeals is defined by the perceived threat and the perceived efficacy (Witte, 1992, 1998; Witte, Meyer, & Martell, 2001). Perceived threat refers to whether or not the target actually perceives that they are in danger. Typically individuals appraise the severity of the threat, the credibility of the source it is coming from and the extent to which they are susceptible to it. Fear appeal researchers predict that the greater the perceived threat, the greater the individual's motivation to act will be (Mongeau, 1998). If the appeal fails to get the audience to perceive any threat, no action will be taken. In addition, the perceived susceptibility to the threat functions in a very similar fashion. If the individual feels that they are susceptible to the threat then they will in turn move toward action (Cho & Witt, 2004). Perceived efficacy refers to the extent to which the target perceives the recommended response as effective in dealing with the perceived threat. Once the individual has appraised the severity of the threat, and their own susceptibility to that threat, a second appraisal is done. While the perception of threat determines whether or not action will be taken, appraisals of the perceived efficacy determine what type of action. If the individual feels that they are able take a particular action that will effectively avert the threat and they have sufficient self-perceived efficacy, then they are more motivated to adopt the request of the fear appeal. This is also another important concept for anti-marijuana PSA scholars to consider when researching the use of fear appeals in anti-marijuana PSAs. Understanding how the appeal functions allows the researcher to understand how the respondent might react and the researcher may be able to explain and possibly predict the effectiveness of the appeal.

Research by Stiff and Boster (1987) has also revealed interesting findings regarding the effectiveness of fear appeals. The authors found that there was a positive linear relationship between amount of fear and fear appeal effectiveness. The results also indicate that strong fear appeals motivate individuals to engage in danger control actions and increase the likelihood of message acceptance. Low fear appeals tend to produce higher defense responses and participants were less likely to accept the fear messages. These findings are particularly helpful in researching anti-marijuana PSAs in that if the ads do not produce sufficient amounts of fear, their effectiveness will undoubtedly falter.
Research studies have shown that recent anti-drug PSAs have successfully implemented several fear appeals. Palmgreen et al. (2007) found that after viewing anti-drug PSAs containing fear appeals, subjects were less likely to use marijuana over a thirty-day period. In addition to Palmgreen’s study, several scholars have found that fear appeals are also effective in anti-smoking PSAs (Donovan, Freeman, Borland, & Boulder 1999; Tan, Wakefield, & Freeman, 2000). While it appears that fear appeals are useful in many anti-drug and anti-smoking health messages, several studies have found that fear appeals should be used cautiously and should not be relied on as a sole means of persuasion appeals in health messages (Janis 1967; Ruiter, Verplanken, Kok, & Werrij, 2003).

**Social Proof**

Several studies have found that anti-drug PSAs have actually had a “boomerang” effect when audiences are exposed to the ads (Fishbein et al., 2002; Hornik, 2006; Hornik et al. 2008; Yzer et al., 2003). The “boomerang” implies that instead of getting the desired response, or even no response at, many of the messages are creating attitudes and behaviors that are the opposite of what was intended. In this case, the boomerang has been said to cause a decrease in anti-marijuana attitudes and increase in marijuana use. Many scholars attribute the boomerang effect to the unintended normative appeals that are being found in several anti-marijuana PSAs (Fishbein et al., 2002; Hornik, 2006; Hornik et al., 2008; Yzer et al., 2003). The effect of normative appeals is explained by a principle called social proof. Social Proof is described by Cialdini (2007) as, “the tendency to see an action as more appropriate when others are doing it” (p. 116). Consequentially, as individuals begin to see marijuana use as more normative, they tend view it as being more appropriate and acceptable.

Social proof has its roots in evolutionary theory and describes that humans have maintained a herd-like mentality throughout evolution. Aronson (1980) describes that conformity with a larger group has historically been for purposes of safety. Still of great relevance to today’s society, the principle of social proof is often used in advertising campaigns, as it convinces the audience that a large population has a certain attitude and that the viewer should adopt this attitude (Cialdini, 2007).

Social proof appeals are powerful weapons of influence regarding anti-marijuana campaigns, since they activate deep biological triggers that allow humans to rationalize
decisions based on the group, and they can reduce uncertainty. Cialdini (2007) posited “when we are unsure of ourselves, when the situation is unclear or ambiguous, when uncertainty reigns, we are most likely to look to and accept the actions of others as correct” (p. 129). Essentially, when difficult decisions have to be made, it is often easier to assess the popularity of particular actions in order to evaluate their worth.

Compliance practitioners who are aware of the power of the social proof principle can take advantage of individuals fairly effectively. Seiter and Cody (2004) noted the ease in which consumers in particular can be manipulated into choosing specific, popular products. They noted “social proof sells merchandise by claiming that whatever is popular is good, so customers should buy what’s popular” (Seiter & Cody, 2004, p. 362). This understanding of social proof explains that, as a result of subconscious action patterns, individuals will do what is “popular.” This assumption is also held by this study. It seems that the target audience of the Above the Influence Campaign will do what is “popular.” Thus, if the ad campaigns continue to show that more and more people are using marijuana, the target audience’s reaction may actually boomerang, as a result of this accidental portrayal of marijuana’s popularity.

In addition to following the actions of other, individuals tend more to follow the actions of those they like, and who they believe are similar to themselves. Byrne (1971) explains that we like people who are similar to us. Several studies have found that humans have fixed action patterns that tend to be more easily persuaded by those whom they believe to have similar, opinions, physical characteristics, backgrounds and life styles (Brewer, 1979; Emswiller, Deaux, & Willits, 1971; Suedfeld, Bochner, & Matas, 1971; Tajfel, 1981).

Research by Andersen and Mancillas (1978) found that perceived or subjective similarity to public figures increases the effectiveness of their persuasive appeals. The researchers found that perceptions of similarity had a stronger influence on message effectiveness than did and objective or actual similarity. Andersen and Mancillas (1978) defined this concept as homophily and their findings have important implications in anti-marijuana PSA research. Since it is the perceptions of the receiver that have the strongest influence on the persuasive messages, understanding the degree to which individuals perceive the characters as similar to themselves in the anti-marijuana PSAs will be an integral part in understanding how the normative persuasive messages function.
While several of these scholars have explored the theoretical backgrounds behind the persuasive appeals behind anti-marijuana PSAs, many are just now beginning to understand how new media are effecting the communication of those messages. The accessibility to millions of viewers online has created a brand new way of delivering anti-marijuana PSAs. Anti-marijuana PSAs are spread throughout the Internet and audiences are viewing them in an entirely new manner. This could have resounding effects on the impacts of these persuasive appeals.

**Methodological Critique**

It seems that the previous generation of anti-marijuana PSA research studies have ignored the context in which most of these PSAs are being viewed by today’s youth. Young people are not seeing these ads on television as they did in the past. Instead, online video clips on websites like youtube.com and hulu.com are containing shorter PSAs that the viewer watches before watching their desired clips a more natural experience for the participants.

Two research designs have dominated the status quo for measuring the effectiveness of anti-drug PSAs. The first design sends out mass surveys and assesses the relationship between levels of prior exposure and then tries to explain patterns of marijuana use (Hornik, 2006; Palmgreen et al., 2007). Because types these studies utilize non-experimental survey methods, they have been very successful in obtaining large sample sizes. In addition they are able to measure participants in more natural settings. However, they can be criticized for their inability to control for certain variables, such as level of exposure environmental factors.

In comparison, several studies have utilized experimental methods by controlling the levels of exposure in lab settings (Cho & Boster, 2007, 2008; Fishbein et al., 2002). By utilizing more experimental-like methods, researchers can more accurately measure the direct effects of viewing the ads. However, this is not to say that the experimental studies utilizing post-test methods are not without criticism. While experimental methods can more accurately root out and control for moderating variables, they can be criticized for the amount of time and effort required to obtain large enough sample sizes to find significant results. In addition, these studies have required that participants go to a lab setting instead of being able to view the ads in a more natural setting. The methodological approach utilized in this study, aims to
harmonize the two leading research methods and to place subjects in a natural setting whilst maintaining the integrity of a lab study.

**Hypotheses**

Research has shown that anti-drug PSAs are effective in applying short-term fear appeal messages, and the attitudes of the individuals reflect a loss frame perspective on marijuana use. However, a large body of research has also show that exposure to the ads results in a perception of marijuana as more normative. Several studies have shown that the biggest flaw in anti-drug commercials is that they make the audience feel as though everyone is doing drugs. This unintended boomerang effect will result in increased perceived popularity of marijuana due to the principle of social proof.

H1: Increased exposure to “Above the Influence” PSAs will be positively associated with perceptions of risk of harmful effects from marijuana use.

H2: Increased exposure to the ads will result in marijuana use being perceived as more normative.

H3: Increased perceived normativeness of marijuana will be negatively associated anti-marijuana attitudes.

The relationship between exposure and the perceived normativeness of marijuana use may be modified by a third variable. The principle of social proof predicts that; individuals will tend to have a more positive attitude toward marijuana if they believe more people are doing it (Cialdini, 2007). This indicates that perceived similarity should act as a modifier variable, on the relationship between exposure and perceived normativeness. More specifically:

H4: Perceived similarity will amplify the positive effects of exposure on the perceived normativeness of marijuana use.

Finally, research tends to indicate that viewing anti-drug PSAs has actually had a boomerang effect in recent years. One possible explanation for this is that while the loss frame messages appear effective, the source credibility of the message is diminished through unrealistic portrayals of negative consequences, and the audience is left to principles of social proof to determine their attitude toward marijuana. Therefore;

H5: Increased exposure to the “Above the Influence” ad campaign will be negatively associated with anti-marijuana attitude levels.
CHAPTER 2

METHODS

This study employs an experimental field approach in understanding the persuasive communication functions of the “Above the Influence” PSAs. Participants are exposed to varying levels of anti-drug messages embedded in online video clips and then asked to answer survey items regarding their attitudes toward marijuana use (See Appendix A). This methodological approach more effectively mimics the “typical” environment in which most adolescents view the ads. In addition the research design of this study also provides a method for assuring that the viewers are encountering the videos without forcing them to enter a controlled lab environment.

PARTICIPANTS

Survey participants were recruited from various undergraduate classes at San Diego State as well as many friends and colleagues at other universities across the country. Of the 200 total participants; 52% were female, 48% were male, 90% of the subjects were students at San Diego State and the average age was 19.1 years old. There were not any specific requirements that individuals needed to meet in order to take the survey. Participants’ prior exposure to the ads will not limit their ability to participate.

PROCEDURES

Survey participants are recruited from various undergraduate classes at San Diego State University as well as many friends and colleagues at other universities across the country. The survey links were sent via email to professors, teaching assistants, and students at San Diego State University as well as colleges in northern California, Nevada, and Iowa. There were no specific requirements that individuals needed to meet in order to take the survey. Participants’ prior exposure to the ads did not limit their ability to participate.

Participants were randomly selected to view one of four series of video clips online. The first series of clips (Series A) showed a short sitcom (6 min), with three benign ads that do not contain any anti-drug messages. The second series (Series B) showed a short sitcom
with two benign ads and one anti-drug PSA. The third series (Series C) showed a short sitcom with only one benign ad and two anti-drug ads. The fourth series (Series D) showed a short sitcom, with no benign ads and three anti-drug PSAs (See Table 1. in Appendix B). The three benign ads Sonic, Snickers, and Tide, and contain no drug-related messages. The three anti-drug ads were entitled; “Achievements”, “Hurt”, and “Fitting In” (see Appendix C for PSA transcripts). The ads were chosen because they were the most recent ads being run by the Above the Influence campaign at the time, and provide the most up to date portrayal of the aims of the campaign.

After viewing the series of clips, participants were asked to respond to a survey containing items regarding their attitudes toward marijuana use. These responses were used to determine the effect viewing these ads had an effect on the participants.

**Materials**

This study utilizes a variety of survey items in order to measure advertising effectiveness (See Appendix A for entire list of survey items). All items were geared toward measuring specific persuasive appeals. An exhaustive examination of advertising effectiveness research measures provided several items that accurately measured each ad’s persuasive strategies.

The clips were downloaded from the above the influence website and youtube.com. The clips were then put together on Microsoft Movie Maker software. The videos clips were then made available on youtube.com. In order to provide access to these videos, an account was created on youtube.com. This account hosted all of the video clips.

The survey that was utilized consisted of items that were specifically developed for this study. Whereas, other scales that have attempted to measure very similar variables, the unique circumstance in which this study was developed demanded the development of brand new scales.

**Variables**

The final component matrix consisted of 23 items (See Appendix A). All 4 test-groups responded to the same 23 items adapted from operationalizations of each variable. The 23 items were used to measure 4 composite variables: perceived risk of harmful effects of marijuana use (PRHE), perceived normativeness of marijuana use (PNMU), perceived
background and cultural similarity to characters in anti-marijuana public service announcements, and anti-marijuana attitude (AMA). The scales and reliability analysis are described below.

**Exposure to Anti-Marijuana Public Service Announcements (Exposure)**

Exposure to the anti-marijuana public service announcements was controlled by the inclusion of 0-3 anti-marijuana PSAs in each 6-minute clip viewed by the subject prior to taking the survey across the four conditions. In video clips where the PSAs were present, they were embedded along side benign advertisements. Participants were not asked how often they had seen the PSAs in the past and the exposure variable only explained the short-term immediate effects of viewing the ads.

**Perceived Risk of Harmful Effects of Marijuana Use Scale (PRHE)**

Fear appeals are the most clear and evident persuasive messages in most anti-marijuana PSAs. Anti-marijuana PSAs often warn that marijuana will; cause loss of friends and family, cause you to lose your identity, harm your ability to perform in sports, cause brain damage, and may even cause death. In contrast to previous campaigns, these fear appeals appear aimed at creating an emotional fear response as well as a direct logical response. Jorgensen (1998) explained that these two types of appeals often work together, rather than in opposition, in creating attitude change. In this study, Hypothesis 1 predicted that increasing exposure to these fear appeals messages will cause an increase in the perceived risk of harmful effects of marijuana use. Whereas Palmgreen et al. (2007) found that after viewing anti-drug PSAs containing fear appeals, subjects were less likely to use marijuana over a thirty day period, studies have yet to explore whether or not the respondents will explicitly indicate that they perceived more risk when exposed to the PSAs. So one key outcome variable in the present study was perceived risk of marijuana.

Factor analysis indicated that six items loaded heavily (>0.60) on the perceived risk of harmful effects of marijuana use (PRHE) factor; “Marijuana makes you do stupid things” (.70), “Marijuana hurts people’s coordination” (.62), “How much do you think people risk harming themselves by smoking marijuana?” (.71), “How much do you think people risk
harming members of their family by smoking marijuana” (.71), “How much do you think people risk harming their lungs by smoking marijuana?” (.75), and “How much do you think people risk using “harder” drugs because they smoked marijuana?” (.74) (See Table 2. in Appendix B). Reliability analysis indicated that the resulting PRHE scale was considered statistically reliable ($\alpha = .88$).

**Perceived Normativeness of Marijuana Use Scale (PNMU)**

Normativeness was the term utilized in this study to operationalize the principle of social proof as another key outcome variable. Cialdini (2007) describes that social proof is deeply rooted in our genetic engineering, such that people will mimic the behavior of those around them. The items in the survey aiming to measure PNMU asked how strongly the subject agreed with the following statements; it is normal for my peers to use marijuana, It is normal for my family members to use marijuana, and it is normal for my friends to use marijuana. Whether or not these people were actually using marijuana was less important, and the subjects’ perception of their marijuana use was much more important. Exposure to anti-drug PSAs where the characters in the ads are using marijuana may impact subjects in such a way that they begin to believe that more people around them are using marijuana than they had previously perceived. This may cause them to perceive marijuana use as more “normal.” In addition, perceptions of the group’s behaviors are most relevant in making decisions according to social proof (Cialdini, 2007), and this may indicate a connection between perceived normativeness and decreased anti-marijuana attitudes.

Factor analysis indicated four items from the survey loaded heavily (> .60) on the normativeness factor; “It is normal for my friends to use marijuana” (.84), “It is normal for my peers to use marijuana” (.80), “I think it is unusual for my friends to use marijuana” (.77), and “My friends would approve if I used marijuana” which was flipped prior to computation (.72) (See Table 2. in Appendix B). Reliability analysis indicated that the removal of the item; “My friends would approve if I used ” created a more statistically reliable scale. The resulting scale was considered reliable ($\alpha = .81 \rightarrow \alpha = .85$).
Perceived Background and Cultural Similarity to Characters in Anti-Marijuana Public Service Announcements (Perceived Similarity)

Integral to the understanding of the use of social proof as a persuasive technique is the principle of perceived similarity. As previously mentioned, several studies have shown that humans have fixed action patterns that tend to be more easily persuaded by those whom they believe to have similar, opinions, physical characteristics, backgrounds and life styles (Brewer, 1979; Emswiller et al., 1971; Suedfeld et al., 1971; Tajfel, 1981). In order to understand perceived similarity’s effect on social proof or normativeness, the “perceived Similarity” variable was developed. The use of this variable may help explain the possible boomerang effects of the unintentional normative messages that several scholars have argued exist in many anti-marijuana PSAs. It is possible that the viewers may see themselves as being similar to the characters in the PSAs and in response will be more easily persuaded by the normative messages.

The post-viewing survey developed for this study contained five items that aimed to measure the subjects’ perceived similarity to characters’ beliefs, values, social class, culture, and background in anti-marijuana PSAs. However, after factor analysis, it was discovered that the subjects indicated that perceived similarity should be classified into two separate factors: Perceive Cultural/Background Similarity and Perceived Value/Belief/Class Similarity. Interestingly, these two dimensions are very similar to what Andersen and Mancillas (1978) found for the dimensionality of homophily.

The Factor analysis indicated that two items loaded heavily (> .60) on the Perceived Cultural/Background factor; “The characters in anti-drug ads share the same background as me” (.91) and “The characters in anti-drug ads share the same culture as me” (.92) (See Table 2. in Appendix B).

The Perceived Value/Belief/Class similarity factor also included two items that loaded heavily (> .60); “The characters in anti-drug ads have different values than I do” (.72) and “The characters in the anti-drug ads come from a different social class than I do” (.76) (See Table 2. in Appendix B).

Reliability analysis indicated that the Perceived Cultural/Background Similarity scale was statistically reliable (α = .88), but the Perceived Value/Belief/Class Similarity scale was
not (α = .51). Therefore, for the purpose of this study, only the Perceived Cultural/Background Similarity Scale was utilized.

**Anti-Marijuana Attitude Scale (AMA)**

Anti-marijuana PSAs aim to create anti-marijuana attitudes amongst the viewer. However, due to unintentional normative effects, it is predicted that overall anti-marijuana attitudes will actually decrease after viewing the anti-marijuana PSAs, this is known as the boomerang effect (Fishbein et al., 2002; Hornik, 2006; Hornik, 2008; Yzer et al., 2003).

Factor analysis indicated that four items loaded heavily (> .60) on the Anti-Marijuana Attitude factor; “Marijuana is… Extremely bad - Extremely good” (.62), “Marijuana is the least harmful drug” (.84), “Recreational marijuana helps people to relax” (.77), and “I can see the benefits of marijuana” (.799) (See Table 2. in Appendix B). Reliability analysis indicated that the resulting scale was considered reliable (α = .87).

It should also be noted that this scale could also be called the pro-marijuana scale because of the inclusion of various items that ask about the benefits of marijuana, however for the purposes of this study and testing Hypothesis 5, “pro-marijuana” items were reverse coded to indicate “anti-marijuana” attitude items.

**Statistical Analysis**

Once the surveys were completed, the responses were edge coded and uploaded into statistical analysis software, SPSS. The following items were reverse coded; “I think that it is weird that people use marijuana,” It is unusual for my friends to use marijuana,” “Marijuana is one of the least harmful drugs,” “Marijuana is not addictive,” “People in the anti-marijuana ads have different values than I have” “People in the marijuana ads come from a different social class than me.” All items were factor analyzed to determine existing scales and scales were analyzed for reliability. Finally, a one-way ANOVA test was utilized in order to determine if there were ideal levels of exposure that would significantly increase the exposure effects. (See Table 3. in Appendix B).

**Factor Analysis**

A factor analysis utilizing Verimax Rotation indicated 5 distinctive factors. Factors were labeled: Perceived Risk of Harmful Effects of Marijuana Use, Perceived Normativeness...
of Marijuana Use Scale, Anti-Marijuana Attitude Scale (AMA), Perceived Background/Cultural (Perceived Similarity), and Perceived Belief/Value/Class Similarity (See Table 2. in Appendix B).

RELIABILITY ANALYSIS

A reliability analysis indicated that four out of the five scales extracted from the factors were statistically reliable ($\alpha \geq .70$): PRHE ($\alpha = .88$), PNMU ($\alpha = .81$), Perceived Similarity ($\alpha = .88$), AMA ($\alpha = .87$). The reliability of the PNMU Scale was improved by removing the item “My friends would approve if I used marijuana” ($\alpha = .81 \rightarrow \alpha = .85$). The Perceived Belief, Value, and Class Similarity scale was not considered statistically reliable ($\alpha = .51$), resulting in the scale being dismissed from this study.

ONE WAY ANOVA

In order to determine if there were any non-linear associations between exposure and the dependant variables, a one-way ANOVA test was utilized. The test aimed to expose any possible levels of exposure that may have been significantly influential on the attitudes of the participants.

CORRELATION ANALYSES

Four sets of correlation coefficients were employed to test all five of the Hypotheses. Each analysis utilized One-tailed correlations and displayed missing data list wise. Relationships between the variables were considered statistically significant at the $<.05$ level. The first correlation analysis (zero-order) was conducted on the variables: exposure, PRHE, PNMU, perceived similarity, and AMA. The correlation analysis aimed to determine whether or not there were any linear relationships between the variables.

After computing the exposed/non-exposed variable a second correlation analysis (Zero-Order) was conducted on the variables: exposed/non-exposed, PRHE, PNMU, and AMA. This second correlation analysis aimed to determine whether or not being exposed, regardless of the level of exposure had any relationship with scores on the dependant variable scales.

Finally, a fourth correlation analysis (partial) was conducted on exposure and PNMU, controlling for perceived similarity. The results of this correlation analysis were compared to
those of the previous correlation tables to determine the modifying effects of the perceived similarity variable. An increase in the Pearson correlation coefficient from the partial (controlled) analysis to the zero-order (non-controlled) analysis would indicate that the inclusion of the modifying effects of the perceived similarity variable amplified the positive effects of exposure on PNMU.
 CHAPTER 3

 RESULTS

 Hypothesis 1, which predicted that increased exposure to “Above the Influence” PSAs would be positively associated with perceptions of risk of harmful effects from marijuana use, was not confirmed. Results of the correlation indicated that there was a very slight positive relationship between exposure to anti-marijuana PSAs and perceived risk of harmful effects of marijuana use (PRHE) (r = .04, p = .27; n = 198) but it was not statistically significant. As a result Hypothesis 1 is not supported (See Table 4. in Appendix B).

 A second correlation was computed in order to test the first hypothesis by examining the relationship between the categorical variable exposed/non-exposed and PRHE. As in the previous analysis the results indicated only a very slight positive relationship between exposed/non-exposed and PRHE (r = .10, p = .09; n = 198) but it was non-significant. Again, Hypothesis 1 was not supported (See Table 5. in Appendix B).

 Hypothesis 2, which posited that increased exposure to “Above the Influence” PSAs would result in marijuana use being perceived as more normative was not supported. Results from the correlation analysis indicated that there was a slight negative relationship between exposure and perceived normativeness of marijuana use (r = -.08, p = .15; n = 198) that was not statistically significant. Hypothesis 2 not supported (See Table 4. in Appendix B).

 In order to provide another test of hypothesis 2 the association between Exposed/Non-exposed and PNMU, a second correlation was computed. The results indicated that there was a slight negative relationship between exposed/non-exposed levels of exposure and PNMU (r = -.10, p = .09, n = 198). Hypothesis 2 was not supported (See Table 5. in Appendix B).

 Hypothesis 3, which posited that increased perceived normativeness of marijuana use would be negatively associated anti-marijuana attitudes, was supported. Results from the correlation analysis indicated that there was a strong, significant negative association between PNMU and AMA (r = -.49, p < .01, n = 198). Hypothesis 3 was confirmed by the results (See Table 4. in Appendix B).
Hypothesis 4 posited that Perceived Similarity would amplify the positive effects of exposure on perceived normativeness of marijuana use. Analysis of the zero-order and partial correlation results indicated that there was little to no change in the correlation between exposure and PNMU by controlling for perceived similarity. The results from the partial correlation analysis indicated only an extremely slight increase in the power of the relationship in the negative direction ($r = -0.09$, $p = 0.13$; $n = 198$) from the Zero-Order analysis ($r = -0.08$, $p = 0.11$; $n = 198$). Hypothesis 4 was not supported by the results (See Table 6 in Appendix B).

Hypothesis 5 posited that increased exposure to the “Above the Influence” PSAs would be negatively associated with anti-marijuana attitude levels. Results from the correlation analysis indicated no relationship between exposure and AMA ($r = -0.01$, $p = 0.44$; $n = 198$). Hypothesis 5 was not supported by the correlation analysis (See Table 4. in Appendix B).

A second correlation analysis was conducted to test for a relationship between the categorical variable Exposed/Non-exposed and AMA. The results indicated no significant relationship ($r = 0.02$, $p = 0.40$; $n = 198$) (See Table 5. in Appendix B).

Finally, results from the one-way ANOVA tests indicated that there were no statistically significant differences in the mean PRHE $F(3, 196)=1.14$, $p=.33$; PNMU $F(3, 198)=1.10$, $p = .35$; AMA $F(3, 195)=1.06$, $p=.37$; in relation to exposure. These findings revealed that there were not any non-linear associations between exposure and the dependant variables, indicating that there were not “ideal” levels of exposure for maximizing the effects of exposure (See Table 3. in Appendix B).
CHAPTER 4

DISCUSSION

SUMMARY OF FINDINGS

This study produced interesting and unexpected results. The results indicated that increased short-term exposure to anti-marijuana PSAs has very little effect on viewers’ immediate attitudes toward marijuana use, its harms, or its normativeness. It was also found that increased exposure did not have a significant impact perceived risk of harmful effects nor perceived normativeness of marijuana use.

The results from these analyses did not confirm any of the Hypotheses regarding exposure. Hypothesis 1 which posited that increased exposure to “Above the Influence” PSAs would be positively associated with perceptions of risk of harmful effects from marijuana use was not supported. Perhaps a more carefully designed study aimed at finding ideal levels of exposure would find that the fear appeal based PSAs would yield statistically significant correlations between PRHE and exposure. Such findings would be more aligned with prior research on fear appeal based anti-marijuana PSA research (Donovan et al., 1999; Palmgreen et. al., 2007; Schmuckler, 2006; Tan et al., 2000).

Similarly, hypothesis 2, which posited that increased exposure to the ads would result in marijuana use being perceived as more normative was also not supported. Based on these findings it is likely that the short-term exposure to anti-marijuana PSAs has no immediate effect on perceived normativeness of marijuana use. As with Hypothesis 1, a second correlation analysis attempted to determine whether or not being exposed at all had an effect on PNMU. The results were again in the opposite direction as the hypothesis. However the results were again not statistically significant meaning that Hypothesis 2 was not supported.

Additionally Hypothesis 5, which predicted that increased exposure to the “Above the Influence” ad campaign would be negatively associated with anti-marijuana attitude levels, was also not supported. The direction of the results was in support of the hypothesis, but the relationship was extremely weak and was far from statistically significant. It appears that increasing exposure to anti-marijuana PSAs has little to no effect on anti-marijuana attitudes.
Even when broken into a categorical variable, the relationship was not statistically significant. The findings do not help solve the paradox that has occurred between those who believe the PSAs are effective (Longshore et al., 2006; Palmgreen et al., 2007), and those who support the boomerang effect theory (Fishbein et al., 2002; Hornik, 2006; Hornik et al., 2008; Yzer et al., 2003).

Only one hypothesis was confirmed. Hypothesis 3, which posited a negative association between perceived normativeness of marijuana use and anti-marijuana attitudes was confirmed. The results showed a very strong and statistically significant negative relationship between the PNMU scale and the AMA scale. The findings compliment the principle of social proof and indicate that individuals who believe that marijuana use is a normal behavior for their peers, friends and family are much more much less likely to have an anti-marijuana attitude. While this seems like a simple conclusion, it is a significant finding for anti-marijuana PSAs researchers. Several prior studies have also found similar results (Fishbein et al, 2002; Hornik, 2006; Hornik et al., 2008; Yzer et al., 2003).

Finally, hypothesis 4 which posited that perceived similarity would amplify the positive effects of exposure on perceived normativeness of marijuana use was also disconfirmed. The results showed that controlling for perceived similarity did not have the desired negative effect on the power of the relationship between perceived normativeness and anti-marijuana attitudes. There was little to no change in the statistical strength of the relationship meaning perceived similarity had little to no impact on the effect exposure had on PNMU. However it should be noted that exposure was not shown to have a statistically significant relationship in either case. A large body of research has shown that perceived similarity is positive related to perceived normativeness (Brewer, 1979; Cialdini, 2007; Emswiler et al., 1971; Suedfeld et al., 1971; Tajfel, 1981), and the results of this study should not be considered contradictory to this research. Instead it is more likely that the relationship between exposure and PNMU was much too weak to notice any modifying effects that perceived similarity may have had. Instead the results should be considered inconclusive and additional research should be conducted to explore how the perceived similarity of the characters in the PSAs impacts persuasive messages in anti-marijuana PSAs.

These nonsignificant findings were probably not due to low statistical power since the study has a .8 probability of detecting a small correlation (r < .20). Moreover hypothesis 3
was confirmed suggesting the nonsignificant findings were due to methodological or theoretical issues.

**THEORETICAL IMPLICATIONS**

This study did not produce substantial new major findings. Most of the results indicated that the relationships being tested were not statistically significant and that anti-marijuana ads had little effect. Unfortunately, the results were unable to reconcile any of the confounding paradoxes and contradictions that surround research regarding the effects of anti-marijuana PSAs.

In particular, this study was unable to solve the paradox surrounding the effectiveness of fear appeals in anti-marijuana PSAs. Results based on this new methodology showed that increased exposure did not significantly increase the perceived risk of harmful effects of marijuana. While the relationship was not considered statistically significant, the arguments made by researchers such as Palmgreen et al. (2007) who have argued that fear appeals are effective in anti-marijuana PSAs, are neither confirmed nor disconfirmed by this study. The results indicate that fear appeals must be used carefully and as Ruiter et al. (2003) warns; fear appeals should be used cautiously and not be relied on as a sole means of persuasion in health messages.

This study also explored the concept of ideal levels of exposure and their impact on fear appeals. It was clear that some exposure to the PSAs was more effective than none, but it is possible that there is an ideal level of exposure that avoids any inhibiting effects of under/over exposure. Several studies warn about the effects of over exposing a subject to a message. Often the power of fear appeals gradually decreases after a certain level indicating immunization due to over exposure to the fear appeal.

Although Hypothesis 2 was disconfirmed, results only indicated that increased exposure to the three particular anti-marijuana PSAs presented this study was not positively associated with PNMU. It is possible that other anti-marijuana PSAs do contain normative messages and since normativeness is so strongly negatively correlated to ANA, as indicated by the confirmation of hypothesis 3, any messages that unintentionally increase PNMU have the possibility of creating a “boomerang” effect.
The most conclusive finding that was produced was that perceived normativeness of marijuana use was negatively associated with anti-marijuana attitudes. This means that, individuals who tended to see marijuana as more normal and acceptable also tended to have a more positive attitude toward marijuana use. This may seem like a very simple conclusion, but the theoretical and practical implications are very important. As many scholars have found, anti-marijuana PSAs tend to have a boomerang effect, and many scholars attribute that boomerang effect to unintended normative appeals that are found in several anti-marijuana PSAs (Fishbein et al., 2002; Hornik, 2006; Hornik et al., 2008; Yzer et al., 2003). In part, the results from this study support these findings by reiterating the concept of normativeness as a strong associate of marijuana attitude valance. The results from this study did not produce any statistically significant evidence of normative messages appearing in the three particular PSAs that were selected, however, results that show PNMU being significantly correlated to pro-marijuana attitudes does serve to implore feature research on other anti-marijuana PSAs.

The confirmation of hypothesis 3 also supports Cialdini’s concept of social proof. Social proof is a rudimentary trigger inherent in all humans, and describes that have maintained this trait throughout evolution (Aronson, 1980; Cialdini, 2007). When advertisers wield the weapon of social proof they attempt to convince their viewers that a millions of people just like you are buying a certain product, maintaining a certain belief, wearing certain clothes, etc… What the confirmation of hypothesis 3 indicates is that as people begin to perceive marijuana as more normal and used by more and more people, they tend to also think that marijuana is good, not harmful, and may be more likely to use it (Hornick et al., 2008, Jacobsohn, 2007).

Unfortunately, this study was not able to predict the overall attitudinal effects of differing level of exposure to the PSAs. While there were slight differences in the anti-marijuana scores on each of the levels, none of the findings were statistically significant. While not quite the “boomerang effect” that was hoped to be found in this study, the results supported the many scholars who are critical of the campaigns claims of effectiveness in creating a more anti-marijuana consensus (Cho & Boster, 2007, 2008; Hornik, 2006; Hornick et al., 2008; Nack, 2008).
LIMITATIONS

Several limitations were discovered during this study. This section will elaborate on these limitations.

Participants

The first limitation of this study was the sample size. The study only obtained responses from 200 subjects. While this is enough to develop meaningful conclusions and did have the power to detect relatively small effects, future studies should be sure to obtain many more subjects. The small sample size and power may explain the numerous relationships that were just shy of being statistically significant, though these relationships would have shown only very small effects even if they were statistically significant.

In addition to the sample size being limited, the demographic was also limited. Most of the subjects were students at San Diego State University (90%) and the sample may not have represented views of the entire nation. The Above the Influence Campaign targets youths throughout the country and future studies should be sure to obtain samples from many locations.

Also, the sample was made up of mostly freshmen in college, the majority of which were 18-19 years old. The average age of the subjects was 19.1 years old and while the Above the Influence Campaign does target this demographic, the average subject was on the upper end of their target demographic. Future studies should obtain participants from ages 13-21 years old and determine how age affects the results.

Finally, the participant’s prior attitudes toward marijuana were not measured. It may have been possible that many of the subjects had strong opinions about marijuana before viewing the ads. Future studies should be carefully designed with ways to control for individuals with strong opinions. It may have been possible that the ads were effective in changing the minds of subjects who were on the fence about marijuana use, but this study did not measure prior attitudes, so there is no way to tell.

Controlled Environment

While this study carefully examined and critiqued the methodological approaches taken by prior research, it became very clear why those approaches had been taken. Purely Survey methodological approaches are very convenient and yield a large sample size and
controlled lab experiments easily control the exposure levels and can ensure that the subjects are viewing the entirety of the PSAs. While the methodological approach of this study was, ambitious in its creation of a more authentic viewing experience, the execution of the desired conditions was hard to control. There was no way of ensuring that the respondents viewed the entire video clips. In addition the surveys involved a certain level of time commitment because of the length of the video. This is not to say that the methodological approach was theoretically or pragmatically unsound. There are definitely ways to ensure that the viewers are sitting through the entire video clip before they are allowed to answer, and with extra effort the survey could be sent out to a much larger sample size. Future studies should utilize more advanced survey software that has built in video capabilities and has the ability to ensure that the subjects have viewed the entire video before beginning to answer the items.

**Benign Ads/Video**

Another limitation of this study came from the lack of analysis on the benign ads and the video clip itself. There were no attempts to control for any possible persuasive messages that may have existed in the benign ads and the video clip. Future research should utilize a pre-test that ensures that the benign ads are in fact benign and that the video in which the PSAs are embedded do not include any marijuana or drug related persuasive messages. In addition, post-viewing survey items should be included to test for any modifying effects.

**Prior Exposure to PSAs**

Finally, the level of prior exposure to anti-marijuana PSAs was not controlled for in this study. This study focused on the immediate effects of exposure to the anti-marijuana PSAs but did not sufficiently address the impact of prior exposure. It is possible that levels of prior exposure may have effects that were not revealed in this study. Especially in the digital age many youth may be experiencing information overload. With the thousands of advertisers all vying for peoples’ attention, every day the effects of prior exposure likely impacted study results. Also, these effects may be able to explain the discrepancies with prior research. Future studies should attempt to control prior exposure to ensure that results are not modified by this variable.
FUTURE RESEARCH

Though this study had interesting findings, there is still more to be discovered regarding anti-marijuana PSA’s.

Desensitization and Finding Ideal Levels of Exposure

One interesting avenue for future research regarding the effects of anti-marijuana PSAs is to posit non-linear correlations between exposure and the effects. This study found slightly stronger correlations when comparing ideal levels of exposure to under/over exposure. While they were still not indicative of statistically significant conclusions, the increased strength of these relationships should be explored by future research. One possible explanation for the occurrence of non-linear relationships comes from a concept known as systematic desensitization. Systemic desensitization is described by Carnagy, Anderson, and Bushman (2007) as, “a set of procedures designed to reduce unwanted negative emotional reactions to stimuli that initially produce fear or anxiety” (p. 490). In their study the authors extended the idea of desensitization to the violence that appears in video games explaining that “playing a violent video game, even for just 20 min, can cause people to become less physiologically aroused by real violence” (p. 494).

The same concept may be able to explain why the correlation between exposure and perceived risk of harmful effects in this study was non-linear. Subjects who were exposed to all three PSAs did not exhibit effects as strongly correlated as those who were exposed to only one PSAs; indicating that subjects may be undergoing an unintentional systemic desensitization. Health communication and persuasion scholars should pay particular attention to findings of these future studies as they could important implications for understanding how individuals react to persuasive messages, particularly loss frame messages (Cho & Witt, 2004; Donovan et al., 1999; Harrington et al., 2003; Lane et al., 2003; Ruiter et al., 2003; Stephenson & Palmgreen, 2001). If scholars can determine the point at which systematic desensitization generally begins to occur they may be able to further explain the reported ineffectiveness of the anti-marijuana PSAs.

Long Term Exposure

This study utilized only three particular “Above the Influence” anti-marijuana PSAs. Subjects were only asked to express their immediate thoughts and attitude toward marijuana
use, gathering data on only the short-term effects of exposure to the ads. Future research should examine additional “Above the Influence” anti-marijuana PSAs and the long-term effects that may occur due to repeated exposure to the PSAs.

A significant body of research has attempted to understand how long term exposure (2-3 years) to the anti-marijuana PSAs might affect the attitudes of youths who are viewing them. While much more difficult, carefully crafted longitudinal studies can control for the many mediating factors that undoubtedly impact individuals’ attitudes and provide a clearer picture of how these anti-marijuana PSAs act in the real world. One particular body of research has put a great deal of effort into to understand the effects of “sensation seeking” characteristics and their impact on the effects of these PSAs (Hersh, Barret, Capella, Appleyard, & Fishbein, 2004; Lane et al., 2003; Stephenson et al., 2002; Stephenson & Palmgreen, 1999, 2001). Unintentional normative messages may run rampant when long-term exposure is coupled with external environmental factors, such as peers, family, personal experience, etc… (Fishbein et al., 2002; Hornik, 2006; Hornik et al, 2008, Jacobsohn, 2007; Yzer et al., 2003) Future studies should be carefully crafted to explore these external factors and how long term exposure acts in congruence with them.

**CONCLUSION**

The purpose of this study was to further the understanding of the effects of the controversial “Above the Influence Campaign.” In particular this study aimed to examine the effects of fear appeals and unintentional normative persuasive messages that many researchers have claimed were apparent in many of the Above the Influence Campaign’s anti-marijuana PSAs. Subjects exposed to varying levels of exposure indicated their attitudes about marijuana. This study aimed to determine if there were any correlations between exposure and evidence of these persuasive messages. In addition, the study examined the relationship of these persuasive messages to mediating factors such as perceived similarity to the characters in the PSAs. Finally, an overall assessment of marijuana attitude valence was taken and compared to perceived normativeness of marijuana use.

Unfortunately, this study was unable to reconcile the many contradictions, paradoxes, and quandaries that surround research into the effectiveness of these ads. Many of the results were inconclusive and correlation hypothesis were not supported. It appeared that the short
term exposure to these anti-marijuana ads resulted in little evidence of effect fear appeal messages, nor was there any evidence of effective normative appeals in the PSAs. The Ads themselves appeared to be benign. This finding only serves to confound researchers as to why the campaign continues to receive so much governmental support. The lack of any apparent boomerang effects was disappointing, but definitely serves to implore for future research.

Finally, one conclusion was drawn that supported the current body of social proof and normative persuasive theories. It was discovered that as marijuana use appeared more normal among the subjects’ friends, family, and peers the more the subjects tended to hold more positive marijuana attitudes. Individuals who indicated that it was unusual or strange for their friends, family, and peers to use marijuana tended to more anti-marijuana attitudes. These findings indicate that as more and more people begin to see marijuana as an every day normal part of our society, the more accepting and pro-marijuana use they are likely to become. While, subjects exposed to the particular ads present in this study did not indicate any evidence of effective normative appeals, other ads may contain effective unintentional normative appeal that could cause unintentional pro-marijuana outcomes.

Regardless of any personal feelings toward the morality of marijuana use, American citizens should be frustrated by millions of tax dollars being spent on ad campaigns that are poorly researched, essentially ineffective, and even possibly counter effective. With the millions of dollars being pumped into the Above the Influence Campaign, governmental researchers should be continuously examining the PSAs to ensure that the efforts being made to “scare” youths away from drugs are not being thwarted by unintentional normative messages. Instead, it appears that the Drug Policy Commission has ignored the warnings of researchers and continued to increase spending on a failing campaign. With the introduction of proposition 19 to “control & tax” cannabis in California, the perceived normativeness of marijuana use may have reached new levels. While the proposition was defeated in the election, the fact that 46% voted yes for the proposition indicates that marijuana is being accepted at levels not previously experienced. As this debate will continue to resurface in politics, education, and in a variety of other aspects of American society; determining the effects of anti-marijuana PSAs will continue to be a very important field of research.
REFERENCES


APPENDIX A

CONSENT FORM AND THESIS SURVEY
CONSENT FORM

You are being asked to participate in a research study. Before you give your consent to be a volunteer, it is important that you read the following information and ask as many questions as necessary to be sure you understand what you will be asked to do.

Investigators: Justin F. Fortier, Principal Investigator, San Diego State University Peter Andersen, Ph.D., Principal Investigator, San Diego State University

Purpose of the Study: This study seeks to examine the effect online videos have on anti-drug attitudes. To participate in the study, you must be 18 years of age.

Description of Study: If you choose to participate in the study, we will ask you a few questions related to your attitude regarding a short (5-10 min) video clip and its effect on your thoughts toward marijuana use.

Risks and Discomforts: You may experience some slight psychological discomfort due to the nature of the questions. To minimize this potential discomfort, please remember that your answers are completely anonymous. We have no way of linking you with your answers. We are not asking for your identity or any other identifying information. You may refuse to answer any question and you may end your participation in the study at any time. All information collected will be reported in aggregate form; no individual responses will be reported.

Benefits of the Study: We hope the data collected during this study will be used to help reduce the negative effects many online videos have on marijuana attitudes. In addition, we hope to gather information that will be used to help other researchers examine online advertising and video clips.

Voluntary Nature of Participation: Participation in this study is voluntary. Your choice of whether or not to participate will not influence your future relations with San Diego State University. If you decide to participate, you are free to withdraw your consent and stop your participation at any time without penalty or loss of benefits to which you are allowed.

Questions: If you have any questions about the research now, please ask. If you have any questions later about the research, you may contact Justin Fortier at justinffortier@gmail.com. If you have any questions regarding your rights as a human subject and participation in this study, you may contact the SDSU Institutional Review Board at 619-594-6622 or irb@mail.sdsu.edu.

Agreement: The San Diego State University IRB has approved this consent form as signified by the Committee’s stamp. The consent form must be reviewed annually and expires on the date indicated on the stamp.
If you agree to participate, you will be given a copy of this agreement. You will also be given the time and date of this interview and the investigator's telephone number. You may use this information to request that your responses be withdrawn from the study if you choose.
THESIS SURVEY

IMPORTANT: Before beginning the survey please follow these directions... Please copy and paste the following link into a new browser window.

http://www.youtube.com/watch?v=QFaYt0BZYhc

Once you have viewed the entire video (6 min) please click the next button and respond to the survey items.

Post-Viewing Survey

Please respond to the following questions...

1. How much do you think people risk harming themselves by smoking marijuana?

   1  2  3  4  5
   No Risk  Very Little Risk  Moderate Risk  High Risk  Extreme Risk

2. How much do you think people risk harming members of their family by smoking marijuana?

   1  2  3  4  5
   No Risk  Very Little Risk  Moderate Risk  High Risk  Extreme Risk

3. How much do you think people risk trouble with the law by smoking marijuana?

   1  2  3  4  5
   No Risk  Very Little Risk  Moderate Risk  High Risk  Extreme Risk

4. How much do you think people risk harming their lungs by smoking marijuana?

   1  2  3  4  5
   No Risk  Very Little Risk  Moderate Risk  High Risk  Extreme Risk

5. How much do you think people risk using “harder” drugs because they smoked marijuana?

   1  2  3  4  5
   No Risk  Very Little Risk  Moderate Risk  High Risk  Extreme Risk
Please indicate how strongly you agree/disagree with the following statements:

   
   1                           2                           3                          4                         5  
   Strongly Disagree      Disagree               Neutral                  Agree           Strongly Agree

7. Marijuana hurts people’s coordination.
   
   1                           2                           3                          4                         5  
   Strongly Disagree      Disagree               Neutral                  Agree           Strongly Agree

8. It is normal for my friends to use marijuana.
   
   1                           2                           3                          4                         5  
   Strongly Disagree      Disagree               Neutral                  Agree           Strongly Agree

9. It is normal for my peers use marijuana.
   
   1                           2                           3                          4                         5  
   Strongly Disagree      Disagree               Neutral                  Agree           Strongly Agree

10. My parents would approve if I used marijuana.
   
   1                           2                           3                          4                         5  
   Strongly Disagree      Disagree               Neutral                  Agree           Strongly Agree

11. My friends would approve if I used marijuana.
   
   1                           2                           3                          4                         5  
   Strongly Disagree      Disagree               Neutral                  Agree           Strongly Agree

12. I think it is weird that people use marijuana.
   
   1                           2                           3                          4                         5  
   Strongly Disagree      Disagree               Neutral                  Agree           Strongly Agree
13. It is unusual for my friends to use marijuana.

1  2  3  4  5
Strongly Disagree  Disagree  Neutral  Agree  Strongly Agree

14. Recreational marijuana helps people to relax.

1  2  3  4  5
Strongly Disagree  Disagree  Neutral  Agree  Strongly Agree

15. I can see the benefits of marijuana use.

1  2  3  4  5
Strongly Disagree  Disagree  Neutral  Agree  Strongly Agree

16. Marijuana is one of the least harmful drugs.

1  2  3  4  5
Strongly Disagree  Disagree  Neutral  Agree  Strongly Agree

17. Marijuana is not addictive.

1  2  3  4  5
Strongly Disagree  Disagree  Neutral  Agree  Strongly Agree

18. The people in anti-drug ads have the same beliefs that I have.

1  2  3  4  5
Strongly Disagree  Disagree  Neutral  Agree  Strongly Agree

19. The people in anti-drug ads have different values than I have.

1  2  3  4  5
Strongly Disagree  Disagree  Neutral  Agree  Strongly Agree

20. The people in anti-drug ads have the same background that I have.

1  2  3  4  5
Strongly Disagree  Disagree  Neutral  Agree  Strongly Agree
21. The people in the anti-drug ads have the same cultural background that I have.

1 Strongly Disagree  2 Disagree  3 Neutral  4 Agree  5 Strongly Agree

22. The people in the anti-drug ads are from a different social class than me.

1 Strongly Disagree  2 Disagree  3 Neutral  4 Agree  5 Strongly Agree

Please complete the following sentence

23. Marijuana is…

1 Extremely Good  2 Very Good  3 Fairly Good  4 No Opinion  5 Fairly Bad  6 Very Bad  7 Extremely Bad
Table 1. Video Series Breakdown

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### Table 3. One-Way ANOVA for PRHE, PNMU, AMA by Exposure

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Table 4. Correlations for Exposure, PRHE, PNMU, Perceived Similarity, and AMA

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Table 5. Correlations for Exposed/Non-Exposed, PRHE, PNMU, Perceived Similarity, and AMA

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Table 6. Correlations for Exposure and PNMU, Controlling for Perceived Similarity

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APPENDIX C

ANTI-MARIJUANA PSA TRANSCRIPTS
“Achievements” Transcript

**Scene #1:** (Guitar music begins. A teenage boy with dark hair is shown standing in the middle of what appears to be a room decorated for a young girl.)

**Boy #1:** "I stole from my little sister" *(He exclaims in a happy voice.)*

**Scene #2:** (Scene changes, guitar music continues. A teenage girl is shown placing her school report card on the kitchen’s refrigerator door for display.)

**Girl #1:** "I got straight D's" *(She brags with a smile on her face.)*

**Scene #3:** (Scene changes. A teenage boy with blonde hair is shown slouching in his bed in a half-upright position.)

**Boy #2:** "I left my girlfriend 27 messages last night." *(He confidently explains.)*

**Scene #4:** (Scene changes. A teenage girl stands over her mother -- who is sitting in front of a mirror, sorrowfully gazing -- the girl smiles)

**Girl #2:** "I made my mother cry" *(She says proudly.)*

**Scene #5:** (Scene changes and speeds-up into fast forward. A teenage boy is shown waking up on a couch after what appears to be a party where he was intoxicated. As the scene continues in fast forward motion, people draw a mustache and uni-brow on his face, and put cheese curls in his nose as a prank. They write "DORK" on his forehead and "I (heart) Sara" on his cheek. The people disappear. He opens his eyes and looks at the camera.)

**Boy #3:** "I let people draw on me." *(He exclaims happily with a smile.)*

**Scene #6:** (Scene changes. There is a guy sitting in the drivers seat in his car, parked in front of a garage.)

**Boy #4:** "I ditched my friends and they had to find their own way home." *(He says in a very excited and happy voice; he smiles and nods approvingly as the scene fades away.)*

**Scene #6:** (Scene fades away. Screenshots of all six smiley, self-confident, and proud teenagers flash by. The overall tone is clearly sarcastic.)

**TEXT:** "What has weed done for you?"

“Hurt” Transcript

**Scene #1:** (Guitar plays melodic music, preschool age boy appears in a dark hallway outside of what appears to be his brother or sister’s room. A small orange spot begins to glow on the back of the little boy’s neck. It is clear that it is representing the burning of marijuana. The little boy puts his hand on the back of his neck and rubs the glowing spot.)

**Scene #2:** (Same music continues, but appears to be getting a little more curious sounding. The same little boy is not in his pre-school classroom. He notices something on his arm. When he pulls up his sleeve he sees the same glowing orange spot.)

**Scene #3:** (The little boy is now getting a ride home from school. His face appears gloomy and sad.)

**Scene #4:** The boy is back in the hallway and walking toward his sister’s room. Close up onto his eye reveals something orange and burning. As the camera begins to focus it becomes clear that the burning orange light is the tip of a burning marijuana joint. His sister is in the middle of the room dressed in a grungy grey hooded sweatshirt with messy hair. She appears to be about 16 years old, white, and middle class. A girl of similar age, race, and social class is sitting cross-legged next to her on the floor and is also a bit grungy. The girls is handing
the boys sister the joint. The sister looks up to see her brother watching this go on. A voice is suddenly heard.

**Narrator #1:** “Smoking weed hurts more than just you.”

“Fitting In” Transcript

**Scene #1:** Teenage boy is on a street with large billboard behind him. He looks at the screen and suddenly the billboard comes at him. He poses and it is suddenly revealed that there is a cut out in the billboard. The picture on the billboard is a baseball scene. The boy fits through the cut out. And the board falls in front of him. A second billboard appears, this time it is of some students hanging out at school he fits into another cut out. The next is of a skateboarder, and he fits in again. The last one is of another teenage boy handing the main character what looks like a joint. The smoke form the joint is exaggerated. The main character shakes his head and waves his hand in disapproval. Up Pops text that says “Is everything worth fitting into?”