

EXAMINING COLLEGE STUDENTS' REACTIONS TO
THREE ANTI-SMOKING MESSAGE APPROACHES:
HUMOR, PSYCHOLOGICAL REACTANCE, AND FEAR APPEALS

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ABSTRACT

The young adult population, defined as persons between the ages of 18-24, includes the youngest legal targets of tobacco industry marketing and is often overlooked by public health efforts. The primary goal of this study was to examine how 18-24 year old college students process three popular anti-smoking message appeals (fear, humor, and reactance to industry manipulation). Previous research has examined youth and general adult reactions to these three anti-smoking message approaches; however, this study extended this body of research by specifically targeting 18-24 year old college students. The proposed processes were tested using a repeated measures design. Results showed that all three message approaches influenced attitude about smoking; however, no message approach affected changes in behavior intention. Study limitations were discussed and future directions were suggested.

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CHAPTER 1: INTRODUCTION

Purpose and Goals of this Study

Cigarette smoking is considered the most preventable cause of death in Hawai'i as well as in the United States (CDC, 2001; DOH, 2001). Tobacco use has been called the number one public health problem. More than 400,000 Americans (USDHHS, 2000) including 1,200 people in Hawai'i (DOH, 2001) die each year from tobacco-related causes. Since the late 1990s, billions of dollars have been spent on national and state programs (State Tobacco Information Center, 2000) from federal and state sources and the Master Settlement Agreement (MSA) with tobacco companies (MSA, 1996). Youth and general adult smoking prevalence has decreased since 1997 (Johnston, O'Malley, & Bachman, 2003). However, young adults, defined as persons between the ages of 18-24, are the only group with a smoking trend that has continued to rise since 1998 (Johnston et al., 2003). Despite this trend, most campaigns focus their efforts on youth tobacco education and adult cessation programs and few interventions have focused on anti-smoking programs specifically for young adults. The young adult population comprises the youngest legal target of tobacco industry marketing (Rigotti, Lee, & Wechsler, 2000). With most anti-tobacco efforts aimed towards youth and general adults, the young adult population is often forgotten by public health efforts despite being heavily targeted by tobacco companies.

Various anti-tobacco campaigns use different approaches and different types of messages to reach their prescribed audience. Beaudoin's (2002) content analysis on anti-tobacco advertising shows that fear, humor, and psychological reactance to tobacco

industry manipulation were three of the most commonly used approaches. Thirty-one percent of overall anti-tobacco ads used fear appeals, 29% used humor appeals, and 24% used the theme of tobacco industry manipulation (Beaudoin, 2002). This study seeks to learn how these message appeals effect young adults, specifically the college-aged population. Understanding which types of anti-smoking advertisements do and do not work is imperative for public health practitioners to understand (Siegel, 2002). To do this, we need to understand the process through which these different appeals influence people. This study will examine how these three message appeals affect 18-24 year old college students' attitudes, intentions, and behavior.

Understanding what types of anti-tobacco messages are accepted by 18-24 year old college students will help public health practitioners design more effective campaigns for this growing population of smokers. By studying this often overlooked population, researchers may determine what types of young people are at greatest risk for developing various patterns of drug use. Reaching the college-aged population through effective prevention and intervention messages has the potential of preventing premature morbidity and mortality.

Smoking and College Students

Almost all tobacco control efforts focus on primary prevention for children and teenagers or smoking cessation for adult smokers (Ling & Glantz, 2002). The 18-24 year old cohort plays a pivotal role in reducing overall tobacco use in the United States. With a steady increase of 18-24 year olds attending college, higher levels of tobacco use among 18-24 year old college students is of growing concern (Ehlinger, 2000). The

Harvard College Alcohol Study, which also collects data on tobacco use, reported an increase in the prevalence of current (30 day) smoking by college students from 22.3% in 1993 to 28.5% in 1998 (Wechsler, Rigotti, Gledhill-Hoyt, Lee, 1998). Highest rates were among freshmen (31.2%) and lowest among seniors (25.3%) with higher smoking rates for females (29.2%) than males (27.5%) (Wechsler et al., 1998).

A study by Rigotti, Lee, and Wechsler (2000) found that 61% of college students have used tobacco within their lifetimes and 32.9% are current users. Although 6% “ever smokers” had their first cigarette after age 18, 14% of current smokers began to smoke regularly after they were 18 (Rigotti, Wechsler, Moran, & Majchrzak, 2002). These youth are at risk of becoming established smokers as young adults. Addiction is also an issue with college students; half of current users have made an unsuccessful quit attempt in the last year and 18% have unsuccessfully tried to quit at least five or more times (Wechsler et al., 1998). Students who use tobacco are also more likely to smoke marijuana, binge drink, have more sexual partners, have lower grades, and spend more time socializing with friends (Rigotti et al., 2000).

In 2000, over 24% of Hawai‘i high school students reported to be current cigarette smokers with teenage tobacco use increasing through high school with almost 30% of 12th graders using tobacco products (HYTS, 2000). This increase in high school tobacco use leads to continued smoking habits as young adults (Johnston et al., 2003). Smoking among 18-24 year olds has increased in Hawai‘i and currently rates as the highest percentage (30.3%) among adult smokers (BRFSS, 2002).

Factors Influencing Smoking Among College Students

Transition from youth to young adulthood. The period from late adolescence to young adulthood, sometimes referred to as emerging adulthood, is a time of transition. Eighteen to 24 year old college students may smoke 1) to prove their independence, 2) because this is a time of exploration and change, 3) to fit in, and 4) because they believe they are invincible and are not able to become addicted.

In the transition to adulthood, young adults begin acquiring qualities of individualism. This individualism includes accepting responsibility for one's self and making decisions independent of their parents (Arnett, 1998). No longer living at home and abiding by house rules, many 18-24 year old college students want to express their independence; adopting smoking behavior may be an easy way to do this. These self-pressures to make independent and adult decisions are exploited by the mass media and the tobacco industry who portray smoking as an adult choice (Landman, Ling, & Glantz, 2002).

A person beginning college enters a new environment with new rules and new activities. Changes in friends, work, and school are linked to smoking among young adults; each "life passage" provides an opportunity for the tobacco industry to introduce and solidify smoking behavior (Ling & Glantz, 2002). New friends who smoke and drink may influence the non-smoking individual to pursue the same activities. Smoking goes hand-in-hand with drinking and new social environments like bars and nightclubs may promote and solidify smoking behavior (Sepe, Ling, & Glantz, 2002).

Many 18-24 year old college students want to fit in with this new social environment. Peer smoking, smoking related attitudes, and perceived prevalence of peer smoking are all potentially important aspects of the smoking environment (Chassin, Presson, Rose, & Sherman, 1996; Rose, Chassin, Presson, & Sherman, 1996). These college students may want to follow what they believe are social norms; however, they may have inaccurate perceptions of actual smoking prevalence (Perkins, 2003). For example, the 2002 National College Health Assessment surveyed 44 colleges and universities across the U.S. (ACHA, 2002). Results from this national study shows that the perception of other's cigarette use (95%) is much higher than actual tobacco use (32%). Students that believe most people on campus smoke may feel increased pressure to conform to this perceived norm. Students who already smoke are also reinforced by this misperception on campus and may continue their unhealthy behavior. This misperception of the number of actual smokers is exacerbated by a feeling of invincibility.

Research has indicated that youth feel invincible to the long-term health consequences of tobacco use (Beaudoin, 2002; Hicks, 2002). New research indicates that these thoughts of invincibility may continue through young adulthood. A study of community college students found that many young smokers thought they were as healthy as nonsmokers and other smokers their age; findings suggests that college students are not worried about the health effects of tobacco use (Prokhorov, Warneke, de Moor, Emmons, Mullin Jones, Rosenblum, Suchanek Hudmon, & Gritz, 2003). Study participants recognized the general negative effects of tobacco use; however, many

participants reported feeling invulnerable to the health effects of tobacco use. Most smokers believed that others were more susceptible to the negative effects of smoking and almost half of smokers reported that quitting was not beneficial to their health (Prokhorov et al., 2003).

During the critical and transitioning years of young adulthood, public health efforts decrease while tobacco industry efforts rise. Once again, most public health anti-tobacco programs are tailored to teenagers and the general adult population. The Master Settlement Agreement (MSA) between the tobacco industry and 46 states placed legal limitations on tobacco companies; the tobacco company cannot market their product to teenagers (below 18 years of age). Most public health programs focus on youth prevention programs or adult cessation services. Young adults fall between these two age groups and do not have tailored anti-tobacco programs. Lack of public health attention does not aid in decreasing the prevalence of smoking among young adults.

Tobacco industry efforts. In contrast to public health's concentration on youth and the general adult population, the tobacco industry studies smokers in every age group. The tobacco industry also has developed marketing strategies to move people through stages from "pre-smoker" to "confirmed smoker" (Cummings, Morley, Horan, Steger, & Leavell, 2000). The tobacco industry particularly studies young adults because they are the youngest legal marketing target and young adult smokers greatly outnumber teen smokers (SAMSHA, 2001). The industry studies the attitudes, values, aspirations, lifestyles, and social patterns of young adults with the intent of making smoking a socially acceptable part of young adult behavior and lifestyle (Ling & Glantz, 2002).

College students are important to the industry for a variety of reasons: 1) progressing from “experimenter” to “confirmed” smoker is accompanied by an increase in smoking consumption; 2) young adults face multiple life transitions that provide opportunities to adopt and solidify smoking as part of their regular behavior; 3) the stresses from these life transitions invites the use of cigarettes for the drug effects of nicotine (Harden, 1984). In 2001, the tobacco industry spent \$11 billion nationally promoting their product, with an estimated \$50 million of tobacco marketing in Hawai‘i (Campaign for Tobacco-Free Kids, 2003).

Formerly undisclosed and private documents show that the tobacco industry has had a long involvement in higher education (Ritch & Begay, 2001). Whether tobacco companies target college students through persuasive advertising or oppose smoking restrictions on college and university campuses, their effort has been rewarded with increased levels of tobacco use among college students (Rigotti et al., 2000; Wechsler et al., 1998). Researchers had hoped that the university setting would provide interventions to prevent future premature morbidity and mortality; however, college smoking has increased (Rigotti et al., 2000; Wechsler et al., 1998).

A key part of both the college and non-college young adult experience is the social scene. Tobacco companies have profiled young adult social activities and leisure interests; companies integrate their product with young adult activities to stay current with their targeted audience (Ling & Glantz, 2002). The industry knows this population well and works hard to integrate smoking into the lives of college students specifically

and young adults in general through music, bars, clubs, and sporting events (Sepe & Glantz, 2002; Sepe, Ling, & Glantz, 2002).

Smoking Prevention Efforts for College Students

Compared to high schools, colleges do not have many organized health interventions. In high school, students learned about health and wellness through school based curriculum and mandatory health education classes. Through school health programs and youth-specific anti-smoking prevention programs, high school students received state and federal support in combating the tobacco industry. College students are more difficult to reach systematically, because they are not required to take health education courses or visit their university health services center.

In general, college students tend to be a difficult population to study (Johnston et al., 2003). Students may not be included in household surveys, which usually do not cover dormitories, fraternities, and sororities. Also, college students are often lumped into the general adult population of 19 years and over (i.e. Ward Research, 2002). Studies that combine the entire adult population into one sample may miss results that could lead to more effective prevention and intervention programs. Health research has found that the more tailored the message to the audience, the more attitudes, intention, and behavior change may result (Prochaska, DiClemente, & Norcross, 1992).

Until recently, the public health community thought that individuals over 18 years of age were less likely to start smoking. However, with new studies reporting increased young adult smoking prevalence (Johnston et al., 2003; Wechsler et al., 1998), the public health community is finally creating specific smoking prevention programs for college

students. Understanding what types of anti-tobacco messages are accepted by college students will help public health practitioners design more effective campaigns for this growing population of smokers.

CHAPTER 2: THEORETICAL FRAMEWORK

Anti-tobacco Campaigns: Multiple Campaigns, Multiple Messages

Attempting to influence a population to implement healthier lifestyle changes is a difficult task. Mass media campaigns are a key strategy in influencing a population for three reasons: 1) media campaigns can reach large numbers of people through television, radio, print, and the internet, 2) there is a relatively low cost in reaching such a large audience, and 3) mass media campaigns and social marketing techniques can influence community understanding of health beliefs on topics such as tobacco use, heart disease, and AIDS. Targeting an entire population through an organized mass media campaign can influence health-related social norms in the community (Flora, 2000).

In anti-tobacco mass media campaigns, target groups are usually divided into campaigns for youth, adults, and the general population (Beaudoin, 2002). Beaudoin (2002) conducted a content analysis of anti-smoking television advertisements produced between 1991 and 1999. The study found that youth-oriented ads have youth characters, sociability, and humor as common appeals and focused on social and short-term consequences. Adult-oriented ads heavily relied on fear appeals and promoted long-term, health-related consequences.

Beaudoin (2002) followed the framework for examining anti-smoking advertisements set forth by Goldman and Glantz (1998): industry manipulation, second-hand smoke, addiction, cessation, youth access, term of effects, and romantic rejection. Looking at overall campaigns and target age groups, industry manipulation (24%), second-hand smoke (27%), cessation (23%), and long-term consequences (33%) were the

most popular characteristics used in anti-tobacco advertisements. Health consequences (79%) were presented more often than social consequences (9%) and humor (29%). Fear (31%) and sociability (26%) were the most popular message appeals. However, separating campaigns by target age group (youth, general, adult), reveals usage differences in advertisement characteristics. For example, youth ads had an equal distribution of short- and long-term consequences, while general- and adult-focused ads had significantly more long-term consequences (Beaudoin, 2002).

Beaudoin's (2002) study shows the prevalence of different message appeals; however, the content analysis did not list young adults as a separate target group. The exclusion of young adult anti-tobacco advertisements is concerning, because this study suggests that 18-24 year old college students have not been a target group when designing and implementing anti-tobacco mass media campaigns.

Students at the University of Hawai'i at Manoa are exposed to several federal, state, and campus-specific anti-tobacco campaigns. The Hawai'i Department of Health's (DOH) Youth Tobacco Prevention and Education project aims to reduce the use of tobacco products among Hawai'i residents, specifically teenagers 12-18 years old (Ward Research, 2002). This prevention program uses a variety of message approaches, however, fear-arousing tobacco messages are often used to scare and warn youth about the harmful effects of tobacco use. The Healthy Hawai'i Initiative's (HHI) *Start.Living.Healthy.* campaign is funded by tobacco settlement money that was allocated to the DOH for disease prevention programs and the promotion of healthy lifestyles (DOH, 2002). This campaign often uses a humorous approach to reach its audience.

Finally, the American Legacy Foundation (ALF) launched a national tobacco counter-marketing campaign, “truth’ (Farrelly, Healton, Davis, Messeri, Hersey, & Haviland, 2002). The “truth” campaign markets its message as a brand and uses psychological reactance to tobacco industry manipulation to change people attitude and smoking behavior.

These three campaigns reach their audience through several different communication channels (i.e. TV, radio, pamphlets, website, workshops, etc). However, TV is a main vehicle for message distribution. This study will specifically compare these three different message appeals used in TV ads and hypothesize how each message appeal is processed by the college-aged population. Detailed descriptions of the anti-tobacco campaigns mentioned above is provided in Appendix A. In the following section, the process through which the three message appeals influence attitudes and intentions regarding smoking will be discussed.

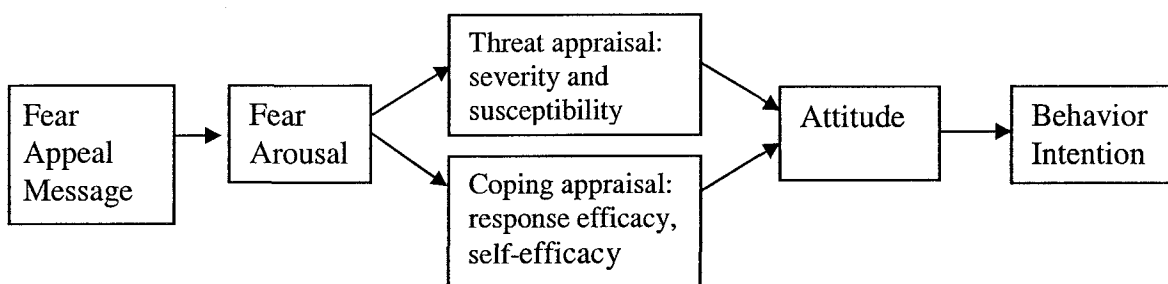
Fear

When reaching a general population with messages about smoking, public communication campaigns often use fear appeals (Beaudoin, 2002). Fear appeals, also known as scare tactics, are persuasive messages designed to scare people by explaining the horrible consequences that will happen if they do not adopt what the message recommends (Witte, 1992). When used correctly, fear appeals have great potential of stimulating positive behavior change. The basic fear appeal structure includes threat components and action components (O’Keefe, 2002). Threat components include: 1) severity of harm (physical or social harm) and 2) the personalized risk of the message

target (susceptibility and vulnerability). Action components include: 1) personal efficacy (ability to follow message recommendations) and 2) response efficacy (ability of message recommendation to eliminate or reduce threat). Together these two components influence attitudes. Fear appeal messages provide information that will arouse fear in the audience. Once fear is aroused, two components (threat appraisal and coping appraisal) will influence the outcome of attitude change. Strong changes in attitude will then lead to changes in behavior intention. Figure 1 explains the proposed process of the effects of fear appeal messages.

Figure 1

Proposed Process of the Effects of Fear Appeal Messages



While fear appeals are widely used, the effectiveness and usefulness of fear appeals for young people is debatable. Many factors contribute to the effectiveness of the fear appeal message. Fear or threat appraisals have great potential for stimulating behavioral change, if used correctly (Witte, 1995). However, ineffective campaigns may have serious consequences and may produce the opposite of desired effects, making the target audience more likely to continue the unhealthy behavior (Job, 1988). The age of the target audience influences the audience's perceived vulnerability of the threat (Hale &

Dillard, 1995). Hale and Dillard (1995) suggest that fear appeals are not effective for youth audiences. Fear appeals may not be effective for youth because young people view death and disease as long-term consequences. Ads demonstrating the long-term effects of tobacco use, such as lung cancer or emphysema, have been found to be less effective for youth audiences (McKenna & Williams, 1993; USDHHS, 1994). In contrast, ads showing short-term consequences of tobacco use have been found to be effective on youth (Goldman & Glantz, 1998). For youth, rather immediate fearful consequences like romantic rejection, unattractiveness, and undesirability may have a larger impact (Beaudoin, 2002). These ads counter the tobacco industry's portrayal of smoking as glamorous and healthy by showing that smoking can actually elicit immediate health and cosmetic effects. Like youth, many college students may not be affected by long term health consequences, but are more fearful of immediate negative social consequences (Ehlinger, 2000). Young adults are affected by their social environment (Bandura, 1986) and may smoke to prove their independence, to fit in, and because they believe they are invincible and are not addicted (Ehlinger, 2000). This study will examine how fear appeal messages are processed among young college students.

A meta-analysis by Witte and Allen (2000) indicates that fear appeals appear to be most effective when they depict a significant relevant threat (to increase perceptions of severity and susceptibility) and when they suggest effective responses that appear easy to accomplish (to increase perceptions of response efficacy and self-efficacy). Low-threat fear appeals appear to produce little if any persuasive effects. Therefore, the following three hypotheses are proposed:

- H1: Exposure to a fear appeal message will lead to fear arousal.
- H2: Fear arousal will be positively associated with threat appraisal.
- H3: Fear arousal will be positively associated with coping appraisal.

Negative messages, such as fear appeals, use elaborate, detail-oriented processing strategies to reach their audience. Negative messages result in more elaboration and thoughtful processing because negative affect informs the audience that the current situation is threatening and problematic. Adults perceive greater threat to their health and well-being than youth who feel death and disease will happen to others, but not themselves (Beaudoin, 2002). When used correctly, fear appeals may lead to changes in attitude and intention. Witte and Allen (2000) suggest that persuasive public health campaigns should promote high levels of threat and high levels of efficacy to promote attitude, intention, and behavior changes. Therefore, the following three hypotheses are proposed.

- H4: Threat appraisal will be positively associated with resulting attitude change.
- H5: Coping appraisal will be positively associated with resulting attitude change.
- H6: Attitude will be positively associated with the resulting change in behavior intention.

Humor

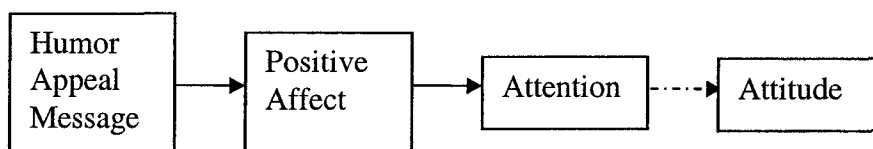
Although fear appeals and affectively neutral appeals have been the most popular strategies adopted by health communication campaigns, there has been an increase in humorous messages in public health campaigns. Consumer research shows that the arousal of positive emotions results in more positive attitudes towards the product and

stronger intent to positively respond to the message (Thorson & Friestad, 1989).

Accordingly, commercial advertisers often avoid negative affect and affectively neutral appeals and instead use positive appeals to reach their audience. Figure 2 explains the proposed process of the effects of humor appeal messages.

Figure 2

Proposed Process of the Effects of Humor Appeal Messages



Consumer market researchers as well as social scientists have found that humor effectively draws attention to an issue and leads to greater receptiveness of messages (Madden & Weinberger, 1984; Monahan, 1995; Reeves, Newhagen, Maibach, Basil, & Kurz, 1991).

Humor has been found to be effective in communicating antismoking messages (Blum, 1980). Nelson and While (1992) found that 53% of teenage students linked their perceptions of various advertised products to a favorite ad because of its humor appeal. Heuristic appeals may be an effective way to reach an unmotivated and low-involved audience. Positive messages use less elaborate and more heuristic strategies to foster good feelings. Positive messages trigger peripheral processing and require little cognitive effort by the audience (Petty & Cacioppo, 1996). Message designers may use heuristic appeals as a first step in enhancing the possibility that the positive affective appeal will

help the unmotivated and low-involved audience become more open to processing future health information.

College students are familiar with the negative health consequences of tobacco use. Youth and young adults understand the harmful effects of tobacco use, yet they have other weighty decisions and influences that surround them (Hicks, 2001). Heuristic appeals may be an effective way to reach this unmotivated and low-involved audience, because positive messages use less elaborate and more heuristic strategies to foster good feelings. According to the Elaboration Likelihood Model, the most obvious peripheral route is to associate the advocated position with other things that the audience already feels positive about (Petty & Cacioppo, 1996). Peripheral cues may include a message source who is an expert, attractive, or a powerful source. If the new attitude results from various persuasion cues and takes the peripheral route, the attitude change is likely to exist only as long as the persuasion cues remain salient (Petty & Cacioppo, 1996). Though attitude change may not last, exposure to humorous messages may help young adults reframe the issue of tobacco use.

By the same token, health messages that are entertaining, engaging, humorous, or dramatic are likely to succeed in overcoming barriers such as selective perception and selective retention more than strictly rational messages (Monahan, 1995). Positive affect is especially useful when trying to reach individuals who are very familiar with a message and may also help individuals reframe issues that they feel are not salient or applicable to them (Monahan, 1995; Ogilvy & Raphaelson, 1982). Tobacco prevention messages are prevalent and many young people are familiar with health consequences of

smoking. A humorous message may help an overfamiliar and unmotivated individual see the health issue in a new way. Therefore, the following hypotheses are proposed.

H7: Exposure to humor appeal messages will lead to increased positive affect.

H8: Humorous messages will have the highest recall of all message appeals.

Yet, there may be a drawback for humor based messages. A study by Biener, McCallum-Keeler and Nyman (2000) researched different kinds of anti-tobacco advertisements on adult viewers. These researchers found that the higher ads scored on eliciting positive emotions (humorous and entertaining), the lower the ads scored on mean effectiveness. Television advertisements eliciting strong negative emotions were rated as more effective than humorous or emotionally neutral advertisements. Humor appeals may draw attention to the message, but changes from peripheral processing result in short-lived attitude shifts. If the new attitude results from various persuasion cues and takes the peripheral route, the attitude change is likely to exist only as long as the persuasion cues remain salient (Petty & Cacioppo, 1996). Through peripheral processing, there is less attitude/behavior consistency; the individual is more susceptible to counter-effects and there are only short shifts in attitude change. Based on the information presented above, the following research question is proposed.

R1: What is the relationship between positive affect and attitude change?

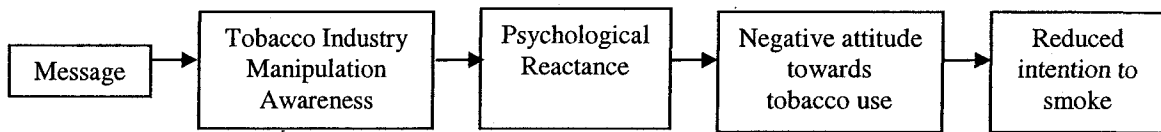
Psychological Reactance to Industry Manipulation

Psychological reactance is another approach that has been receiving growing attention in public health campaigns. Hicks (2001) conducted hundreds of interviews with teenagers and found that youth had a 100% awareness that tobacco killed. The study

found that youth's reason for using tobacco had everything to do with emotion and nothing to do with rational decision making. Often, anti-smoking messages are viewed as an attempt to tell youth what to do. Also, people are often not aware of the tobacco industry's influence in their decisions to smoke. College students also strive to express their independence and individuality through their actions (Ehlinger, 2000). Tobacco is seen as a visible and readily available way for youth and young adults to express their control and individuality. Similar to body piercings and tattoos, using tobacco is viewed as a sign of rebellion and a signal to the world that the tobacco users make decisions for themselves (Hicks, 2001).

Industry manipulation strategies in anti-tobacco messages are based on psychological reactance. People believe they possess specific behavioral and cognitive freedoms; if these freedoms are threatened or eliminated, the individual desires to reestablish the freedom to think, feel, and act as they (not others) choose (Brehm & Brehm, 1981). In the tobacco example, the message demonstrates how the industry takes their choice away via massive manipulative marketing and advertising practices. The individual feels deceived and manipulated by the tobacco industry's encouragement to smoke; therefore, the individual reacts to this threat by changing his/her attitude, beliefs, or behavior towards tobacco use. Figure 3 explains the proposed process of the effects of a message reflecting tobacco industry manipulation.

Figure 3

Proposed Process of the Effects of Tobacco Industry Manipulation Messages

A study by Hong, Giannakopoulos, Laing, and Williams (2001) found that psychological reactance decreased with age, but survey participants between the ages of 18 and 23 reported to have the highest level of psychological reactance. Hong and colleagues (2001) suggests that as one ages and establishes an independent lifestyle, the level of reactance is reduced.

Indeed, Goldman and Glantz (1998) found that ads that portrayed the tobacco industry as being manipulative were found to be the most effective. Adults were angered by these ads while youth, who often smoke as a sign of rebellion and independence, viewed the tobacco industry as trying to manipulate and encourage them to smoke. These industry manipulation ads prompted a psychological reactance and led many youth and adults towards an increase in their anti-tobacco attitudes and behavior. The following hypotheses are presented in response to the research presented above.

- H9: Exposure to the reactance message leads to increased awareness of tobacco industry manipulation.
- H10: Students' awareness of manipulation will be positively associated with psychological reactance to the tobacco industry.
- H11: Psychological reactance to the tobacco industry will be negatively associated with attitudes towards smoking.

H12: Negative attitudes towards smoking will be negatively associated with the intention to smoke.

CHAPTER 3: METHOD

Study Design and Data Collection Procedure

A one group repeated measures design was used for this study. Participants were recruited through Speech courses at the University of Hawai'i. All participants were exposed to anti-tobacco advertising from all three message appeal types: fear, humor, and psychological reactance to tobacco industry manipulation.

Before participating in the study, students were given an information sheet that described the study and explained that participation was voluntary and responses would be anonymous. A copy of the information sheet is provided in Appendix B. Before viewing the anti-tobacco ads, participants completed a pretest survey that included demographic questions, initial issue-involvement, relevance, attitude, intention, behavior questions, as well as exposure to anti-tobacco advertising questions. After completing this section of the survey, participants were shown two ads representing one of the message appeals mentioned above (i.e. fear). After viewing the ads, participants completed a posttest survey with questions regarding their attitudes, intentions, and behavior towards tobacco use as well as questions regarding the perceived impact of the ads. Two ads representing another message appeal (i.e. humor) was shown followed by a posttest survey measuring attitude, intention, and behavior changes. Two ads representing the third message appeal (i.e. tobacco industry manipulation) was shown followed with a posttest survey. A copy of the survey is provided in Appendix C.

Messages

A total of six messages were used in this study (two messages for each message appeal). All ads used in this study held a common anti-tobacco theme, however, each message appeal focused on different aspects of smoking. Ads showing different aspects of smoking were selected for several reasons. First of all, to keep the study sample size small, a within subject design was used. To discern the relative effect of each appeal type, it was necessary that each appeal focus on different aspects of smoking. Specifically, fear ads focused on the harmful effects of second-hand smoke, humor ads displayed the social aspects of smoking, and psychological reactance ads focused on tobacco industry manipulation. Moreover, the study was limited to using ads from existing sources and could not find ads that used the three message approaches for identical aspects of smoking. Thus, participants were exposed to all three appeals.

For fear appeal, the first ad showed an office worker surrounded by second-hand smoke that put her at a higher risk of lung cancer. The second ad showed a low birth weight baby who was 2 pounds, 2 ounces because his mother smoked 2 packs of cigarettes a day. These two ads were produced by the State of Hawai'i Department of Health. For humor appeal, the first ad showed a teenage girl talking sarcastically about how "cool" her boyfriend is because he smokes (i.e. she especially likes his phlegmy cough). The second humor ad showed a group of guys hanging out and smoking at the beach. Two girls approach them and their cigarettes go limp (representing male impotence). The humor ads were both produced by the State of Hawai'i Department of Health. The first reactance ad showed a tobacco industry executive talking about his

company's strategies to attract young adult smokers at bars and nightclubs. This first ad was produced by the California Department of Health Services. The second reactance ad showed a group of tobacco industry executives discussing how they need to recruit new smokers to replace the smokers who die each day. The second reactance ad was produced by the California Department of Health Services. Detailed descriptions of the selected ads used in this study can be found in Appendix E.

These messages were selected through focus-group testing. Two focus groups were conducted with smoker and non-smoker participants. All focus group participants were students at the University of Hawai'i at Manoa (UHM), between the ages of 18 to 24, enrolled in Speech courses at UHM, and received extra credit for their participation in this study. The author of this study acted as the moderator for each focus group. The moderator followed a discussion guide (found in Appendix D). All focus groups were audio recorded and used as part of the overall data analysis.

Focus group participants were shown four pre-selected ads representing each message appeal (fear, humor, and tobacco industry manipulation). Then, based on reactions by focus group participants, two ads were selected for each appeal. The ads selected to represent the three message appeals generated the most consensus among focus group participants.

Questionnaire Development

The questionnaire was developed based on 1) a review of existing questions in the literature and 2) focus group findings. The pretest and posttest survey instrument includes questions regarding tobacco use and uptake, tobacco related knowledge, attitude, beliefs,

and media effects. Questions were selected from 4 national tobacco studies so that this study can be compared to data from other state and national tobacco studies: 1) the Youth Risk Behavior Survey (YRBS), 2) the Behavior Risk Factor Surveillance System (BRFSS), 3) the Adult Tobacco Survey (ATS), and 4) the Youth Tobacco Survey (YTS). Questions selected from these published surveys were found at the Centers for Disease Control and Prevention tobacco question archive (<http://apps.nccd.cdc.gov/QIT/>).

To supplement the questions from the national surveys, additional questions were created specifically for this study based on focus group research and published tobacco literature. The focus group discussions were used to create appropriate questions regarding the social consequences of smoking and how participants react to tobacco industry manipulation. Draft questionnaires were pretested with 15 people (5 smokers and 10 non-smokers) and the finalized questionnaire was based on the results of those pretests. The finalized questionnaire was a 165-item survey instrument that was designed to be completed in 20 minutes. The operationalization of key measures and scales used in this study are described below.

Operationalization of Key Constructs

General Constructs

Sociodemographics. Sociodemographic factors examined included age, sex, ethnicity, and class standing. Participants were asked, “What is your age?” “What is your gender?,” “Which of the following groups best describes you?,” “Do you consider yourself Hispanic?,” and “What is your class standing?,” respectively.

Smoking Status Determination. Smoking status was important to determine because different outcome measures were predicted and created for smokers and non-smokers. To determine smoking status, participants were asked a question used in the Indiana Youth Health Survey (Chassin et al., 1996). Participants were asked to select the one sentence that described their cigarette smoking. The seven answer choices are found in Table 1. Those who reported they never smoked, who smoked one cigarette. “just to try”, were classified as a former smoker, and who smoke no more than 1 cigarette a month were placed into a non-smoker category. Those who reported smoking more than 1 cigarette per month were classified as smokers and answered “smoker” questions for the remainder of the survey.

Table 1

Smoking Status Determination

| | Survey Question | <i>n</i> | % |
|------------------------|--|----------|-------|
| Non-smoker Category | I have never smoked a cigarette, not even a few puffs, | 83 | 48.5 |
| | I have smoked one cigarette “just to try” but I have not smoked one in the last month. | 57 | 33.3 |
| | I no longer smoke but in the past I was a regular smoker. | 12 | 7.0 |
| | I smoke cigarettes but no more than 1 a month. | 5 | 2.9 |
| Smoker Category | I smoke cigarettes but no more than 1 a week. | 4 | 2.3 |
| | I smoke cigarettes but no more than 1 a day. | 1 | 0.6 |
| | I smoke more than 1 cigarette a day. | 9 | 5.3 |
| | Total | 171 | 100.0 |

Intention to Smoke. This is the key dependent measure of this study for non-smokers. Three questions determined non-smokers' smoking intention and was measured using a 5-point Likert scale ranging from 1 (*definitely yes*) to 5 (*definitely no*) as shown in Table 2. The intention to smoke scale was created by Pierce and colleagues (1998) and has been well validated through numerous state and national tobacco studies including the California Tobacco Survey and the National Youth Tobacco Survey. A factor analysis confirmed that all three items loaded as a single factor and Cronbach's reliability coefficient alpha for this scale was 0.91.

Table 2

Intention to Smoke

| Survey Question | N | Pretest M (SD) | Posttest M (SD) | Significance |
|---|-----|----------------------|-----------------------|-----------------------------|
| Do you think that you might try a cigarette soon? | 153 | 4.74 (0.65) | 4.76 (0.66) | $t(152) = 0.56$ $p = ns$ |
| Do you think you will smoke a cigarette anytime during the next year? | 153 | 4.62 (0.86) | 4.68 (0.81) | $t(152) = 1.81$ $p = ns$ |
| If one of your best friends offered you a cigarette, do you think you might smoke it? | 153 | 4.73 (0.69) | 4.73 (0.75) | $t(152) = 0.00$ $p = ns$ |
| <i>Intention to smoke index.</i> $\alpha=.91$ | 153 | 4.70 (0.66) | 4.72 (0.68) | $t(152) = 1.04$ $p = ns$ |

Note. All two-tailed tests. All questions were recoded such that 1=definitely yes and 5=definitely no.

Intention to Quit Smoking. This was the key dependent variable for smokers. To measure smokers' intention to quit smoking, smokers were asked "Are you seriously thinking of quitting smoking?" As shown in Table 3, smokers could select A) "No, not thinking of quitting" or B) "Yes, thinking of quitting."

Table 3

Intention to Quit Smoking

| Categories | Pretest | | Posttest | |
|-------------------------------|----------|-------|----------|-------|
| | <i>n</i> | % | <i>n</i> | % |
| No, not thinking of quitting. | 4 | 28.6 | 2 | 14.3 |
| Yes, thinking of quitting. | 10 | 71.4 | 12 | 85.7 |
| Total | 14 | 100.0 | 14 | 100.0 |

Recall. Recall was measured by asking participants, “What do you remember about the two ads just shown?” Participants answered this question after viewing each set of messages. Participants’ open-ended responses were then coded by 1) the number of items recorded and 2) whether the participants included the substantive message response of the ad (i.e. “smoking is the leading cause of male impotence”). The two ads from each message appeal were averaged together to create a combined recall score.

Fear Constructs

Attitudes towards Second-hand Smoke. An attitude towards second-hand smoke scale was developed to measure participants’ perceived harm of second-hand smoke. The scale was designed primarily to show changes in attitude after exposure to fearful anti-tobacco messages. The 4-item scale includes questions created for the study describing negative health consequences specific to the “fear” ads shown to the participants. A factor analysis showed that the four items loaded on a single factor and the scale has a Cronbach’s reliability coefficient alpha of 0.77. Table 4 provides descriptive statistics for the questions for the fear attitudes scale.

Table 4

Attitudes towards Second-hand Smoke Scale

| Survey Question | <i>n</i> | Pretest <i>M</i> (<i>SD</i>) | Posttest <i>M</i> (<i>SD</i>) | Significance |
|---|----------|--------------------------------------|---------------------------------------|-----------------------------------|
| Smoking is harmful not only to the smoker, but to people around the smoker. | 169 | 4.72 (0.77) | 4.79 (0.57) | $t(168) = 1.04$ $p = ns$ |
| Cigarette smoking during pregnancy increases the chance of low birth weight of the newborn. | 169 | 4.62 (0.64) | 4.83 (0.47) | *** $t(168) = 4.01$ $p < .001$ |
| Exposure to second-hand smoke from friends puts you at risk of serious illness. | 169 | 4.40 (0.76) | 4.72 (0.62) | *** $t(168) = 5.53$ $p < .001$ |
| Exposure to second-hand smoke in a workplace puts employees at risk of serious illness. | 169 | 4.47 (0.72) | 4.74 (0.59) | *** $t(168) = 4.60$ $p < .001$ |
| <i>Fear attitude index</i> $\alpha = .77$ | 169 | 4.55 (0.56) | 4.77 (0.44) | *** $t(168) = 5.02$ $p < .001$ |

Note. All two-tailed tests. All questions were recoded such that 1=strongly disagree and 5=strongly agree.
*** $p < .001$.

Threat appraisal. The threat appraisal scale was developed in a manner consistent with Witte's (1992) operationalization of perceived threat. Separate threat appraisal scales were developed for smokers and non-smokers to assess different outcome measures. Non-smokers completed a 3-item Likert scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). A factor analysis showed that the three items loaded on a single factor and the scale has a Cronbach's reliability coefficient alpha of 0.63. Smokers completed a 6-item Likert scale. A factor analysis showed that the six items loaded on a

single factor and the scale has a Cronbach's reliability coefficient alpha of 0.88. The threat appraisal scale is shown in Table 5 for smokers and non-smokers.

Coping appraisal. Coping appraisal scales were developed in a manner consistent with Witte's (1992) operationalization of response efficacy and personal efficacy. Separate coping appraisal questions were designed for smokers and non-smokers for different outcome measures. To measure response efficacy, non-smokers rated the question, "I believe that not being around second hand smoke will prevent lung cancer" on a 5-point Likert scale. To measure self efficacy, non-smokers rated the question "I am able to choose to not be around second-hand smoke" on the same Likert scale. Two smoker coping appraisal scales were created to measure respondents' response efficacy and self-efficacy. The smoker response efficacy scale had two questions and had a Cronbach's reliability coefficient alpha of 0.94. The smoker self efficacy scale also had two questions and had a Cronbach's reliability coefficient alpha of 0.86. All smoker coping appraisal questions followed a 5-point Likert scale. Descriptive statistics for the coping appraisal scale is shown in Table 6 for smokers and non-smokers.

Table 5

Threat Appraisal

| Survey Questions | <i>n</i> | <i>M</i> (<i>SD</i>) |
|---|----------|---------------------------|
| I could develop a smoking-related illness because of second-hand smoke. (<i>Non-smoker</i>) | 157 | 4.50 (0.87) |
| Second-hand smoke is a carcinogen and may cause lung cancer. (<i>Non-smoker</i>) | 157 | 4.71 (0.60) |
| I'm at risk for lung cancer because I am around people who smoke cigarettes. (<i>Non-smoker</i>) | 157 | 4.36 (0.74) |
| <i>Threat Appraisal Index (Non-smoker)</i> $\alpha = .63$ | 157 | 4.36 (0.74) |
| I could develop a smoking-related illness because I smoke. (<i>Smoker</i>) | 14 | 4.57 (0.65) |
| People around me could develop a smoking-related illness because of my second-hand smoke. (<i>Smoker</i>) | 14 | 4.21 (0.89) |
| Cigarettes smoke is a carcinogen and may cause lung cancer. (<i>Smoker</i>) | 14 | 4.64 (0.50) |
| Second-hand smoke is a carcinogen and may cause lung cancer. (<i>Smoker</i>) | 14 | 4.64 (0.50) |
| I'm at risk for lung cancer because I smoke. (<i>Smoker</i>) | 14 | 4.57 (0.51) |
| I put other people at risk because I smoke. (<i>Smoker</i>) | 14 | 4.14 (0.77) |
| <i>Threat Appraisal Index (Smoker)</i> $\alpha = .88$ | 14 | 4.46 (0.52) |

Note. All questions were recoded such that 1=strongly disagree and 5=strongly agree.

Table 6

Coping Appraisal Scales

| Variable | Survey Questions | <i>N</i> | <i>M</i> (<i>SD</i>) |
|--|---|----------|---------------------------|
| Response Efficacy (<i>Non-smoker</i>) | I believe that not being around second-hand smoke will prevent lung cancer. | 157 | 3.90 (1.14) |
| Personal Efficacy (<i>Non-smoker</i>) | I am able to choose to not be around second-hand smoke. | 157 | 3.99 (1.14) |
| Response Efficacy (<i>Smoker</i>) | I believe that not smoking will prevent lung cancer. | 14 | 3.93 (1.27) |
| | I believe that not smoking will prevent lung cancer in those around me. | 14 | 4.00 (1.24) |
| | <i>Smoker Response Efficacy Index.</i> $\alpha = 0.94$ | 14 | 3.96 (1.22) |
| Self Efficacy (<i>Smoker</i>) | I would easily be able to reduce my cigarette use if I wanted to. | 14 | 4.29 (1.07) |
| | I would easily be able to quit smoking cigarettes if I wanted to. | 14 | 3.93 (1.07) |
| | <i>Smoker Self Efficacy Index.</i> $\alpha = 0.86$ | 14 | 4.11 (1.00) |

Note. All questions were recoded such that 1=strongly disagree and 5=strongly agree.

Humor Constructs

Arousal of Positive Affect. The arousal of positive affect was measured by 3 questions. Participants were asked if they thought the ads were funny, cool, and if they thought the ads were directed at young people like them. Participants rated this question on a 5-point Likert scale ranging from 1 (*strongly agree*) to 5 (*strongly disagree*). Due to

a low reliability (Cronbach's reliability coefficient $\alpha = .50$), instead of creating an index, the questions were used as separate variables.

Dating attitude. The relationship between smoking status and dating was measured with the question "Most people your age consider smoking status a factor in their dating." This question was created specifically for this study and used a Likert scale ranging from 1 (*strongly agree*) to 5 (*strongly disagree*). Table 7 provides descriptive statistics for the dating attitude question.

Table 7

Dating Attitude

| Survey Question | <i>n</i> | Pretest <i>M</i> (<i>SD</i>) | Posttest <i>M</i> (<i>SD</i>) | Significance |
|--|----------|--------------------------------------|---------------------------------------|---|
| Most people your age consider smoking status a factor in their dating. | 171 | 3.58 (0.96) | 3.94 (0.92) | ** <i>t</i> (170) = 5.04 <i>p</i> < .001 |

Note. All two-tailed tests. All questions were recoded such that 1=strongly disagree and 5=strongly agree.
* *p* < .05. ** *p* < .01. *** *p* < .001.

Psychological Reactance Constructs

Awareness of Industry Manipulation. The 3-item awareness of industry manipulation scale was designed to measure participants' awareness of tobacco industry manipulation. The awareness of industry manipulation scale was designed primarily to show changes in awareness after exposure to the study's specific anti-tobacco messages. Most of the industry manipulation attitudes scale survey questions came from the CDC tobacco archive and the Legacy Foundation's study on countermarketing campaigns (Farrelly et al., 2002); however, one question ("Cigarette ads influence young people to start smoking") was created specifically for this study to measure the influence of

tobacco advertising. A factor analysis confirmed that all items loaded on a single factor. All three questions are found in Table 8. The awareness of industry manipulation scale was measured using a 5-point Likert-type scale and has a Cronbach's alpha of 0.72.

Table 8

Awareness of Industry Manipulation Scale

| Survey Question | <i>n</i> | Pretest <i>M</i> (<i>SD</i>) | Posttest <i>M</i> (<i>SD</i>) | Significance |
|---|----------|--------------------------------------|---------------------------------------|------------------------------|
| Cigarette ads influence young people to start smoking. | 170 | 4.19 (1.02) | 4.25 (0.86) | $t(169) = 0.93$ $p = ns$ |
| Tobacco companies act worse than other companies. | 170 | 3.59 (1.17) | 3.58 (1.20) | $t(169) = -0.22$ $p = ns$ |
| Tobacco companies have tried to mislead young people to buy their products more than other companies. | 170 | 3.84 (1.12) | 3.88 (1.13) | $t(169) = 0.61$ $p = ns$ |
| <i>Awareness of industry manipulation index.</i> $\alpha = 0.72$ | 170 | 3.86 (0.88) | 3.90 (0.86) | $t(169) = 0.96$ $p = ns$ |

Note. All two-tailed tests. All questions were recoded such that 1=strongly disagree and 5=strongly agree.

Reactance towards tobacco industry manipulation. Reactance towards tobacco industry manipulation was measured using a 2-item Likert scale ranging from 1 (*strongly agree*) to 5 (*strongly disagree*) with a Cronbach's coefficient alpha of 0.75. The 2-items were recoded such that 1= strongly disagree and 5= strongly agree. Participants in this study were asked, "You feel upset by the tobacco industry for using these efforts and strategies to attract more customers" ($M = 3.82$, $SD = 1.06$) and "You feel manipulated by the tobacco industry for encouraging you to smoke" ($M = 3.21$, $SD = 1.27$). The two

questions were designed after questions from the Hong Psychological Reactance Scale (Hong & Page, 1989) which has already been tested on university students.

Reactance Attitudes. To measure reactance attitude towards smoking, participants rated the question “If young people knew that the tobacco companies were ‘using’ them just to make money, they would never start smoking” on a Likert scale ranging from 1 (*strongly agree*) to 5 (*strongly disagree*).

Sample Description

Participants were 171 students at the University of Hawai‘i. Participants were recruited through undergraduate Speech Communication classes at the University of Hawai‘i. Each participant was assured their anonymity in this study. Participants ranged in age from 18 to 24 years, with an average age of 20.60 ($SD = 1.72$). The majority of respondents were female (57.3%). As shown in Table 9, participants’ cultural background was diverse. When asked which racial/ethnic group they most strongly identify with, most participants were Caucasian (19.3%) or of Japanese descent (32.2%). In addition, 21 participants (12.3%) indicated that they identified with a group that was not listed and 8 participants (4.7%) considered themselves to be Hispanic. Most students were upper classman due to recruitment from upper division Speech courses. Specifically, the sample included individuals of Freshman (8.8%), Sophomore (36.8%), Junior (31.0%) and Senior (22.8%) class standing.

The majority of participants (91.8%) were placed into a “Non-smoker” category (i.e. experimenters, former smokers, etc) while 8% of participants were placed into a “Smoker” category. During the past 30 days, smoker participants reported smoking on an

average of 20.64 days ($SD = 12.24$) and smoked an average of 4.86 cigarettes a day ($SD = 5.01$).

Table 9

Reported Ethnicity of Participants

| Ethnicity | <i>n</i> | % |
|---------------------------------------|----------|-------|
| African American | 1 | 0.6 |
| Caucasian | 33 | 19.3 |
| Chinese | 21 | 12.3 |
| Filipino | 20 | 11.7 |
| Hawaiian | 3 | 1.8 |
| Part Hawaiian | 4 | 2.3 |
| Indo-Chinese | 2 | 1.2 |
| Japanese | 55 | 32.2 |
| Korean | 6 | 3.5 |
| Portuguese | 1 | 0.6 |
| Samoan | 2 | 1.2 |
| Spanish, Cuban, Mexican, Puerto Rican | 2 | 1.2 |
| Other | 21 | 12.3 |
| Total | 171 | 100.0 |

CHAPTER 4: RESULTS

Hypothesis 1: Exposure and Fear Arousal

Hypothesis 1 predicted that exposure to fear appeal messages would lead to fear arousal. The hypothesis was tested by asking participants to rate on a scale of 1 (*strongly disagree*) to 5 (*strongly agree*) if the ads made them feel frightened, tense, nervous, anxious, uncomfortable, and nauseous. The hypothesis was supported. The majority of participants agreed that they were frightened (53%, $M = 3.41$, $SD = 1.16$), tense (45%, $M = 3.26$, $SD = 1.14$), nervous (32%, $M = 3.11$, $SD = 1.11$), anxious (36%, $M = 3.11$, $SD = 1.16$), and uncomfortable (51%, $M = 3.43$, $SD = 1.11$). One exception was that participants tended to disagree that the ad made them nauseous (31%, $M = 2.97$, $SD = 1.11$). A fear arousal index score was created to measure overall fear arousal. The 6-item index included the items mentioned above (frightened, tense, nervous, anxious, uncomfortable, and nauseous). A factor analysis showed that the six items loaded on a single factor and the scale has a Cronbach's reliability coefficient alpha of 0.95.

Hypothesis 2: Fear Arousal and Threat Appraisal

Hypothesis 2 predicted that fear arousal would be positively associated with threat appraisal. This hypothesis received mixed support. Among non-smokers, a Pearson correlation revealed that fear arousal was significantly and positively associated with threat appraisal as predicted, ($r(157) = 0.29$, $p < .05$). However, no significant association between fear arousal and threat appraisal was found for smokers.

Hypothesis 3: Fear Arousal and Coping Appraisal

Hypothesis 3 predicted that fear arousal would be positively associated with coping appraisal. Coping appraisal was divided into two measures, response efficacy and self efficacy. This hypothesis received partial support. As predicted, a Pearson correlation revealed a positive association between non-smokers' reported fear arousal and response efficacy, ($r(157) = 0.18, p < .05$). However, no significant association was found between non-smokers' reported fear arousal and self-efficacy, ($r(157) = -0.01, p = ns$). A Pearson correlation revealed no significant association between smokers' reported fear arousal and response efficacy, ($r(12) = 0.30, p = ns$), and no significant association between smokers' reported fear arousal and self efficacy, ($r(12) = -0.01, p = ns$).

Hypothesis 4: Threat Appraisal and Attitude

Hypothesis 4 predicted that threat appraisal would be positively associated with resulting attitude change. This hypothesis was supported. As predicted, a Pearson correlation revealed a positive association between non-smokers' reported threat appraisal and attitude, ($r(157) = 0.38, p < .05$). Smokers' reported threat appraisal was also significantly and positively associated with attitude, ($r(12) = 0.71, p < .05$).

Hypothesis 5: Coping Appraisal and Attitude

Hypothesis 5 predicted that coping appraisal would be positively associated with resulting attitude change. This hypothesis received partial support. Coping appraisal was divided into two measures, response efficacy and self efficacy. Non-smokers' reported response efficacy was significantly and positively associated with resulting attitude, ($r(157) = 0.29, p < .05$). Non-smokers reported self efficacy was also significantly and

positively associated with resulting attitude, ($r(157) = 0.18, p < .05$). A Pearson correlation found no significant associations between smokers' response efficacy and resulting attitude and smokers' self efficacy and resulting attitude.

Hypothesis 6: Attitude and Intention

Hypothesis 6 predicted that attitude would be positively associated with the resulting change in behavior intention. This hypothesis was not supported. A Pearson correlation revealed no significant associations between attitude and resulting behavior intention for non-smokers, ($r(153) = 0.14, p = ns$), and smokers, ($r(12) = -0.18, p = ns$).

Hypothesis 7: Exposure and Positive Affect

Hypothesis 8 predicted that exposure to humor appeal messages would lead to increased positive affect. The hypothesis was supported such that the majority of respondents agreed that the ads were funny (93%, $M = 4.52, SD = 0.71$), cool (38%, $M = 3.15, SD = 1.15$) and that the ads were "directed at young people like you" (92%, $M = 4.56, SD = 0.75$).

Hypothesis 8: Humor Messages and Recall

Hypothesis 7 predicted that humorous messages would have the highest recall of all message appeals. Hypothesis 7 was supported. As shown in Table 10, humor ads had the highest average recall ($M = 1.72, SD = 0.85$) compared to industry manipulation ads ($M = 1.58, SD = 0.62$) and fear ads ($M = 1.55, SD = 0.70$). However, when the content of the recall was examined, industry manipulation ads had the highest number of participants who recalled the substantive message of the ad (54.0%). On the other hand, humor had the lowest proportion in terms of substantive message recall.

Table 10

Ad recall

| Message Type | Amount Remembered Mean (SD) | Recognized Message (%) |
|-----------------------|--------------------------------|---------------------------|
| Humor | 1.72 (0.85) | 38.2 |
| Fear | 1.55 (0.70) | 53.9 |
| Industry Manipulation | 1.58 (0.62) | 54.0 |

Research Question 1: Affect and Attitude

Research question 1 asked: *What is the relationship between positive affect and attitude?* A Pearson correlation revealed significant and positive associations between positive affect and dating attitude. Specifically, the significant associations between positive affect and dating attitude are as follows: participants reported that the ads were funny ($r(170) = 0.27, p < .05$), cool ($r(169) = 0.19, p < .05$), and directed at them ($r(169) = 0.17, p < .05$). Despite the perception that humor messages may not produce attitude and behavioral intention change, exposure to the ads produced some change in dating attitudes. There was significant attitude change for the question, “Most people your age consider smoking status a factor in their dating” ($p < .05$).

Hypothesis 9: Exposure and Awareness

Hypothesis 9 predicted that exposure to the reactance message would lead to increased awareness of tobacco industry manipulation. The hypothesis was tested through two measures. First, participants were directly asked to rate on a scale of 1 (*strongly disagree*) to 5 (*strongly agree*) if after viewing the ads, they had become more aware of the tobacco industry’s efforts and strategies to attract more customers. Participants tended

to agree, ($M = 3.60$, $SD = 1.08$). However, a paired samples t -test revealed no significant attitude change for the awareness index, the second measure of awareness, from the pretest ($M = 3.86$, $SD = 0.88$) to the posttest ($M = 3.90$, $SD = 0.86$).

Hypothesis 10: Awareness and Psychological Reactance

Hypothesis 10 predicted that students' awareness of manipulation would be positively associated with psychological reactance. The hypothesis was supported. A Pearson correlation revealed a positive association between the industry manipulation awareness question and reported psychological reactance against industry manipulation, ($r(171) = 0.52$, $p < .05$). Psychological reactance was also significantly and positively associated with the awareness index, ($r(171) = 0.61$, $p < .05$).

Hypothesis 11: Psychological Reactance and Attitudes

Hypothesis 11 predicted that psychological reactance to the tobacco industry would be negatively associated with reactance attitudes towards smoking. Hypothesis 11 was supported. Reactance attitude towards smoking was measured by the question, "If young people knew that the tobacco companies were 'using' them just to make money, they would never start smoking." A Pearson correlation revealed that psychological reactance was significantly and positively associated with the reactance attitudes towards smoking, ($r(171) = 0.36$, $p < .05$).

Hypothesis 12: Attitudes and Intention

Hypothesis 12 predicted that negative reactance attitudes towards smoking would be negatively associated with the intention to smoke. This hypothesis was not supported. No statistical significance was found between non-smokers' attitude towards smoking

and their intention to smoke, ($r(153) = 0.14, p = ns$). Similarly, no significant association was found between smokers' attitudes towards smoking and their intention to quit smoking, ($r(12) = -0.18, p = ns$).

CHAPTER 5: DISCUSSION

The primary goal of this study was to examine how 18-24 year old college students process three popular message appeals (fear, humor, and reactance to industry manipulation). More specifically, this study set out to test how these messages affect 18-24 year old college students' attitude, intention, and behavior. Previous research has examined youth and general adult reactions to these three anti-smoking message approaches; however, this study extended this body of research by specifically targeting 18-24 year old college students. This next section will (1) discuss the key findings from the study, (2) discuss the limitations of the study, and (3) provide suggestions for future research.

Key Findings

Fear. The fear appeal messages used in this study did lead to fear arousal; however, some of the associations predicted in the proposed process of the effects of fear appeal messages were not supported. Among non-smokers, fear arousal was positively associated with threat appraisal and the personal efficacy component of coping appraisal. Among smokers, no significant associations were found between fear arousal and threat appraisal as well as fear arousal and coping appraisal. Perhaps the fear anti-tobacco advertisements used in this study did not depict a significant relevant threat (severity and susceptibility of the threat) and did not suggest effective responses that were easy to accomplish (response efficacy and self efficacy) (Witte & Allen, 2000). The fear messages in this study focused on the harmful effects of second-hand smoke. Second-hand smoke messages are usually aimed towards non-smokers. In general, smokers in the

study did not report high levels of threat and coping appraisal, suggesting that the smokers did not identify with the fear ads.

Among smokers and non-smokers, threat appraisal was positively associated with attitude change. The association between coping appraisal and attitude change revealed mixed support. Non-smokers' coping appraisal was positively associated with attitude change, while no significant association was found between smokers' coping appraisal and their change in attitude. A paired samples *t*-test revealed significant attitude change between the pretest and the posttest survey for smokers and non-smokers. However, non-smokers reported no changes in intention, while smokers reported some changes in behavior intention. However, a Chi-square nonparametric test revealed no significant changes due to participants' exposure to the ads.

Results from this study indicate that fear ads depicting the harmful effects of second-hand smoke has some effect on 18-24 year old college students. Hale and Dillard (1995) suggest that fear appeals are not effective for youth audiences, because young people are not concerned about long-term health consequences of smoking. However, this study found that 18-24 year old college students did feel susceptible to the negative effects of second-hand smoke and had changes in attitude.

Humor. Humorous messages are remembered the best of all message appeals. However, recall of the substance of the message was lower compared to other appeal types. This validates the concern that humor messages may not be effective in inducing behavior change. A significant positive association was found between positive affect and dating attitudes. On the other hand, the dating attitude question measured the role

smoking status plays in dating and had significant changes in attitude from the pretest to the posttest survey ($p < .05$). In summary, participants remembered the humor messages the best and it did influence attitude. Yet, results indicate that humor message recall was mostly peripheral may suggest this attitude change may not last. The relationship between positive affect and attitude change needs further research attention.

Psychological Reactance. Exposure to the reactance message did lead to increased awareness of tobacco industry manipulation. Participants reported feeling “angry” and “upset” at the tobacco industry for using manipulative strategies to attract more companies; therefore, students’ awareness of industry manipulation was positively associated with psychological reactance. As predicted, psychological reactance was positively associated with attitude towards smoking. However, no association was found between attitude and behavior intention. Results from this study supports Goldman and Glantz’s (1998) suggestions that ads which portray the tobacco industry as being manipulative are found to be effective. Psychological reactance messages hold promise for anti-tobacco messages targeting this particular age group. Reactance messages brought about changes in attitude, but future studies may find an association between reactance messages and smoking intentions.

Limitations

Many factors contributed to the results and limitations of this study including: 1) the study design and implementation, 2) the use of existing ads, 3) the use of weak scales to measure participants’ attitudes, behavior, and intention, and 4) a small sample of smokers. Each of these limitations will be explained in the section below.

Study Design and Implementation

An ideal study researching how 18-24 year old college students process three different message approaches would have used a three group repeated measures design rather than a one group repeated measures design. An ideal study would have created its own ads depicting the same anti-tobacco topic, but through different message approaches.

Also, all participants in this study viewed all three sets of messages. It would be beneficial to randomly assign participants to one of the three messages and have participants view only the message they were assigned to. While the study tried to deal with this limitation by focusing on different aspects of smoking, viewing all ads in such a short time may have influenced responses for each specific message.

The majority of participants (n=157) completed the survey in class; therefore, limited time and supervision may have influenced participants' responses. For example, 123 participants completed the survey in their mass lecture hall class. The instructor and teaching assistants monitored the survey to limit discussion; however, conducting the study with so many individuals at once may have affected survey responses. One person's laugh or quiet comment could have easily influenced other participants' reactions to the ads. Because the survey was mainly completed in class, the order of ads could only be rotated 3 times; therefore, there may be an ordering effect, because not all order of ads was tested.

The Use of Existing Ads

Due to the lack of resources, existing ads were used in this study. Under an ideal circumstance, one would create messages that address the identical subtopic within

smoking so that the only difference across the ads is the appeal type. This way, one can be confident regarding the manipulation. Selecting the ads used in this study was a difficult process.

Since different smoking topics were used for each message approach (fear messages focused on the harmful effects of second-hand smoke; humor messages focused on negative social consequences of smoking; industry manipulation messages focused on reactance to tobacco industry manipulation), participants may have responded to the different smoking topics rather than the message approaches. In any given ad, other characteristics of messages were integrated within (i.e. production quality, models used in the ad, date ad was created, etc.) Moreover, the message target did not fit in most ads. Fear ads targeted an older adult audience; one humor ad targeted youth while the other targeted young adults; one psychological reactance ad targeted youth while the second ad targeted young adults.

Also, some of the ads had previously been seen by participants, while other ads had never been seen. Participants who had previously seen certain ads may have responded differently to the survey questions than participants who had never seen the ad before. Some ads were better produced than others and were made more recently. Participants may have been distracted by the varying quality of the commercials and how some ads were more “dated” than others.

Using two ads to represent one message appeal was also a limitation in this study. Two ads were shown back to back to represent a specific message appeal; however, participants answered only one set of questions in response to both ads. Showing two ads

may have affected the way participants responded to the questions. Perhaps the first ad aroused the intended emotion, yet the second ad did not arouse the same affect. Future studies should not show multiple ads in a row, unless the ads are carefully selected or specifically created for the study.

Weak Measurements

Another potential weakness in this study was that most of the dependent measures generated extreme positive responses at pretest, thus limiting the possibility for change from pretest to posttest (i.e. ceiling effect). To see if indeed there are instances of ceiling effect, a series of sub-analysis was conducted, removing all high (5) and low (1) responses from the analyses. The attitude and intention analyses were then re-run. Results were mixed: While there were no changes in smoking intention, the sub-analysis revealed that all three attitude scales/questions for fear, humor, and psychological reactance, showed significant changes from pretest to posttest after the high scores were removed. This suggests that indeed a ceiling effect was operating for all of the attitude measures. Thus, in the future, we have to be particularly careful about developing attitude measures that do not generate extreme positive responses. Given that tobacco attitudes are well established among young people, this may be a challenge.

Many scales were created for this study; however, these scales should have been more thoroughly tested to ensure they measured what they were designed to measure. All scales were tested with a factor analysis, a correlation, and a reliability test. Each scale's factor analysis confirmed that the items loaded on a single component. A Pearson's correlation showed that the items were all significantly associated. However, not all

scales received high reliability scores. More time and research would have yielded stronger scales and stronger measurements. For example, a 2-item scale was designed to measure reactance to tobacco industry manipulation; however, it is possible that this measure was confounded with reactance as a general personality trait. Future studies should include the 14-item Hong's Psychological Reactance Scale (Hong & Page, 1989) to determine which participants have more reactant personalities and tendencies in general, and examine the relationship between the topic specific reactance and the general reactance trait of the individual. Will reactance messages work better on people with high or low reactance traits? Future studies may search for a relationship between reactance personality traits and reactance-focused anti-tobacco messages.

Another limitation of the study is the possibility that participants' threat and coping appraisal were affected by previous events, rather than the message itself. Although participants were asked to rate the message, past attitudes and experiences, could have affected their threat and coping responses. Similarly, participants' awareness of industry manipulation, psychological reactance, and their attitudes towards smoking may have been affected by previous experience and not the message presented.

Sample Limitations

The study had only 14 participants who were placed in a smoker category (smokes more than one cigarette a month). Results from this study must be interpreted carefully. Such a small sample of smokers prevents a generalization to all 18-24 year old college smokers.

Finally, subjects were not randomly selected to participate. All participants were students in Speech classes at the University of Hawai'i. The majority of students (n = 123) were from an introductory level speech class and 48 students were from upper division speech classes. Fourteen students were recruited through a Persuasion course. Many participants' previous instruction on persuasive messages may have affected how they viewed and responded to the different anti-smoking messages. Because the sample is not representative of 18 to 24 year-old college students as a whole, discretion should be used interpreting and advancing the results. In the future, researchers should allow more time to recruit a truly representative sample of this population.

Future Directions

Future studies may expand on the findings and limitations of this study to learn more about how 18-24 year old college students react and process different anti-tobacco message approaches. This study added to the growing literature of young adult tobacco research; however, future studies may further examine how 18-24 year old college students process the three message appeals studied here. However, each message appeal deserves an extensive study of its own.

Fear. Future studies should continue to research how young adults process and react to fear messages depicting the short term social consequences of smoking. The present study found that fear messages influenced participants' attitudes, but not their behavioral intentions. However, it is not clear if this is due to the nature of the message or to other factors. The messages used in this study showed long-term consequences of

second-hand smoke. Future studies may test if messages focused on short-term consequences would result in different findings.

Researchers may continue to study which fearful messages work best for this demographic. Are 18-24 year old college students more affected by negative social consequences (i.e. how peers view them) or negative physical consequences (i.e. lung cancer)? Future studies may test 18-24 year old college students' reactions to anti-tobacco ads depicting social consequences and long term health consequences of smoking. To study fear messages, future studies should also test other smoking topics (besides second-hand smoke). Second-hand smoke messages are targeted to non-smokers. Smokers in this study were not as affected by the second-hand smoking messages as non-smokers. Future studies should research what kind of fear ads would most affect young adult smokers. The current study showed mixed results regarding threat and coping appraisal. Smokers and non-smokers must identify with the ad and feel susceptible to the threat. Smokers and non-smokers must also feel confident that they can decrease or eliminate the threat.

Humor. As mentioned in the introduction, there has been an increase in humorous messages in public health campaigns. Future studies may examine what factors assist in creating positive affect. Also, do humorous anti-smoking messages help individuals reframe familiar issues and make them more open to accepting the public health message? Results from this study show that the humor message did change participants' attitudes about the role smoking status plays in dating. A significant association between the arousal of positive affect and dating attitudes was found, yet there was no impact on

behavioral intention. Previous humor research has shown that humor ads go through peripheral processing; therefore, there are only short shifts in attitude change. Bringing attention to the health issue is the first step in the behavior change process; however, future studies should test if humor messages have longer and extended changes in attitude.

Future studies may should focus on the question whether humor messages can influence behavior among 18-24 year old college students. When asked what they remembered about the ads, participants in this study often described the characters in the humor ads rather than identifying the message of the ad. For example, one of the humor ads centered on a teenage girl; the young adult audience remembered the teenage girl, but did not remember the ad's message. Again, results from the study show that humor messages are remembered better, yet it was inferior to other appeals when it comes to remembering the substantive message content. Humor messages did influence attitude, however, future studies should clarify the relationship between humor messages and attitude change.

Psychological Reactance. Hong et al. (2001) found that 18-23 year old survey participants scored the highest level of psychological reactance; however, their study examined participants 18-40 years old. A future study may specifically research psychological reactance to tobacco industry manipulation and include youth, aged 12-17 years, in comparison with the young adult population, aged 18-24 years. Researchers could examine which age groups may respond most favorably to reactance messages. Future studies should identify the relationship between general reactance and message

specific reactance. This may help public health researchers understand which population is likely to respond favorably to reactance messages.

Finally, research should expand to include young adults who are not attending college. Not much is known about young adults who are not attending college; yet, young adults who are not attending college have a higher smoking prevalence rate than young adults in college (Johnston et al., 2003). Would young adults not attending college process messages in a similar manner to college students their age? Studies have found that the overall prevalence of smoking declines with increasing years of education. In 2000, the age-adjusted prevalence of cigarette smoking ranged from 10.9% among college graduates to 31.8% among those with less than a high school education (American Lung Association, 2003). Future research is needed to understand the process through which fear, humor, and psychological reactance message are understood by young adults. Young adults is the only group with a smoking trend that has continued to rise since 1998 (Johnston et al., 2003); the public health community must work together to end this harmful smoking trend.

APPENDIX A

Description of Anti-tobacco Campaigns in Hawai'i

Youth Tobacco Prevention and Education Project, Hawai'i Department of Health

The Youth Tobacco Prevention and Education Project (YTPEP) of the DOH Health Promotion and Education Branch is funded by tobacco settlement funds allocated to the DOH. YTPEP aims to reduce the use of tobacco products among Hawai'i residents, specifically teenagers 12-18 years old (Ward Research, 2002). This prevention program uses multi-media channels including radio and television as well as print ads and posters. YTPEP often uses fear-arousing tobacco statistics like "After 430,000 deaths a year, you'd think there'd be a product recall" (Ward Research, 2002) to scare and warn youth about the harmful effects and circumstances of tobacco use.

Start.Living.Healthy., Hawai'i Department of Health

The Hawai'i Department of Health's *Start.Living.Healthy* (SLH) campaign is an intervention focused on good nutrition, physical activity, and decreased tobacco use in Hawai'i adults. This intervention is funded by tobacco settlement money that was allocated to the DOH for disease prevention programs and the promotion of healthy lifestyles (DOH, 2002). SLH was launched in 2002 as a public awareness campaign and delivers clear, practical messages about adopting healthier choices and aims to help Hawai'i adults realize that small changes of poor health habits can bring forth big health rewards (DOH, 2002a). Along with ongoing multi-media social marketing, advertising and public relations efforts, this statewide campaign brings together total community partnerships through state and county governments, private businesses, and professional

organizations (DOH, 2002a). SLH also received state and national recognition when Governor Ben Cayetano proclaimed 2002 as the Start.Living.Healthy year (DOH, 2002a).

The Truth, American Legacy Foundation

The largest tobacco industry manipulation campaign is American Legacy Foundation's national tobacco counter-marketing campaign, "truth" (Farrelly, Heaton, Davis, Messeri, Hersey, & Haviland, 2002). The "truth" campaign markets its message as a brand which builds a positive, tobacco free identity through advertisements that feature youth confronting the tobacco industry (Hicks, 2001). Exposure to the "truth" campaign was found to positively change youths' attitudes towards tobacco use. In contrast, a campaign using direct "just say no" messages like Philip Morris Company's "Think. Don't Smoke" campaign had a counterproductive influence and generated more favorable feelings towards the tobacco industry (Farrelly et al., 2002).

APPENDIX B:

Information Sheet for Participants

Study Title: A Study on Tobacco Advertising

Study Investigator: Leilani Takeuchi
Department of Speech, University of Hawai'i,
2560 Campus Road, George Hall 326,
Honolulu, Hawai'i 96822. Phone: 956-2334

Purpose

The purpose of the study is to see what students think about anti-tobacco messages. If you agree to participate in the study, you will be asked to complete an anonymous survey on tobacco advertising. All information that you supply will remain **anonymous**. Your participation is voluntary, and you may withdraw from the study at any time without consequence. You may skip any question on the survey. You are encouraged to answer all questions as truthfully as possible. The survey should take about 20 minutes to complete. If you have questions regarding this research, please contact Leilani Takeuchi at 956-2334.

Confidentiality

All information collected will be kept confidential to the extent allowed by law. Completed surveys will be kept in a locked cabinet at the main office of Speech department, and only the study investigator will have access to it. Data files from the study will not contain any identifying information that can connect you to the data. The results of this research project may be published, but only the combined data from all participants will be made public. However, the University of Hawai'i's Committee on Human Studies has the authority to review research records.

Risks and Benefits of Participation

There would be no risks associated with participation in the survey. Participants would not gain any direct benefits from the study either. However, data generated from this study will be used to develop and implement intervention programs that can improve health among the UH student population. Study participants may, therefore, gain indirect benefits from the study in the future.

Additional Inquiries

If you cannot obtain satisfactory answers to your questions or have comments or complaints about your treatment in this research project, contact: Committee on Human Studies, University of Hawai'i, 2540 Maile Way, Honolulu, Hawai'i 96822; Phone: 956-5007

APPENDIX C:

Survey Questionnaire

| |
|--------------------------------------|
| Survey on Tobacco Advertising |
|--------------------------------------|

1. What is your age? 1 _____
2. What is your gender? 1 _____ Female 2 _____ Male
3. Which of the following groups best describes you? (Select only one answer.)

| | |
|--|---|
| 1 _____ American Indian 2 _____ Black 3 _____ Chinese 4 _____ Filipino 5 _____ Hawaiian 6 _____ Part Hawaiian 7 _____ Japanese | 8 _____ Korean 9 _____ Portuguese 10 _____ Spanish, Cuban, Mexican, Puerto Rican 11 _____ Samoan 12 _____ White 13 _____ Indo-Chinese (Cambodian, Vietnamese, Laotian) 14 _____ Other _____ |
|--|---|
4. Do you consider yourself to be Hispanic?
 1 _____ Yes 2 _____ No
5. What is your class standing?

| | |
|---|--|
| 1 _____ Freshman 2 _____ Sophomore 3 _____ Junior 4 _____ Senior | 5 _____ Graduate 6 _____ Other: _____ |
|---|--|
6. In your opinion, is smoking an issue of public concern?

| | | | | | |
|-----------------------|---|---|---|---|----------------------|
| Definitely Yes | 1 | 2 | 3 | 4 | Definitely No |
| | | | | | 5 |
7. Please mark the ONE sentence below that describes your cigarette smoking.

A _____ I have never smoked a cigarette, not even a few puffs.
 B _____ I have smoked one cigarette "just to try" but I have not smoked one in the last month.
 C _____ I no longer smoke but in the past I was a regular smoker.
 D _____ I smoke cigarettes but no more than 1 a month.
 E _____ I smoke cigarettes but no more than 1 a week.
 F _____ I smoke cigarettes but no more than 1 a day.
 G _____ I smoke more than 1 cigarette a day.

Please read before proceeding:

| |
|---|
| <p>Category A: If you answered A,B,C, or D on question 7, please complete questions 8-13 on the next page. From this point on, please answer Category A items.</p> |
|---|

| |
|--|
| <p>Category B: If you answered E,F, or G on question 7, skip to questions 14-22 on the next page. From this point on, please answer Category B items.</p> |
|--|

| Category A (Answered A,B,C, or D on question 7): | | | | | | |
|---|--|-----------------------|---|---|----------------------|---|
| PLEASE RATE THE FOLLOWING QUESTIONS ON THE SCALE: | | | | | | |
| 1= DEFINITELY YES, 2= PROBABLY YES, 3= NEUTRAL, 4= PROBABLY NO, 5= DEFINITELY NO | | | | | | |
| | | Definitely Yes | | | Definitely No | |
| 8. | Do you think that you might try a cigarette soon? | 1 | 2 | 3 | 4 | 5 |
| 9. | Do you think you will smoke a cigarette anytime during the next year? | 1 | 2 | 3 | 4 | 5 |
| 10. | If one of your best friends offered you a cigarette, do you think you might smoke it? | 1 | 2 | 3 | 4 | 5 |
| 11. | Do you think NOT smoking is a way to express your independence? | 1 | 2 | 3 | 4 | 5 |
| 12. | Are you concerned about the possible effects of second hand smoke on your health? | 1 | 2 | 3 | 4 | 5 |
| 13. | Do you think it is true that exposure to second hand smoke from other people can hurt your health? | 1 | 2 | 3 | 4 | 5 |
| Please continue with question #23 on the next page. | | | | | | |

| Category B (Answered E,F, or G on question 7): | | | | | | |
|---|--|-----------------------|---|---|----------------------|---|
| 14. | During the past 30 days, how many days did you smoke cigarettes? _____ | | | | | |
| 15. | During the past 30 days, on the days you smoked cigarettes, how many cigarettes on average did you smoke per day? _____ | | | | | |
| 16. | Are you seriously thinking of quitting smoking? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> A. If YES, within the next 30 days <input type="checkbox"/> B. If YES, within the next 6 months <input type="checkbox"/> C. NO, not thinking of quitting | | | | | |
| PLEASE RATE THE FOLLOWING QUESTIONS ON THE SCALE: | | | | | | |
| 1= DEFINITELY YES, 2= PROBABLY YES, 3= NEUTRAL, 4= PROBABLY NO, 5= DEFINITELY NO | | | | | | |
| | | Definitely Yes | | | Definitely No | |
| 17. | Do you only smoke when around other people? | 1 | 2 | 3 | 4 | 5 |
| 18. | Are you concerned about the possible effects of cigarette smoking on your health? | 1 | 2 | 3 | 4 | 5 |
| 19. | Do you think you may be addicted to cigarettes? | 1 | 2 | 3 | 4 | 5 |
| 20. | Do you expect to be smoking cigarettes 5 years from now? | 1 | 2 | 3 | 4 | 5 |
| 21. | Would you be able to quit smoking cigarettes if you wanted to? | 1 | 2 | 3 | 4 | 5 |
| 22. | Do you think smoking is a way to express your independence? | 1 | 2 | 3 | 4 | 5 |
| Please continue with question #23 on the next page. | | | | | | |

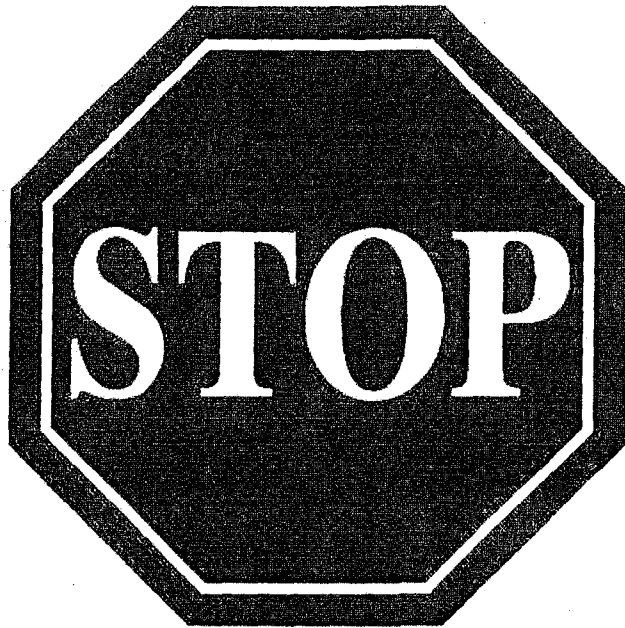
PLEASE COMPLETE ALL OF THE FOLLOWING QUESTIONS.

23. During the past 30 days, how often have you seen or heard any advertising AGAINST tobacco use?
- a. On television? 1 ___ Often 2 ___ Somewhat 3 ___ Rarely 4 ___ Never 5 ___ N/A
- b. On the radio? 1 ___ Often 2 ___ Somewhat 3 ___ Rarely 4 ___ Never 5 ___ N/A
- c. On posters? 1 ___ Often 2 ___ Somewhat 3 ___ Rarely 4 ___ Never 5 ___ N/A
- d. On a bus panel? 1 ___ Often 2 ___ Somewhat 3 ___ Rarely 4 ___ Never 5 ___ N/A

**PLEASE RATE THE FOLLOWING QUESTIONS ON THE SCALE:
1= STRONGLY AGREE, 2= AGREE, 3= NEUTRAL, 4= DISAGREE, 5= STRONGLY DISAGREE**

- | | Strongly Agree | | Strongly Disagree | | |
|--|-----------------------|---|--------------------------|---|---|
| 24. Smoking cigarettes may lead to impotence in male smokers. | 1 | 2 | 3 | 4 | 5 |
| 25. Someone's smoking status would play a factor in whether or not you would date him/her. | 1 | 2 | 3 | 4 | 5 |
| 26. Most people your age consider smoking status a factor in their dating. | 1 | 2 | 3 | 4 | 5 |
| 27. Young people who smoke cigarettes have more friends. | 1 | 2 | 3 | 4 | 5 |
| 28. Smoking makes someone my age look: | | | | | |
| a. Cool..... | 1 | 2 | 3 | 4 | 5 |
| b. In control..... | 1 | 2 | 3 | 4 | 5 |
| c. Attractive..... | 1 | 2 | 3 | 4 | 5 |
| d. Insecure..... | 1 | 2 | 3 | 4 | 5 |
| e. Independent..... | 1 | 2 | 3 | 4 | 5 |
| f. Conforming..... | 1 | 2 | 3 | 4 | 5 |
| g. Mature..... | 1 | 2 | 3 | 4 | 5 |
| h. Sophisticated..... | 1 | 2 | 3 | 4 | 5 |
| 29. Smoking is harmful not only to the smoker, but to people around the smoker. | 1 | 2 | 3 | 4 | 5 |
| 30. Breathing smoke from other people's cigarettes causes: | | | | | |
| a. Lung cancer..... | 1 | 2 | 3 | 4 | 5 |
| b. Heart disease..... | 1 | 2 | 3 | 4 | 5 |
| c. Colon cancer..... | 1 | 2 | 3 | 4 | 5 |
| d. Respiratory problems..... | 1 | 2 | 3 | 4 | 5 |
| e. Sudden infant death syndrome..... | 1 | 2 | 3 | 4 | 5 |
| f. Impotence..... | 1 | 2 | 3 | 4 | 5 |

| | <i>Strongly Agree</i> | | | <i>Strongly Disagree</i> | |
|--|-----------------------|---|---|--------------------------|---|
| | 1 | 2 | 3 | 4 | 5 |
| 31. Cigarette smoking during pregnancy increases the chance of low birth weight of the newborn. | 1 | 2 | 3 | 4 | 5 |
| 32. Exposure to second-hand smoke from friends puts you at risk of serious illness. | 1 | 2 | 3 | 4 | 5 |
| 33. Exposure to second-hand smoke in a workplace puts employees at risk of serious illness. | 1 | 2 | 3 | 4 | 5 |
| 34. Cigarette companies try to get young people to start smoking. | 1 | 2 | 3 | 4 | 5 |
| 35. Cigarette ads influence young people to start smoking. | 1 | 2 | 3 | 4 | 5 |
| 36. Cigarette ads influence your attitudes about smoking. | 1 | 2 | 3 | 4 | 5 |
| 37. You would like to see cigarette companies go out of business. | 1 | 2 | 3 | 4 | 5 |
| 38. Tobacco companies act worse than other companies. | 1 | 2 | 3 | 4 | 5 |
| 39. Tobacco companies have tried to mislead young people to buy their products more than other companies. | 1 | 2 | 3 | 4 | 5 |
| 40. If young people knew that the tobacco companies were "using" them just to make money, they would never start smoking. | 1 | 2 | 3 | 4 | 5 |
| 41. Smoking cigarettes helps people feel more comfortable at parties and in other social situations. | 1 | 2 | 3 | 4 | 5 |
| 42. Smoking cigarettes is less dangerous for a person your age because you can always quit later. | 1 | 2 | 3 | 4 | 5 |
| 43. People can get addicted to cigarette smoking just like they can get addicted to drugs such as cocaine and heroin. | 1 | 2 | 3 | 4 | 5 |
| 44. Smokers have shorter lives than nonsmokers. | 1 | 2 | 3 | 4 | 5 |
| 45. People risk harming themselves if they smoke one or more packs of cigarettes a day. | 1 | 2 | 3 | 4 | 5 |
| 46. Breathing second-hand smoke is bad for your health. | 1 | 2 | 3 | 4 | 5 |
| 47. In your opinion, if a woman smokes while pregnant, what is the probability of her having a baby with low birthweight? _____% | | | | | |
| 48. In your opinion, what is the probability of you developing a serious illness because of exposure to second-hand smoke from friends? _____% | | | | | |
| 49. In your opinion, what is the probability of a worker developing a serious illness because of exposure to second-hand smoke from co-workers? _____% | | | | | |



(Until given instructions to proceed)

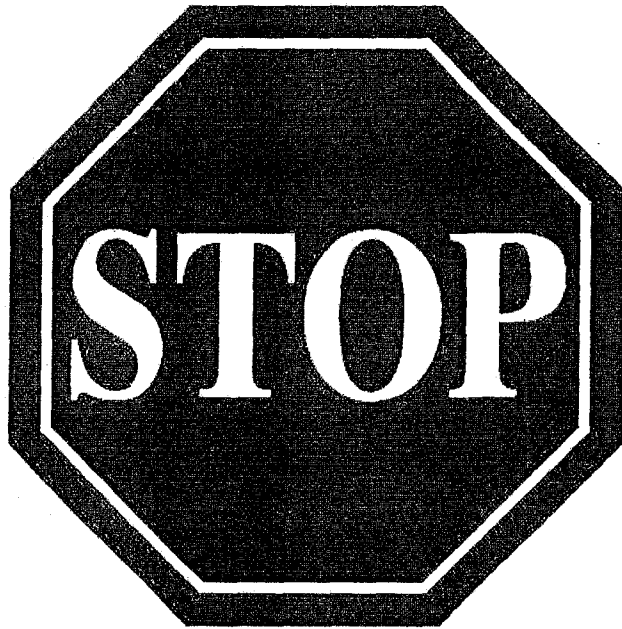
PLEASE RATE THE FOLLOWING QUESTIONS ON THE SCALE:
 1 = STRONGLY AGREE, 2 = AGREE, 3 = NEUTRAL, 4 = DISAGREE, 5 = STRONGLY DISAGREE

| | <i>Strongly Agree</i> | | | <i>Strongly Disagree</i> | |
|---|-----------------------|---|---|--------------------------|---|
| H1. You thought the ads were: | | | | | |
| A. Funny..... | 1 | 2 | 3 | 4 | 5 |
| B. Stupid..... | 1 | 2 | 3 | 4 | 5 |
| C. Cool..... | 1 | 2 | 3 | 4 | 5 |
| D. Directed at young people like you..... | 1 | 2 | 3 | 4 | 5 |
| H2. Smoking cigarettes may lead to impotence in male smokers. | 1 | 2 | 3 | 4 | 5 |
| H3. Someone's smoking status would play a factor in whether or not you would date him/her. | 1 | 2 | 3 | 4 | 5 |
| H4. Most people your age consider smoking status a factor in their dating. | 1 | 2 | 3 | 4 | 5 |
| H5. Young people who smoke cigarettes have more friends. | 1 | 2 | 3 | 4 | 5 |
| H6. Smoking makes someone my age look: | | | | | |
| a. Cool..... | 1 | 2 | 3 | 4 | 5 |
| b. In control..... | 1 | 2 | 3 | 4 | 5 |
| c. Attractive..... | 1 | 2 | 3 | 4 | 5 |
| d. Insecure..... | 1 | 2 | 3 | 4 | 5 |
| e. Independent..... | 1 | 2 | 3 | 4 | 5 |
| f. Conforming..... | 1 | 2 | 3 | 4 | 5 |
| g. Mature..... | 1 | 2 | 3 | 4 | 5 |
| h. Sophisticated..... | 1 | 2 | 3 | 4 | 5 |

H7. What do you remember about the two ads just shown?

A. Ad 1: _____

B. Ad 2: _____



(Until given instructions to proceed)

**PLEASE RATE THE FOLLOWING QUESTIONS ON THE SCALE:
1 = STRONGLY AGREE, 2 = AGREE, 3 = NEUTRAL, 4 = DISAGREE, 5 = STRONGLY DISAGREE**

- | | <i>Strongly Agree</i> | | | | <i>Strongly Disagree</i> |
|---|-----------------------|---|---|---|--------------------------|
| F1. The ads made you feel: | | | | | |
| a. Frightened..... | 1 | 2 | 3 | 4 | 5 |
| b. Tense..... | 1 | 2 | 3 | 4 | 5 |
| c. Nervous..... | 1 | 2 | 3 | 4 | 5 |
| d. Anxious..... | 1 | 2 | 3 | 4 | 5 |
| e. Uncomfortable..... | 1 | 2 | 3 | 4 | 5 |
| f. Nauseous..... | 1 | 2 | 3 | 4 | 5 |
| F2. Smoking is harmful not only to the smoker, but to people around the smoker. | 1 | 2 | 3 | 4 | 5 |
| F3. Breathing smoke from other people's cigarettes causes: | | | | | |
| a. Lung cancer..... | 1 | 2 | 3 | 4 | 5 |
| b. Heart disease..... | 1 | 2 | 3 | 4 | 5 |
| c. Colon cancer..... | 1 | 2 | 3 | 4 | 5 |
| d. Respiratory problems..... | 1 | 2 | 3 | 4 | 5 |
| e. Sudden infant death syndrome..... | 1 | 2 | 3 | 4 | 5 |
| f. Impotence..... | 1 | 2 | 3 | 4 | 5 |
| F4. Cigarette smoking during pregnancy increases the chance of low birth weight of the newborn. | 1 | 2 | 3 | 4 | 5 |
| F5. Exposure to second-hand smoke from friends puts you at risk of serious illness. | 1 | 2 | 3 | 4 | 5 |
| F6. Exposure to second-hand smoke in a workplace puts employees at risk of serious illness. | 1 | 2 | 3 | 4 | 5 |
| F7. In your opinion, if a woman smokes while pregnant, what is the probability of her having a baby with low birthweight? _____% | | | | | |
| F8. In your opinion, what is the probability of you developing a serious illness because of exposure to second-hand smoke from friends? _____% | | | | | |
| F9. In your opinion, what is the probability of a worker developing a serious illness because of exposure to second-hand smoke from co-workers? _____% | | | | | |

Please read before proceeding:

Category A: If you answered A,B,C, or D on question 7, please complete questions F10-F14 on the next page.

Category B: If you answered E,F, or G on question 7, skip to questions F15-F27 on the next page.

Category A (Answered A,B,C, or D on question 7, page one):

| | Strongly Agree | | | Strongly Disagree | |
|---|-----------------------|---|---|--------------------------|---|
| | 1 | 2 | 3 | 4 | 5 |
| F10. I could develop a smoking-related illness because of second-hand smoke. | 1 | 2 | 3 | 4 | 5 |
| F11. Second-hand smoke is a carcinogen and may cause lung cancer. | 1 | 2 | 3 | 4 | 5 |
| F12. I'm at risk for lung cancer because I am around people who smoke cigarettes. | 1 | 2 | 3 | 4 | 5 |
| F13. I believe that not being around second-hand smoke will prevent lung cancer. | 1 | 2 | 3 | 4 | 5 |
| F14. I am able to choose to not be around second-hand smoke. | 1 | 2 | 3 | 4 | 5 |

Please continue with question #28 on the next page.

Category B (Answered E,F, or G on question 7, page one):

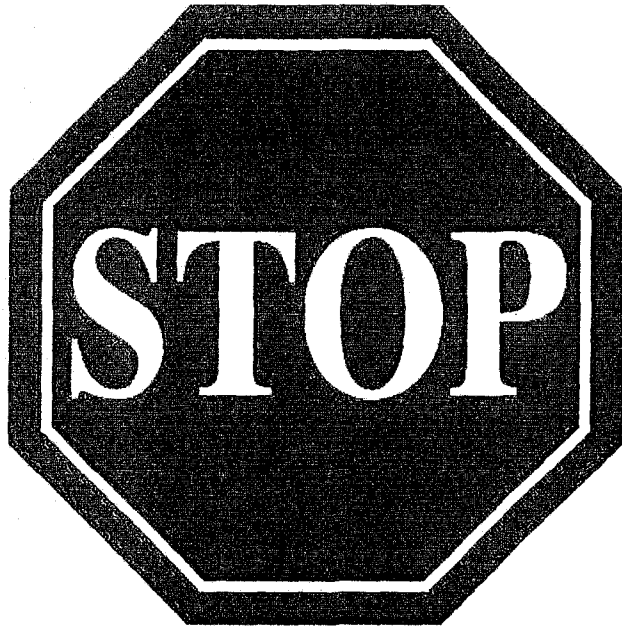
| | Strongly Agree | | | Strongly Disagree | |
|--|-----------------------|---|---|--------------------------|---|
| | 1 | 2 | 3 | 4 | 5 |
| F15. I could develop a smoking-related illness because I smoke. | 1 | 2 | 3 | 4 | 5 |
| F16. People around me could develop a smoking-related illness because of my second-hand smoke. | 1 | 2 | 3 | 4 | 5 |
| F17. Cigarette smoke is a carcinogen and may cause lung cancer. | 1 | 2 | 3 | 4 | 5 |
| F18. Second-hand smoke is a carcinogen and may cause lung cancer. | 1 | 2 | 3 | 4 | 5 |
| F19. I'm at risk for lung cancer because I smoke. | 1 | 2 | 3 | 4 | 5 |
| F20. I put other people at risk of lung cancer because of my second-hand smoke. | 1 | 2 | 3 | 4 | 5 |
| F21. I believe that not smoking will prevent lung cancer. | 1 | 2 | 3 | 4 | 5 |
| F22. I believe that not smoking will prevent lung cancer in those around me. | 1 | 2 | 3 | 4 | 5 |
| F23. I should not smoke around others. | 1 | 2 | 3 | 4 | 5 |
| F24. I would be able to not smoke around others. | 1 | 2 | 3 | 4 | 5 |
| F25. I should not smoke cigarettes because it is bad for me. | 1 | 2 | 3 | 4 | 5 |
| F26. I would easily be able to reduce my cigarette use if I wanted to. | 1 | 2 | 3 | 4 | 5 |
| F27. I would easily be able to quit smoking cigarettes if I wanted to. | 1 | 2 | 3 | 4 | 5 |

Please continue with question #28 on the next page.

F28. What do you remember about the two ads just shown?

A. Ad 1: _____

B. Ad 2: _____



(Until given instructions to proceed)

**PLEASE RATE THE FOLLOWING QUESTIONS ON THE SCALE:
1 = STRONGLY AGREE, 2 = AGREE, 3 = NEUTRAL, 4 = DISAGREE, 5 = STRONGLY DISAGREE**

| | Strongly Agree | | | Strongly Disagree | |
|---|-----------------------|---|---|--------------------------|---|
| | 1 | 2 | 3 | 4 | 5 |
| M1. After viewing the ads, you have become more aware of the tobacco industry's efforts and strategies to attract more customers. | | | | | |
| M2. You feel upset at the tobacco industry for using these efforts and strategies to attract more customers. | 1 | 2 | 3 | 4 | 5 |
| M3. You feel manipulated by the tobacco industry for encouraging you to smoke. | 1 | 2 | 3 | 4 | 5 |
| M4. Cigarette companies try to get young people to start smoking. | 1 | 2 | 3 | 4 | 5 |
| M5. Cigarette ads influence young people to start smoking. | 1 | 2 | 3 | 4 | 5 |
| M6. Cigarette ads influence your attitudes about smoking. | 1 | 2 | 3 | 4 | 5 |
| M7. You would like to see cigarette companies go out of business. | 1 | 2 | 3 | 4 | 5 |
| M8. Tobacco companies act worse than other companies. | 1 | 2 | 3 | 4 | 5 |
| M9. Tobacco companies have tried to mislead young people to buy their products more than other companies. | 1 | 2 | 3 | 4 | 5 |
| M10. If young people knew that the tobacco companies were "using" them just to make money, they would never start smoking. | 1 | 2 | 3 | 4 | 5 |

M11. What do you remember about the two ads just shown?

A. Ad 1: _____

B. Ad 2: _____

PLEASE COMPLETE ALL OF THE FOLLOWING QUESTIONS.

| | | <i>Strongly Agree</i> | | | <i>Strongly Disagree</i> | |
|-----|---|-----------------------|---|---|--------------------------|---|
| G1. | Smoking cigarettes helps people feel more comfortable at parties and in other social situations. | 1 | 2 | 3 | 4 | 5 |
| G2. | Smoking cigarettes is less dangerous for a person your age because you can always quit later. | 1 | 2 | 3 | 4 | 5 |
| G3. | People can get addicted to cigarette smoking just like they can get addicted to drugs such as cocaine and heroin. | 1 | 2 | 3 | 4 | 5 |
| G4. | Smokers have shorter lives than nonsmokers. | 1 | 2 | 3 | 4 | 5 |
| G5. | People risk harming themselves if they smoke one or more packs of cigarettes a day. | 1 | 2 | 3 | 4 | 5 |
| G6. | Breathing second-hand smoke is bad for your health. | 1 | 2 | 3 | 4 | 5 |

Please read before proceeding:

Category A: If you answered A,B,C, or D on question 7, please complete questions G7-G12.

Category B: If you answered E,F, or G on question 7, skip to questions G13-G18 on the next page.

Category A (*Answered A,B,C, or D on question 7, page one*):

| | | <i>Definitely Yes</i> | | | <i>Definitely No</i> | |
|------|--|-----------------------|---|---|----------------------|---|
| G7. | Do you think that you might try a cigarette soon? | 1 | 2 | 3 | 4 | 5 |
| G8. | Do you think you will smoke a cigarette anytime during the next year? | 1 | 2 | 3 | 4 | 5 |
| G9. | If one of your best friends offered you a cigarette, do you think you might smoke it? | 1 | 2 | 3 | 4 | 5 |
| G10. | Do you think NOT smoking is a way to express your independence? | 1 | 2 | 3 | 4 | 5 |
| G11. | Are you concerned about the possible effects of second hand smoke on your health? | 1 | 2 | 3 | 4 | 5 |
| G12. | Do you think it is true that exposure to second hand smoke from other people can hurt your health? | 1 | 2 | 3 | 4 | 5 |

THANK YOU FOR YOUR TIME! 😊

Category B (Answered E, F, or G on question 7, page one):

G13. Are you seriously thinking of quitting smoking?

1 ___ Yes 2 ___ No

___ A. If YES, within the next 30 days

___ B. If YES, within the next 6 months

___ C. NO, not thinking of quitting

| | <i>Definitely Yes</i> | | | <i>Definitely No</i> | |
|--|-----------------------|---|---|----------------------|---|
| | 1 | 2 | 3 | 4 | 5 |
| G14. Are you concerned about the possible effects of cigarette smoking on your health? | 1 | 2 | 3 | 4 | 5 |
| G15. Do you think you may be addicted to cigarettes? | 1 | 2 | 3 | 4 | 5 |
| G16. Do you expect to be smoking cigarettes 5 years from now? | 1 | 2 | 3 | 4 | 5 |
| G17. Would you be able to quit smoking cigarettes if you wanted to? | 1 | 2 | 3 | 4 | 5 |
| G18. Do you think smoking is a way to express your independence? | 1 | 2 | 3 | 4 | 5 |



Thank you for your time!

APPENDIX D:

Focus Group Discussion Guide

- I. Introduction
 - Moderator introduction
 - Purpose of focus group discussion: To gather information on the opinions, perceptions, attitudes and behaviors of college students regarding four message appeals types: fear, humor, and psychological reactance.
 - Confidentiality agreement
 - Introduction of focus group members

- II. Warm-up Discussion
 - Thoughts about smoking (issue relevance, issue involvement)
 - How do you feel about smoking?
 - Is smoking a serious problem for college students?
 - Exposure to anti-tobacco campaign(s)
 - Have you seen or heard any advertising against tobacco?
 - What do you think about the ads you've seen?

- III. Introduction to Message Appeals (Show ads and then facilitate discussion)
 - Humor: *Start.Living.Healthy.*
 - How did the message make you feel?
 - Was the ad funny?
 - Do you think the ad was effective?
 - Do you feel like you can follow the advice given from the ad?
 - Did the ad make you think twice about smoking?
 - Did the ad make you think about quitting?
 - If you saw this ad before, did you talk about the ad or the health behavior with others?
 - Who did you discuss the ad with?
 - Fear: Youth Tobacco Prevention and Education Program
 - How did the message make you feel?
 - Was the ad scary? Upsetting?
 - Was the message believable?
 - Do you think the ad was effective?
 - Did the ad make you think twice about smoking?
 - Did the ad make you think about quitting?
 - What do students your age fear more—immediate social consequences of smoking or long-term health consequences?
 - If you saw this ad before, did you talk about the ad or the health behavior with others?
 - Who did you discuss the ad with?

Focus Group Discussion Guide (cont.)

- Psychological Reactance: truth Campaign
 - How did the message make you feel?
 - Did you learn something new?
 - Was the message believable?
 - Do you think the ad was effective?
 - Did the ad make you think twice about smoking?
 - Did the ad make you think about quitting?
 - If you saw this ad before, did you talk about the ad or the health behavior with others?
 - Who did you discuss the ad with?

IV. Discussion of Overall Opinion of Ads

- Effectiveness of Ads
 - Of all ads seen today, which ad type do you think is the most effective in reaching college students?
- Suggestions
 - If you were designing an anti-tobacco public communication campaign for college students, what type of message appeal would you use?

V. Conclusion of Focus Group

- Would you like to be contacted with results from study?

Thank you for your time!

APPENDIX E:

Description of Anti-tobacco Advertisements

Fear Appeal Anti-tobacco Advertisements:

1. "Delivery Room"
A voice over announces the name and healthy weights of different babies. The healthy babies are held and cuddled by their parents. Finally, a low birth-weight baby is shown hooked up to many machines. The voice over says, "Kimo Medeiros: 2 pounds, 2 ounces, 2 packs a day.... If you're pregnant, don't smoke."
2. "Office ETS"
A woman at work encounters heavy smoke wherever she goes. A health statistic warns, "People around second-hand smoke are 34% more likely to develop lung cancer."

Humor Appeal Anti-tobacco Advertisements:

1. "He's so cool"
A teenage girl at the beach describing her boyfriend who smokes, saying, "He's so cool." The ad is meant to be sarcastic and explains how tobacco companies want people to think that smoking is attractive.
2. "Limp"
Two beautiful bikini-clad girls walk on the beach towards a group of boys who are smoking. Suddenly, the boys' cigarettes go "limp" and the girls laugh as they walk pass. A voice over explains, "Smoking is the leading cause of male impotence. Get the hard facts."

Tobacco Industry Manipulation Anti-tobacco Advertisements:

1. "Spokesperson"
A group of tobacco industry executives sit at a boardroom and discuss the need to recruit more smokers; each day they lose more clients—because they die. One executive laughs, "We're not in this for our health!"
2. "Breeding Ground"
A tobacco company executive sits at a bar and explains his company's strategy to gain new smokers: Have social smokers think that they are not smokers. In reality, they will be smoking a pack a day by next year.

APPENDIX F:
Individual Scale Items

General Constructs

Sociodemographics

1. What is your age?
2. What is your gender?
3. Which of the following groups best describes you?
4. Do you consider yourself Hispanic?
5. What is your class standing?

Smoking Status Determination

Non-smoker Category

1. I have never smoked a cigarette, not even a few puffs.
2. I have smoked one^{*} cigarette “just to try” but I have not smoked one in the last month.
3. I no longer smoke but in the past I was a regular smoker.
4. I smoke cigarettes but no more than 1 a month.

Smoker Category

1. I smoke cigarettes but no more than 1 a week.
2. I smoke cigarettes but no more than 1 a day.
3. I smoke more than 1 cigarette a day.

Intention to Smoke

1. Do you think that you might try a cigarette soon?
2. Do you think you will smoke a cigarette anytime during the next year?
3. If one of your best friends offered you a cigarette, do you think you might smoke it?

Intention to Quit Smoking

1. Are you seriously thinking of quitting smoking?

Recall

1. What do you remember about the two ads just shown?

Fear Constructs

Fear Arousal

1. The ads made you feel:
 - a. Frightened
 - b. Tense
 - c. Nervous
 - d. Anxious
 - e. Uncomfortable
 - f. Nauseous

Attitudes towards Second-hand Smoke Scale

1. Smoking is harmful not only to the smoker, but to people around the smoker.
2. Cigarette smoking during pregnancy increases the chance of low birth weight of the newborn.
3. Exposure to second-hand smoke from friends puts you at risk of serious illness.
4. Exposure to second-hand smoke in a workplace puts employees at risk of serious illness.

Threat Appraisal

Non-smoker Category

1. I could develop a smoking-related illness because of second-hand smoke.
2. Second-hand smoke is a carcinogen and may cause lung cancer.
3. I'm at risk for lung cancer because I am around people who smoke cigarettes.

Smoker Category

1. I could develop a smoking-related illness because I smoke.
2. People around me could develop a smoking-related illness because of my second-hand smoke.
3. Cigarette smoke is a carcinogen and may cause lung cancer.
4. Second-hand smoke is a carcinogen and may cause lung cancer.

5. I'm at risk for lung cancer because I smoke.

6. I put other people at risk because I smoke.

Coping Appraisal Scales

Response Efficacy (Non-smoker)

1. I believe that not being around second-hand smoke will prevent lung cancer.

Personal Efficacy (Non-smoker)

1. I am able to choose to not be around second-hand smoke.

Response Efficacy (Smoker)

1. I believe that not smoking will prevent lung cancer.

2. I believe that not smoking will prevent lung cancer in those around me.

3. I should not smoke around others. *

4. I should not smoke cigarettes because it is bad for me. *

Self Efficacy (Smoker)

1. I would be able to not smoke around others. *

2. I would easily be able to reduce my cigarette use if I wanted to.

3. I would easily be able to quit smoking cigarettes if I wanted to.

Humor Constructs

Arousal of Positive Affect

1. You thought the ads were:

A. Funny

B. Stupid *

C. Cool

D. Directed at young people like you

Dating attitude

1. Most people your age consider smoking status a factor in their dating.

2. Someone's smoking status would play a factor in whether or not you would date him/her. *

Psychological Reactance Constructs

Awareness of Industry Manipulation Scale

1. Cigarette ads influence young people to start smoking.
2. Cigarette ads influence your attitudes about smoking. *
3. You would like to see cigarette companies go out of business. *
4. Tobacco companies act worse than other companies.
5. Tobacco companies have tried to mislead young people to buy their products more than other companies.

Reactance towards tobacco industry manipulation

1. You feel upset by the tobacco industry for using these efforts and strategies to attract more customers.
2. You feel manipulated by the tobacco industry for encouraging you to smoke

Reactance Attitudes

1. If young people knew that the tobacco companies were 'using' them just to make money, they would never start smoking.

* = Items ultimately removed from the scales because they were not positively correlated with the other scale items and/or they decreased the reliability of the scale.

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