MODIFYING SMOKING BEHAVIOR THROUGH PUBLIC SERVICE
ANNOUNCEMENTS AND CIGARETTE PACKAGE WARNING LABELS: A
COMPARISON OF CANADA AND THE UNITED STATES.

A Senior Honors Thesis

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By

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ABSTRACT

This project investigates the use of cigarette package warning labels and public service announcements in Canada and the United States to prevent and reduce cigarette use. The purpose of doing so is to evaluate which country's approach is more successful and to discover how to improve upon the current strategies. When cigarette warning labels and public service announcements share common themes and images, they have the potential to be more powerful in reducing and preventing cigarette use. Canada has successfully used an integrated approach in these areas of health communication. Further, in 2000, Canada took major steps in tobacco control by introducing 16 full-color graphic warning labels. These unique warnings consist of graphic images and use fear appeals. Research in Canada has suggested that the warnings are successfully encouraging smoking cessation among adults. However, there has been limited research addressing the effects these fear appeals may be having on adolescents. Interestingly, research on message framing and prospect theory has suggested that when dealing with the issues of smoking cessation and prevention, anti-smoking messages should actually be more successful if they are framed in terms of gains rather than losses.

In order to test this theory on adolescents, the opinions of 210 American high school students were measured regarding the message framing of warning labels. Although theory and previous research suggested that gain-framed messages would more

effectively influence adolescents' smoking related attitudes and behaviors toward that of prevention and cessation, one of the loss-framed messages currently being used in Canada was perceived as more effective, resulted in more favorable opinions of the warnings and led to stronger intentions to not smoke than the gain-framed warnings. By using two actual Canadian warning labels, this study gained some important insight on the effectiveness of the fear appeals among young people. This research is also valuable because no researcher has compared the use of gain-framed or loss-framed warning labels on adolescents. Additionally, this project addresses an important political issue. Since 1985, the U.S. has been using the same four text-based warning labels. These labels are worn out and have likely lost their intended effect. The U.S. has clearly fallen behind in this area of tobacco control.

Dedicated to mom, dad and Steve

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CHAPTER 1

INTRODUCTION

1.1. The Cigarette Problem in Canada and the United States

"It is now widely recognized that the cigarette is the only readily available consumer product, which, when used regularly, as intended, results in death in one out of two cases" (Studlar, 2002, p.18).

For decades, governmental leaders in Canada and the United States have been aware of the health risks associated with smoking cigarettes. However, it was not until the 1964 Report to the Advisory Committee of the United States' Surgeon General that both governments began enacting new tobacco control policies. The dangers of smoking cigarettes gained the attention and concern of the public even earlier. This awareness resulted from an article published by *Reader's Digest* in December of 1952, titled, "Cancer by the Carton" (Studlar, 2002). Although tobacco use has been a point of concern for over 50 years, it remains a significant problem in Canada and the United States.

Tobacco use is the leading cause of preventable disease and death in both the United States and Canada (Alberta Alcohol and Drug Abuse Commission, 2004a; Cecil, Evans and Stanley, 1996; Peracchio and Luna, 1999; Studlar, 2002; U.S. Department of Health and Human Services, 1994). Furthermore, tobacco use accounts for approximately 20 percent or more of the total number of deaths in both countries

annually (Studlar, 2002). Over 80 percent of these deaths are caused by lung cancer, which is the number one cancer killer in the United States and Canada among both men and women (American Cancer Society, 2003; Canadian Cancer Society, 2005). Statistics in Canada show that tobacco use causes addiction and premature death in about half of its users. It is also responsible for more deaths than those caused by motor vehicles, suicide, murder, alcohol and AIDS *combined* (Mahood, 1999).

Cigarette smoke not only has detrimental effects on its users, but it also has a negative impact on every individual in American and Canadian societies. Second-hand smoke is a primary issue of concern in both countries. According to the U.S. Centers for Disease Control and Prevention, second-hand smoke contains over 250 chemicals known to be toxins or carcinogens (Centers for Disease Control and Prevention, 2004b). This year, at least 45,000 smokers in Canada will die prematurely from smoking cigarettes. At least 1,000 of these individuals will be non-smokers killed by second-hand smoke. It is estimated that in 2001, 800,000 Canadian children under 12 years of age were exposed to second-hand smoke in their homes. These children are at least 50 percent more likely to suffer from damage to their lungs and future breathing problems. Furthermore, exposure to second-hand smoke increases a non-smoker's risk of heart disease and lung cancer by 20 percent (Health Canada, 2004d). In the United States, exposure to second-hand smoke is widespread. A study conducted by the U.S. Centers for Disease Control and Prevention showed that nearly nine out of 10 non-smokers are exposed to second-hand smoke. These results were acquired from measurements of cotinine in the blood of over 10,000 participants. Cotinine is a chemical in the body that metabolizes from nicotine

(Pirkle, Flegal, Bernert, Brody, Etzel, and Maurer, 1996). Although this study did not address the health effects of second-hand smoke, a previous study showed that it caused lung cancer in non-smoking adults and serious respiratory problems in children (Centers for Disease Control and Prevention, 2005).

In addition to concerns about the dangers of second-hand smoke, cigarette use also increases government spending, contributes to a loss of productivity and leads to rising health-care costs. Health Canada, the Canadian federal department responsible for maintaining and improving health in Canada, estimates that in 1993 alone, the societal costs attributed to smoking were $11 billion. Of this amount, approximately $3 billion was spent on health-care costs, including hospitalization and physician time. The remaining $8 billion was attributed to the lost productivity of smoking workers (Health Canada, 2002b). It is estimated that from 1995-1999, tobacco use in the United States was responsible for economic costs of over $157 billion. Approximately $75 billion was spent on direct medical care for adults, $366 million on neonatal care and $82 billion was attributed to lost productivity (U.S. Department of Health and Human Services, 2004).

On a more positive note, Canada and the United States have made some progress in the battle against smoking considering that the number of adult smokers in both countries has been on the decline since the mid-1980s (Health Canada, 2002a; Peracchio and Luna, 1999). It is assumed that adults have been quitting in larger numbers because they have become increasingly aware of the health hazards of smoking and have taken action to avoid those consequences (Peracchio and Luna, 1999). However, on the negative side, the number of adolescent smokers has been increasing—resulting in what

the U.S. Food and Drug Administration (FDA) has termed a "pediatric disease" (Crawford, Balch and Mermeistein, 2002; Peracchio and Luna, 1999; U.S. Department of Health and Human Services, 1994). As a result, it is essential that campaigns addressing youth and tobacco use continue to be a presence in the media. Additionally, it is important that cigarette package warning labels target adolescents with relevant messages. However, as will be discussed in chapter two, it is important to understand the psychology of adolescents in order to effectively reach them. Given the above information, it is crucial to understand why adolescents may use cigarettes and to examine the potential effectiveness of anti-smoking campaigns and cigarette warning labels targeting youth.

1.2. Goals and Direction of this Project

This project addresses the use of anti-smoking messages in public service announcements and cigarette package warning labels. The former is of interest due to its ability to reach large audiences through various means (i.e. print, radio, television, and Internet). The latter plays an important role because its messages can be received at the point of purchase and during smoking behavior. When public service announcements and cigarette warning labels share common themes and images, they have the potential to be more powerful in reducing and preventing cigarette use (Strahan, White, Fong, Fabrigar, Zanna, and Cameron, 2002). Although the use of taxation, community anti-smoking programs and support groups each play a role in reducing cigarette use, the primary focus of this project is on the use of anti-smoking mass media messages and

cigarette package warning labels. This project also emphasizes the importance of creating messages that target adolescents and adults as two distinct groups. It is insufficient to create general anti-smoking messages that attempt to reach non-targeted groups.

The primary goal in completing this project is to identify the message content of effective persuasive communication, while taking into account individual differences such as age and smoking behavior. The strategies used in Canada and the United States are compared because it is believed that Canada has been more successful in creating and implementing cigarette package warning labels and public service announcements. However, it is necessary for Canada to continue to investigating alternative strategies that may be more effective among certain individuals than the ones currently being used.

Although the comparison of the two countries primarily addresses cigarette package warning labels, public service announcements are discussed for two main reasons. First, the Government of Canada has attempted to integrate the messages in its warning labels and public service announcements and research suggests that this may be an effective strategy. Second, the theoretical framework that guides us in developing public service announcements can and should be used to develop warning labels and vice versa. Although the presentation of these two types of messages drastically differs, their message components are markedly similar. Accordingly, the emphasis of this thesis is on the message design of persuasive anti-smoking messages.

The first chapter of the thesis is a historical and political overview of the cigarette problem in Canada and the United States. The second chapter is a discussion of the

distinctive characteristics of adolescents. Members of this group have unique characteristics that should be taken into consideration when designing anti-smoking messages. Additionally, adolescents have often been overlooked as potential target audiences for cigarette package warning labels. This is problematic because adolescents are the only group that continues to adopt smoking in large numbers. The third chapter is a discussion of the theoretical framework that can help us to understand why anti-smoking messages succeed or fail. The theories mentioned in this section are not specific to adolescents and can be applied to other groups, including adults. The fourth chapter is a comparison of the message content in American and Canadian cigarette package warning labels. It is based on the theories and concepts previously discussed. The purpose in doing so is to evaluate if the two governments are following the suggestions contained in the literature. This chapter ends with a discussion of some research showing the success of Canada's graphic cigarette warning labels.

In the final chapter of the thesis, we have conducted a study measuring the opinions of high school students regarding cigarette package warning labels. The primary purpose of this study is to evaluate the effects of loss-framed messages (particularly fear appeals) on adolescents. Many researchers agree that health-related fear appeals should generally be avoided in persuasive messages targeting adolescents, yet Canada and the United States both use these kinds of loss-framed messages. The study is based on the overall expectation that gain-framed warning labels are more likely than loss-framed warning labels to have a positive influence on adolescents' smoking-related attitudes and behavioral intentions. A goal in completing this study was to identify the

most successful way to persuade adolescents to not smoke through cigarette warning labels.

1.3. Cigarette Legislation and Warning Labels in the United States and Canada

Studlar (2002) argues that the United States was the world leader in tobacco control from 1964-1984. This position of leadership began with the 1964 Report to the Advisory Committee of the United States' Surgeon General, which stated that "cigarette smoking is a health hazard of sufficient importance in the United States to warrant remedial action…[it] is causally related to lung cancer in men" (Studlar, 2002, p.36; U.S. Department of Health, Education and Welfare, 1964, p. 33, p. 37). In response, Congress passed the 1965 Cigarette Labeling and Advertising Act, which required the placement of warning labels on cigarette packages. The purpose of these warnings was to target smokers and alert them about the hazards of smoking cigarettes. However, the warnings were inadequate and in 1967, The Federal Trade Commission (FTC) announced that there was no evidence that they had an effect (Studlar, 2002). In 1984, the U.S. addressed this concern and passed the Comprehensive Smoking Education Act of 1984. This act required four new stronger warning labels and obligated manufacturers to provide a list of cigarette ingredients to the U.S. Centers for Disease Control and Prevention. In 1998, another major event in U.S. tobacco control occurred when Congress passed the Master Settlement Agreement (MSA). Although the MSA was a great step against tobacco in the United States, it was a significantly weaker version of the National Settlement, which was attempted in 1997-1998, but failed in Congress.   An

important aspect of the MSA is that it requires tobacco companies to pay U.S. $206 billion over 25 years to 40 states to cover the health-care costs of ill smokers on Medicaid and a total of $41 billion combined to Texas, Florida, Mississippi and Minnesota. Additionally, tobacco companies must provide $1.45 billion nationwide to fund anti-smoking campaigns for 10 years (Studlar, 2002). Unfortunately, the success of the MSA has been limited because much of the money awarded to the states has not gone toward fighting tobacco or even toward other public health issues (Yellin, 2004).

Studlar (2002) argues that from 1984-1994, Canada took the leading role in tobacco control policy. A notable step taken by the Government of Canada was the passage of the Tobacco Products Control Act (TPCA) in 1988. The act prohibited all advertising and special promotions of tobacco products in Canada. Additionally, it mandated health warnings and a list of toxic ingredients on cigarette packages. In 1994, Canada took another significant step with the passage of the Tobacco Control Act in Ontario. At that time, it was the most thorough provincial/state tobacco-control act in North America (Studlar, 2002). In 2000, Canada took ground-breaking actions in cigarette-control with the introduction of 16 full-color graphic warning labels. These labels take up 50 percent of the package (front and back in English and French) and include additional information about smoking on the interior (Studlar, 2002). The design of Canada's warning labels was supported by research showing that message enhancing images, larger warnings and more emotional content on cigarette packages can potentially encourage more smokers to quit and prevent more non-smokers from adopting smoking (Liefeld, 1999). Furthermore, they were created in response to research

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showing that smokers wanted "larger warnings with pictures, colour and

graphics…tough, frank messages outside and inside the package" (Mahood, 1999, p.

356). Additionally, in 2001 the Federal Tobacco Control Strategy was passed, providing

funding for smoking prevention, cessation, protection and harm reduction (Studlar,

2002).

CHAPTER 2

ADOLESCENTS

2.1 Cigarette Use and Adolescents

2.1.1. Adolescent Smoking Statistics

Children and adolescents have generally been the focus of anti-smoking campaigns—and rightly so, considering that they are the only group in both Canada and the United States that continues to take up smoking in large numbers (Alberta Alcohol and Drug Abuse Commission, 2004b; Cecil et al., 1996; Peracchio and Luna, 1999). Furthermore, since the early 1990s, the number of youth smokers has been increasing in both countries (Alberta Alcohol and Drug Abuse Commission, 2004b; Stanton and Smith, 2002). Since most adolescents are exposed to various types of anti-smoking messages (e.g. from the media, school, community and family), it is somewhat puzzling that they continue to adopt smoking. A survey conducted by Stats Canada provides some indication as to why young people continue to smoke. The study shows that 70 percent of Canadian adolescents believe that pressure from peers is the number one reason why they began smoking (Alberta Alcohol and Drug Abuse Commission, 2004b). Accordingly, it appears as though peer pressure continues to have a strong influence on adolescent smoking initiation.

The fact that adolescents are still being attracted to cigarettes is extremely troublesome. The FDA estimates that approximately 3000 American children and teenagers begin smoking each day and that at least 1000 of these individuals will eventually die from tobacco-related illnesses (Hawkins and Hane, 2000; Peracchio and Luna, 1999). Additionally, nine out of 10 smokers begin during their teenage years and the average age of smoking initiation has recently dropped to about 12 ½ years of age (Peracchio and Luna, 1999). However, on a positive note, if children and adolescents resist tobacco while they are young, it is highly unlikely that they will begin smoking as adults (Silver, 2001; U.S. Department of Health and Human Services, 1994). Accordingly, a major goal among health practitioners and campaign designers is to prevent young people from initiating smoking behavior.

2.1.2. Characteristics of Adolescent Smokers

When children enter adolescence, they are often searching to develop their identity. Physical, cognitive and social changes occurring at this time can lead to variation in an individual's self-image. As a result, young people may question what kind of person they would like to become. In their search for an identity, adolescents may be led toward cigarettes (Hawkins and Hane, 2000). The fact that cigarettes are still seen as desirable among some young people may contribute to this occurrence.

Research shows that there are various other factors that help predict which adolescents are likely to adopt smoking. According to Carvajal et al. (2004), these factors can either be proximal or distal. Proximal factors are usually immediate

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precursors of behavior, such as an individual's thoughts about smoking and his or her belief that the behavior can or cannot be resisted (self-efficacy). Distal factors include relatively universal influences on behavior such as depression, academic orientation, coping strategies and social support. For anti-smoking messages and programs to be most effective, they must address both proximal and distal determinants of smoking behavior (Carvajal et al., 2004). Individuals who do not intend to smoke, have strong beliefs that they can avoid smoking (high self-efficacy), have adaptive coping strategies and are low in depression, are less likely to smoke. Strong connections with school, academics and parents also reduce the likelihood that an adolescent will use cigarettes (Carvajal et al., 2004; Stanton and Smith, 2002). These conclusions are supported by Yach and Ferguson (1999), who claim that individual factors predictive of tobacco use include, "youth who struggle to find engaging and useful ways to spend their time in school" (p.758). Since those young people who are not engaged in school may have more free time, cigarettes may provide them with a risky and stimulating activity. Research also shows that youth smokers are more likely to engage in high-risk behavior such as illegal drug and alcohol use, unsafe sex and violent behavior when compared to non-smoking youth (Stanton and Smith, 2002; U.S. Department of Health and Human Services, 1994; Yach and Ferguson, 1999). The impact of other smokers on young people is also noteworthy. Research shows that adolescents exposed to siblings, parents or peers who smoke are twice as likely to be susceptible to smoking initiation (Goldberg, 2003).

2.1.3. Prevention and Cessation

The number of adolescent smokers has been on the rise in recent years. The 1995 Youth Risk and Behavior Surveillance survey indicated that 71 percent of U.S. high school students had tried smoking and that 35 percent were currently smoking. Due to these high numbers, programs addressing adolescent smoking have placed a great emphasis on prevention. Prevention is a significant issue, considering that 90 percent of smokers begin smoking during their adolescent years (Peracchio and Luna, 1999). Furthermore, if anti-smoking programs were to focus solely on prevention, the cigarette problem would eventually be solved. However, this approach is clearly flawed when it is recognized that many addicted adolescents would like to quit smoking, but have failed in their attempts to do so (Stanton and Smith, 2002).

Accordingly, although an emphasis on prevention is an important way to address the problem of adolescent smoking, it is quite problematic to overlook the issue of cessation. Stanton and Smith (2002) note, "*prevention* of adolescent smoking rather than *cessation* has received the greatest attention in research endeavors, despite the fact that the majority of adolescent smokers have made at least one serious attempt to quit" (p. 428). The authors claim that more than half (55-67 percent) of U.S. high school students who smoke have tried or intend to quit smoking (Stanton and Smith, 2002; U.S. Department of Health and Human Services, 1994). Consequently, it is clear that the issue of cessation should not be overlooked in anti-smoking campaigns addressing adolescents.

It would be beneficial to create anti-smoking messages that appeal to both non-smoking and smoking youth.

2.2. Strategies for Reaching Adolescents with Anti-Smoking Messages

2.2.1. Are Anti-Smoking Messages Targeting Adolescents Effective?

Before discussing the different message strategies that can be used to reach adolescents with anti-smoking messages, it is important to discover if media campaigns and cigarette warning labels targeting youth are effective. A report discussing the effects of ending an anti-tobacco campaign targeting Minnesota youth provides evidence that media campaigns have the potential to change smoking-related attitudes and behaviors. Beginning in 2000, a Minnesota program directed at adolescents called the "Target Market" campaign had received $23.7 million annually. In 2003, the funding was reduced to $4.6 million. A survey of Minnesota adolescents ages 12-17 years was taken after the funding cut and was compared with the results of previous studies. The results showed that awareness of the campaigns dropped from 85 percent during July and August of 2003 to 57 percent in November and December of 2003. During that time, the percentage of adolescents susceptible to cigarette use increased from 43 percent to 53 percent. Susceptibility to cigarettes was determined through a survey item stating, "you will smoke a cigarette in the next year." The results showed that following the funding cut, more adolescents agreed that they would smoke within a year. These results suggest that if anti-tobacco funding continues to decrease, youth cigarette use may begin to increase again (Centers for Disease Control and Prevention, 2004a).

Further evidence of the potential media campaigns have in reducing youth smoking-rates can be seen in a longitudinal study addressing the efficacy of a Massachusetts anti-smoking media campaign. The campaign was initiated in October of 1993 and consisted of radio, television and billboard media. Results show that exposure to the television public service announcements had a significant effect on reducing progression to smoking within four years—particularly among younger children. The campaign also successfully educated adolescents about the prevalence of youth smoking by reducing the tendency of young people to overestimate smoking prevalence (Siegel and Biener, 2000). This is important because the perceived level of smoking prevalence has a strong influence on youth smoking initiation (U.S. Department of Health and Human Services, 1994). Those who believe that smoking prevalence is high may feel more pressured to smoke (Grandpre, Alvaro, Burgoon, Miller and Hall, 2003; Siegel and Biener, 2000).

Worden, Flynn, Solomon, Secker-Walker, Badger and Carpenter (1996) assessed the efficacy of a mass media campaign targeting teenage girls who were at a heightened risk for smoking initiation. Smoking risk factors include having a positive view of smoking, finding it difficult to refuse a cigarette and overestimating smoking prevalence. The study consisted of a targeted anti-smoking media campaign and a school intervention. The school intervention was monitored for implementation and included teacher education and grade-specific educational materials about the hazards of smoking. Results show that the combination of media campaigns and a school intervention targeting eighth, ninth and tenth graders reduced weekly smoking rates by 40 percent

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when compared to students who only received the school intervention (Worden et al., 1996). These results verify research suggesting that media campaigns can be highly effective when they target specific audiences (Silver, 2001).

Research assessing the efficacy of warning labels in persuading adolescents to not smoke is somewhat limited. This may be due to the fact that the United States' warning labels do not contain information that is particularly relevant to the concerns of adolescents (Crawford et al., 2002). Moreover, it appears as though the U.S. Government has made no specific attempt to reach this group through its warning labels. Canada's warning labels faced a similar problem up until 2000, when the government launched its new graphic warning labels. The new warnings have more diverse anti-smoking messages and appear to address several concerns of adolescents (this will be discussed in greater detail in chapter 4). Overall, when compared to mass media campaigns, warning labels appear to have had less success in persuading adolescents to not smoke. However, with improvement, warning labels should have the potential for greater effects.

2.2.2. The Importance of Understanding the Adolescent Mind

In order to successfully reach adolescents, anti-smoking messages must appeal to the psychology of these individuals. A simple way to gain a better understanding of adolescents' thoughts and attitudes toward cigarettes is to collect information through surveys, focus groups and participatory activities. During the 2001-2002 school year, the Tobacco Counter-Advertising Contest for School Children in Southeast Michigan offered children the opportunity to develop their own anti-smoking messages. Students who won

the contest received a financial reward in the form of bonds. Additionally, the artwork and anti-smoking messages of the top six winners were displayed on 60 local billboards (Davis, 2003). This type of activity should be encouraged because it allows children to create relevant messages that may attract the interest of their peers.

The issue of relevancy in anti-smoking messages directed toward children is a significant problem. Crawford et al. (2002) conducted 129 focus groups in order to gain a better understanding of adolescents' attitudes of current and potential tobacco control issues. According to the results, adolescents generally agreed that anti-smoking messages should target younger children who have not yet made decisions about smoking. This information corresponds with the findings of other researchers, who claim that campaigns should begin targeting children when they are under the age of 12, since the majority of these individuals will not have commenced smoking (Backer, Rogers and Sopory, 1992; Peracchio and Luna, 1999).

Cigarette package warning labels face a significant problem of irrelevancy. When asked to discuss and critique U.S. warning labels, adolescents stated that they did not find them "informative, impressive or relevant" (Crawford et al., 2002, p. 16). Adolescents generally find the warnings to be irrelevant because in their young age, they feel protected from contracting tobacco-related illnesses (Crawford et al., 2002; Grandpre et al., 2003; Strahan et al., 2002; U.S. Department of Health and Human Services, 1994). The adolescents also expressed feelings that they would easily be able to quit before they reached old age. Members of the focus group suggested that future warnings be "direct, realistic, factual and strong" (Crawford et al., 2002, p. 17). They felt that the statement

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"smoking may kill you," was inadequate and suggested replacing the word "may" with "will" (Crawford et al., 2002, p. 17). Additionally, they felt that the warnings should be more visible, graphic and should provide information about the short-term effects of smoking. Since adolescents generally feel protected from developing tobacco-related illnesses, participants of the focus group believed that warning labels discussing the immediate effects of smoking would be more relevant. Some effects mentioned were the unpleasant smell of cigarettes and the discoloration of teeth (Crawford et al., 2002). This study offers valuable information, suggesting that Canada and the United States should create warning labels and anti-smoking messages that are more relevant to the concerns of young people.

Although adolescents generally find the messages in warning labels to be irrelevant, they tend to highly agree with their validity. Believability is the highest among non-smokers, who tend to be more aware of the health-risks associated with smoking (Cecil et al., 1996). The fact that they are highly aware of the hazards of smoking may be the reason why they do not smoke. Additionally, current adolescent smokers are likely to indicate less belief in the messages than ex-smokers. Thus, it is suggested that that an attitude change concerning the dangers of smoking accompanies the behavior of quitting (Cecil et al., 1996). Furthermore, adolescents who smoke and have the most exposure to the warning labels are least likely to believe in their validity. An explanation for the lack of belief is that the labels are worn out and have become cliché (Cecil et al., 1996). It is possible that through overuse, the warnings have lost their intended meaning and significance. This is not surprising, considering that the U.S. has

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not changed its four warning labels since they were introduced in the Comprehensive

Smoking Education Act of 1984. This research offers evidence that adolescents may be

particularly vulnerable to the overexposure problem of anti-smoking messages.

Accordingly, Canada and the United States should attempt to frequently introduce new

warning labels and public services announcements targeting adolescents.

2.2.3. Adolescents and Reactance

It is critical that we take into consideration the effects that anti-smoking messages

may have on current smokers. Adolescent smokers generally dislike anti-smoking

messages and as a result, they tend to ignore them or interpret them negatively.

Threatening information can lead adolescent smokers to create defensive biases, resulting

in a strengthening of their initial pro-smoking attitudes. Repeated exposure to these

messages can encourage defensive reactions (Agostinelli and Grube, 2003). Anti-

smoking messages that are judgmental with few facts are less effective in leading

smokers to believe that their smoking behavior is a problem. This is a major concern

because smokers are at the highest risk and are more likely to selectively process the

message than non-smokers. However, the likelihood of this occurring can be reduced by

creating anti-smoking messages with appealing styles. Research has shown that young

people tend to pay attention to and agree with advertisements that they enjoy. Therefore,

it is assumed that the use of humor, music and lifestyle images that attract young people

will impact attention and liking of anti-smoking messages. Messages containing these

components may offset defensive reactions from smokers (Agostinelli and Grube, 2003).

According to the theory of psychological reactance (Brehm, 1966), messages with persuasive components can pose as a threat to an individual's freedom. The theory predicts that when a person's freedom is threatened by a recommended attitude or behavior, he or she will be motivated to return to the threatened freedom. In order to restore control, that individual may engage in the forbidden behavior or change his or her attitude in favor of it. When children reach adolescence, they begin to express the need for attitudinal freedom and their acceptance of messages from adults decreases. It is assumed that the level of reactance peaks during adolescence due to the increasing desire for independence, freedom and individuality (Grandpre et al., 2003).

The theory of psychological reactance assumes that those who are aware that they are being persuaded will be less persuadable. Accordingly, if the persuasive intent of a message is less explicit, the participant will be more receptive (Grandpre et al., 2003; Petty and Cacioppo, 1986). Grandpre et al. (2003) tested this theory and found that reactance to anti-smoking messages was highest when students were around the 10th grade. The researchers recommend that anti-smoking messages targeting adolescents contain implicit persuasive messages. Furthermore, the messages should be intriguing and attention-getting in order to stimulate thought. By giving adolescents the freedom to consider their health choices, their final decision may feel as though it is self-initiated (Grandpre et al., 2003).

2.2.4. Sensation Seekers

When developing anti-smoking messages targeting adolescents, the characteristic of "sensation-seeking" should be addressed. Sensation seeking is a personality trait common among adolescents, which is associated with the need for unique, complex, uncertain and emotionally intense stimuli—and the willingness to take risks to acquire such stimulation. Individuals who are high in sensation seeking are at a heightened risk for drug and tobacco use at an early onset (Palmgreen, Donohew, Lorch, Hoyle and Stephenson, 2001). Palmgreen et al. (2001) used these principles to develop anti-marijuana television public service announcements targeting sensation-seeking adolescents. The campaign used teenage actors and consisted of high-sensation characteristics such as drama, novelty, surprise and a strong emotional appeal. All of the campaigns were successful and resulted in a significant decline in marijuana use among high sensation-seeking adolescents. Accordingly, it may be beneficial to incorporate high-sensation characteristics in anti-smoking messages targeting adolescents.

2.2.5. Concepts and Lessons from Advertising

Researchers have also developed strategies for reaching adolescents with anti-smoking messages based on concepts and lessons learned from advertising. Many researchers agree that anti-smoking messages targeting adolescents should promote awareness of the strategies used by tobacco advertisers to attract young people (Agostinelli and Grube, 2003; Hawkins and Hane, 2000; Strahan et al., 2002). These strategies include the use of exceptionally attractive models, beautiful settings, sexuality

and exciting activities. Cigarette advertisements also strive to associate feelings of sexual

attractiveness, wealth, travel to beautiful settings, exciting activities and freedom from

stress with smoking cigarettes. All of these aspects appeal to an adolescent's need for

love, acceptance, sexuality, identity and success. As a result, it is recommended that anti-

smoking messages include information that will help adolescents reject the rewards of

smoking as depicted in advertisements (Hawkins and Hane, 2000). It is also suggested

that anti-smoking messages targeting high-risk youth use peer models instead of celebrity

adults because some young people may view any adult representative with skepticism.

Finally, it is crucial that message designers use advertising techniques to create messages

addressing themes that are important in the development of adolescent identity, including

freedom, independence and acceptance from peers (Backer, Rogers and Sopory, 1992).

For example, an effective anti-smoking message could suggest that smoking results in

peer rejection. It is also important that messages emphasize adolescents' freedom to

choose to not smoke. By encouraging young people to believe that the decision is their

own, they are more likely to feel independent and empowered (Backer, Rogers and

Sopory, 1992).

A study conducted by Waiters, Treno and Grube (2001) assessing what

adolescents like and dislike about beer commercials offers evidence as to what kinds of

messages young people would like to see in anti-smoking public service announcements

and cigarette warning labels. Results of focus groups showed that the adolescents

generally enjoyed animals, humor, music and special effects. More specifically, they

liked animals with human characteristics because they were cute and humorous. Other

researchers agree that music, humor and lifestyle images are particularly useful in increasing adolescents' liking of advertisements (Agostinelli and Grube, 2003; Backer, Rogers and Sopory, 1992). The most common aspect that the young people in the focus groups disliked about advertisements was product-centeredness (Waiters et al., 2001). This means that the advertisement discussed the characteristics and benefits of the product, but failed to address the viewer's needs and wants. This study provides evidence that anti-smoking messages consisting solely of factual information may be insufficient. The creators of these messages should use some of the same techniques that advertisers use to inform and entertain their audiences. Adolescents are not simply looking to be informed about the dangers of smoking, thus, it is important that the creators of anti-smoking messages seek to entertain their audiences as well. Some campaign designers have taken an entertainment-education approach to inform people about topics such as sexual responsibility, family planning and female equality. Through this method, messages are presented in the form of entertainment through radio or television soap operas. This strategy can also be used to influence scriptwriters to include health education topics in their programs (Backer, Rogers, Sopory, 1992).

2.2.6. Additional Strategies

The following two studies address smoking among adult populations. Although these studies did not use adolescent subjects, the information obtained from this research is valuable and should be taken into consideration when developing anti-smoking messages targeting young people. Research has shown that the combination of mass-

media and community-wide programs can be particularly useful in reducing smoking

levels. A study conducted by McAlister, Morrison, Hu, Meshack, Ramirez, Gallion et al.

(2004) shows that media-campaigns alone are not always sufficient in helping individuals

quit smoking. In their study conducted in Texas, the researchers used media messages

that encouraged the use of quitting assistance programs such as the American Cancer

Society's "Smoker's Quitline." They also encouraged local counseling services and

interpersonal communication between smokers and their healthcare providers. Results of

the study show that the combination of mass-media messages and community support

programs can double the success rate of an anti-smoking program targeting adults. The

areas with the highest levels of success received the most intense mass-media campaigns

and cessation programs (McAlister et al., 2004). An important lesson from this research

is that anti-smoking messages may be more effective among certain audiences if they

inform smokers of programs available in their community. Rather than using a *direct*

pathway and attempting to immediately persuade the individual to quit smoking, it may

be more beneficial to use a *socially mediated pathway* and persuade him or her to

participate in a community program (Bandura, 2004). This approach may be useful

among adolescents who are heavily addicted to cigarettes. Those with strong addictions

often require social support in order to successfully quit (U.S. Department of Health and

Human Services, 2000).

In addition to the combination of community programs and mass media messages,

the combination of taxation and mass media can also successfully reduce smoking levels.

Results of a 1995 study in California show that the combination of state and federal taxes

with anti-smoking media campaigns significantly reduced smoking levels. Furthermore, it shows that the use of taxation and mass-media campaigns have a synergistic effect. For example, taxation alone reduced cigarette sales by 819 million packs and the media campaign reduced sales by 232 million packs (total 1.05 billion). When looking at the combined effect of taxation and the media campaigns, results show that it reduced sales by 1.56 billion. It is important to note that this study does not prove that taxation alone is inherently more effective than the use of media campaigns. If the level of taxation had been reduced or the media campaign expenditures had been increased, the results would have been different (Hu, Sung and Keeler, 1995). Although this project does not focus on the use of taxation to prevent and reduce smoking, this example is worth mentioning because it illustrates the importance of using multiple approaches to address the problem of smoking. It is also important to emphasize the synergistic effect that may result from combining health communication with other tobacco control strategies.

CHAPTER 3

THEORETICAL FRAMEWORK OF AN EFFECTIVE ANTI-SMOKING MESSAGE

3.1. Overview

This chapter contains a theoretical framework of an effective anti-smoking message. It is a review of the major concepts found in the literature in the areas of communication, social psychology and social marketing. This chapter deals solely with message design and does not address presentation issues. Accordingly, the information in this section is applicable to both public service announcements and cigarette package warning labels.

3.2. Theories of Communication and Social Psychology

3.2.1. Message Framing

Health-related messages can either focus on the negative consequences of continuing or adopting a behavior (loss-framed), or they can focus on the positive aspects of abstaining from a behavior (gain-framed). Although loss-framed messages may attract attention, their effectiveness in persuading individuals to not smoke is not well understood. According to prospect theory (Tversky and Kahneman, 1981), when people focus on potential gains, they are not motivated to take risks or face uncertainty. Rather, they choose a definite gain over a potentially uncertain gain. However, when focusing on

a loss, people are more likely to accept risk and uncertainty when the risk includes the possibility of avoiding a loss. When looking at health issues, early detection behaviors, such as breast self-examinations or HIV testing can be associated with high levels of risk. These risks include the possibility of discovering that one is ill. On the other hand, prevention behaviors such as avoiding smoking are associated with considerably certain outcomes, including a decreased risk for illness (Rothman and Salovey, 1997; Schneider, Salovey, Pallonen, Mundorf, Smith and Steward, 2001). As a result, anti-smoking messages should be more successful if they are framed in terms of gains rather than losses (Rothman and Salovey, 1997; Salovey, Schneider and Apanovitch, 2002; Schneider et al., 2001; Strahan et al., 2002). Considering this evidence, it is somewhat surprising that the majority of warning labels and anti-smoking campaigns focus almost exclusively on the use of loss-framed messages (Strahan et al., 2002).

Schneider et al. (2001) conducted a study measuring the effects of visual and auditory message framing on smoking behavior. Visual messages with positive images were defined as gain-framed and negative images were defined as loss-framed. The audio message, "If you quit, you'll look and feel better right away," was defined as gain-framed, while "If you don't quit, you won't look and smell better" was loss-framed. In this study, visual and audio framing manipulations were easily noticed by participants—especially those who were smokers. Results show that the gain-framed audio track led to greater acceptance of a message claiming that there were benefits of not smoking regardless of a person's smoking status. Additionally, non-smokers exposed to the consistently gain-framed message indicated that they felt less tempted to smoke in peer

situations. Smokers exposed to the visual or audio gain-framed messages also benefited

and showed a decrease in their monthly smoking behavior within six weeks. When

compared to loss-framed messages, gain-framed messages (visual or auditory)

significantly shifted smoking-related beliefs, attitudes and behavior toward health and

illness prevention. Accordingly, some researchers argue that in order to be most

persuasive, anti-smoking messages should focus on the benefits of cessation and

abstention, rather than on the negative consequences of smoking (Schneider et al., 2001).

Maheswaran and Meyers-Levy (1990) conducted a study evaluating if the effect

of message framing is constant regardless of an individual's involvement with the issue.

This research took into consideration models of persuasion, suggesting that individuals

who are highly involved with a subject are likely to process messages in detail. Results

showed that when issue involvement was low, people refrained from processing the

message in detail. When involvement was high, people processed the message in detail

and integrated issue-relevant information into their attitudes. The researchers also

discovered that negatively-framed appeals can be highly persuasive only if the individual

receiving the message is highly involved with the issue. When issue involvement is low,

gain-framed messages will be more effective. Since people are frequently over-

optimistic in evaluating their susceptibility to health-risks, they tend to have low

involvement in health-related issues (Maheswaran and Meyers-Levy, 1990). As a result,

it may be safer to use gain-framed messages and assume that the receivers of anti-

smoking message have low issue involvement.

3.2.2. Fear-Appeals

A particular type of loss-framed message is one that uses a fear appeal. A fear appeal is a persuasive message that attempts to scare people by describing frightening things that may happen to them if they do not follow the recommendations provided in the message. Fear appeals often contain shocking and dreadful language or images. They also tend to use personalistic language (e.g. "smokers like you") (Witte, 1992). Witte (1992) says that when people encounter a fear appeal, they evaluate the perceived threat, which is a combination of the individual's perceived severity and perceived susceptibility. Perceived severity refers to one's beliefs about the magnitude of the risk and perceived susceptibility refers to one's beliefs about the likelihood of being affected. If this evaluation results in moderate to high perceived threat, then fear is induced and the individual is motivated to evaluate the efficacy of the recommended action. The efficacy component includes two variables: self-efficacy and response efficacy. Self-efficacy refers to one's belief that he or she can avoid the threat by following the recommended action, while response efficacy is one's beliefs regarding the effectiveness of recommended action. When both perceived threat and perceived efficacy are high, the danger control process begins. Through this process, individuals are motivated to control the danger and therefore begin to think of ways to avoid the threat. Conversely, when perceived fear is high and perceived efficacy is low, the fear control process begins. When individuals believe that they cannot avoid the perceived threat, their fear is intensified and they become motivated to cope with their fear through maladaptive means, such as denial (see figure 3.1) (Thesenvitz, 2000; Witte, 1992; Roberto, Meyer,

Johnson and Atkin, 2000). From Witte's model, it is clear that anti-smoking messages using fear appeals must contain strong messages of efficacy. In other words, once the fearful aspect of the message is presented, it must be followed up with clear directions as to how the person can avoid the threat. Most anti-smoking messages are loss-framed and use fear appeals. Although some research suggests that this should be avoided, the effectiveness of the messages can be greatly improved if they are combined with gain-framed messages (e.g. that quitting is possible) and if they give the message receiver information about how to quit (Strahan et al., 2002).

When using fear appeals, it is important to note that fear is not a universal dimension. Personal characteristics and life situations influence how fear is perceived. For example, self-esteem has been shown to be negatively related to the level of expressed fear. It has also been concluded that those with strong coping skills receive fear appeals better than those who tend to avoid fear. Furthermore, research has shown that the effect of a fear appeal differs when it is viewed on a segment-by-segment basis. It is recommended that target audiences of a fear appeal be segmented by demographic and/or psychographic characteristics in order to be most effective (Burnett and Oliver, 1979).

Many researchers agree that when creating anti-smoking messages targeting children and adolescents, messages using fear appeals should generally be avoided. A major point of concern in the use of fear appeals targeting youth is that the messages will create a "dare" reaction. Although it is recommended that strong fear appeals be completely avoided, moderate appeals combined with positive messages can serve as a
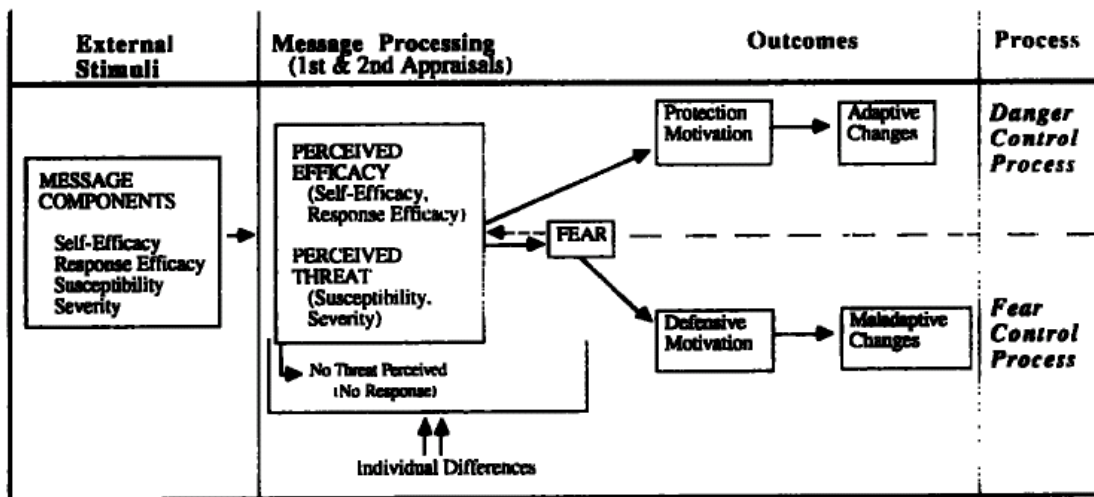
Figure 3.1: The Extended Parallel Process Model (Witte,1992).

reminder of the negative consequences of smoking. When used carefully, there are several other ways in which fear appeals targeting adolescents can be successful. For example, although fear appeals based on the risk of injury or death are generally not effective with adolescents, the fear of rejection, social embarrassment and fear of being caught by parents all have the potential for greater effects. Fear appeals based on the present threat of smoking, such as the bad smell, are more likely to be successful than those appealing to future threats, such as cancer or death (Backer, Rogers and Sopory, 1992).

3.2.3. Self-Efficacy

When using a fear appeal, it is essential to incorporate a strong efficacy message that provides information about how the threat being emphasized can be avoided (Flay and Burton, 1990; Strahan et al., 2002; Witte, 1992). As described by Witte (1992), self-efficacy plays a significant role in determining if a person will process a fear appeal adaptively by moving into the danger control process. Self-efficacy also plays a vital role in determining an individual's level of incentive and accomplishment (Bandura, 1992).

Beliefs of self-efficacy influence how people think and act. There is consistent evidence showing that an individual's perceived self-efficacy contributes significantly to his or her level of motivation and performance attainment (Bandura, 1992; Schwarzer, 1992; Strahan et al., 2002). For example, Collins (1985) selected children who judged themselves to be of high or low mathematical efficacy and gave them difficult problems to solve. Those who regarded themselves as high in self-efficacy solved more problems,

re-worked more of those they failed and were more accurate than those of equal ability who doubted their efficacy. This study shows that perceived self-efficacy has a significant effect on performance. Additionally, it shows that self-efficacy can play a larger role in determining success than actual ability (Bandura, 1992). Other research has demonstrated that smokers who are high in self-efficacy have a better chance of success because they are more likely to enter treatment to quit smoking (Strahan et al., 2002).

Research also shows that as individuals' beliefs in their coping efficacy increases, they approach situations with more confidence and make better use of their skills (Bandura, 1992). This has particular relevance to smokers who may be attempting to quit. If these individuals have confidence in their ability to do so, they are more likely to succeed. Furthermore, as perceived self-efficacy increases, a person's goals and commitment to them also increase. Those with high levels of self-efficacy tend to visualize success situations, providing positive direction for their performance. They are able to do so because they generally do not focus on apprehensive thoughts. Efficacious individuals are also more likely to have a high sense of social efficacy due to their tendency to build social supports for themselves. These supports are important because they reduce an individual's vulnerability to depression and can provide incentive and motivation. Conversely, those who view themselves as inefficacious tend to visualize failure situations and become maladaptive by dwelling on how they may fail (Bandura, 1992; Bandura, 2004). They are also unlikely to develop strong intentions to engage in the new behavior, even if they have favorable attitudes toward it and believe that significant others would approve of their decision to do so (Schwarzer, 1992).

Furthermore, when these individuals do not believe that they can handle the threat, they experience high levels of anxiety, which impairs their level of functioning (Bandura, 1992).

Even when an individual has a strong sense of self-efficacy, it is essential that those beliefs are continually reinforced because self-doubts can set in quickly after failure. However, in order to succeed, one must also have a perseverant effort and a vigorous sense of self-efficacy (Bandura, 1992). For example, when smokers fail in their attempts to quit, they may lose their sense of efficacy and return to their smoking behavior. Accordingly, it is essential that anti-smoking messages continually remind smokers why they made the decision to quit and that they also reinforce feelings of efficacy.

Schwarzer (1992) argues that the likelihood that people will change a harmful health behavior (such as quitting smoking) may depend on three cognitions: (a) the belief that the behavior is detrimental, (b) the belief that a change in behavior will reduce the threat and (c) the belief that they have the ability to implement the positive behavior and abandon the negative one (self-efficacy). Individuals also depend on outcome expectancies. When looking at the issue of smoking, a positive outcome expectancy would be the belief that by quitting, one could greatly improve his or her health. On the other hand, self-efficacy expectancies are the beliefs that one has the skills needed to resist the threat (i.e. the ability to quit smoking). Self-efficacy expectancies appear to be the strongest factor influencing a person's intention to change a behavior. They are followed in importance by outcome expectancies (Schwarzer, 1992).

Self-efficacy expectancies play a significant role in predicting adolescents' intentions to smoke. De Vries, Dijkstra and Kuhlman (1988) conducted a study using 85 Dutch students in a secondary school. They assessed attitudes, subjective norms and intentions to smoke cigarettes. Results showed that smokers and non-smokers exhibited different opinions with regard to their self-efficacy expectations. When compared to non-smokers, smokers found it more difficult to (a) not smoke when friends were smoking, (b) to think of a reason to refuse a cigarette and (c) to explain why they did not want to smoke. The study also showed that self-efficacy, separate from attitude and subjective norms, is a major determinant of behavioral intentions. Although non-smokers had higher levels of self-efficacy in almost all situations, the researchers suggested that anti-smoking messages attempt to increase self-efficacy expectations in non-smokers in order to improve their chances of maintaining their behavior (De Vries, Dijkstra, Kuhlman, 1988).

3.2.4. Cognitive Dissonance

The theory of cognitive dissonance states that the existence of dissonance is psychologically uncomfortable and its presence motivates people to try to reduce it and achieve consonance. In addition to trying to reduce dissonance, a person experiencing such discomfort will avoid situations and information that contribute to the uncomfortable feelings. Festinger (1957) states, "two elements are dissonant if, for one reason or another, they do not fit together. They may be inconsistent or contradictory, culture or group standards may dictate that they do not fit, and so on" (p. 12-13). For

example, smokers who believe that their behavior is detrimental to their health, but continue to smoke, are likely to be experiencing dissonance. When faced with feelings of dissonance, people seek to reduce it through several means. They may attempt to change their behavior, change their cognition, expose themselves to new information and opinions or simply ignore the dissonance. It is also important to note that as the strength of the dissonance increases, the pressure to reduce it rises as well (Festinger, 1957).

When applying this theory to persuasion, the persuader can attempt to produce feelings of dissonance in the message receiver and then offer recommendations, that if followed, will reduce or eliminate the dissonance. Incorporating elements of cognitive dissonance into anti-smoking messages is quite simple. For example, messages that make smokers aware that their beliefs about the health hazards of smoking and their behavior of continuing to smoke are contradictory may motivate them to quit. Therefore, it is suggested that anti-smoking messages be used as hypocrisy manipulation (Strahan et al., 2002).

After people make decisions, they actively seek information that is consonant with the action they have taken. Following the decision, there is also an increased amount of confidence in the decision. This is a product of actively decreasing dissonance. Therefore, after successfully reducing post-decisional dissonance, people generally have a difficult time reversing their decision (Festinger, 1957). This may have good implications for those who have quit smoking because the process of reducing post-decisional dissonance may discourage them from reverting back to the behavior.

Hafstad, Aaro and Langmark (1996) conducted a study assessing the effects of cognitive dissonance in anti-smoking messages targeting Norwegian adolescents. They discovered that adolescents were motivated to reduce the presence of dissonance and avoid further increases in its magnitude. As a result of the dissonance, a large percentage of smokers discussed the campaigns with others. In other words, the presence of dissonance seemed to encourage interpersonal communication. In this study, interpersonal communication among smokers was the most important predictor of positive behavioral reactions (i.e. having considered, attempted or managed to quit smoking) (Hafstad et al., 1996). These results are consistent with previous research suggesting that interpersonal influences and communication play a powerful role in adolescent smoking (Backer, Rogers, Sopory, 1992; Flay and Burton, 1990).

3.2.5. The Elaboration Likelihood Model of Persuasion

The elaboration likelihood model of persuasion states that the amount and type of persuasion that occurs is related to the audience's cognitive activity during the message presentation. According to this view, there are two routes to persuasion: central and peripheral. The central route, which results in more lasting persuasion, is a product of a person's careful and thoughtful consideration of the information presented in a persuasive message. In this route, the attitude change is relatively enduring, resistant to counter-persuasion and predictive of behavior. On the contrary, persuasion in the peripheral route is more likely to occur as a result of simple cues, such as an attractive source, pleasant music, message length or the mere number of arguments presented. These simple cues

result in change without demanding analysis of the information's true merits. When persuasion occurs in this route, it is relatively temporary, susceptible to counter-persuasion and unpredictive of behavior (Petty and Cacioppo, 1986).

When people are motivated and able to engage in issue-relevant thinking, "elaboration likelihood" is high. This means that they will be motivated to evaluate and analyze the message content using rational processes. As personal relevance to the issue increases, an individual is more likely to process the arguments presented. Since it takes a cognitive effort to process an argument, it is essential that the issue be relevant to the individual. Issue-relevant elaboration usually means that the message receiver takes the new arguments and integrates them into his or her own attitude or schema (Petty and Cacioppo, 1986).

When people are exposed to cigarette package warning labels and public service announcements, they may take the central or peripheral routes to persuasion. Accordingly, it is important that these messages include content that will influence people under various levels of elaboration. According to Strahan et al. (2002), the use of color is an effective way of reaching audiences through both the central and peripheral routes. For example, the color orange is often used to signal warning and danger. When a person is in a condition of low-elaboration, the bright color may communicate a message of warning, regardless of the actual message content. However, this can also reach a person in high-elaboration by drawing his or her attention to the content of the message. The use of iconic images, such as a well-known athlete, can also successfully reach individuals in all stages of elaboration. Under conditions of low-elaboration, the

message could attract attention and acceptance among people who like and trust the icon. When people are in high-elaboration, the icon may elicit positive feelings, which could increase message acceptance (Strahan et al., 2002).

The elaboration likelihood model of persuasion states that moderate repetition of a message can improve persuasion by increasing the opportunity for people to analyze an argument. However, once a person has analyzed and considered the message content, he or she will enter a second stage of processing. In this stage, repetition of the message becomes tedious and reactance is elicited from overexposure. This can result in decreased message acceptance (Petty and Cacioppo, 1986). This problem has implications for anti-smoking messages, particularly warning labels, which have been in rotation for many years. It was mentioned earlier that the U.S. has been using the same four warnings since 1985. As a result, it is no surprise that the warnings may be facing a wear-out or overexposure problem. Canada has also had wear-out problems with their warning labels in the past. A survey conducted in 1999 showed that 65 percent of adult smokers and 74 percent of youth smokers felt that Canada's warning labels, which had been introduced in 1994, had lost their effectiveness due to overuse. Other research shows that individuals who are exposed to new warning labels are significantly more likely to remember the message content when compared to those exposed to the old ones. Advertisers frequently address this issue by creating new campaigns, which often use a variation of the same theme (Strahan et al., 2002). It is important that designers of warning labels and public service announcements attempt to use this same technique.

3.2.6. The Transtheoretical Model Stages of Change

According to the Transtheoretical Model Stages of Change, behavior change is a process involving progression through five different stages. The first three stages are called the precontemplation, contemplation, and preparation stages. These stages precede the final two stages, which include the action or "quitting" stage and the maintenance stage. DiClemente, Prochaska, Fairhurst, Velicer, Velasquez and Rossi (1991) applied the model to the issue of smoking cessation. Those in the precontemplation stage are current smokers who are not seriously considering quitting within the next six months. They are often resistant to recognizing or modifying their problem. Contemplation stage smokers are seriously considering quitting within the next six months, but not within the next 30 days. These smokers are aware that a problem exists and are thinking about taking action to overcome it, but have not yet made a commitment to do so. According to Prochaska and Norcross (1994), those in contemplation know where they want to go, but are not quite ready to go there. In the next stage, called preparation, smokers are planning to quit within the next 30 days and have attempted to quit for a 24-hour period within the last year (DiClemente et al., 1991). They have likely made small changes in their behavior, but have not yet reached a "criterion for effective action" (Prochaska, DiClemente and Norcross, 1992, p. 1104). Throughout the process of quitting, it is likely that smokers will cycle and recycle through different stages. This is a common aspect of addictive behaviors such as smoking. An individual's level of self-efficacy, or belief that he or she has the ability to quit plays a role in defining the stage classifications (DiClemente et al., 1991).

Members of the preparation stage generally experience less pleasure from smoking, are less addicted, smoke less and take a highly active role in their attempt to quit when compared to those in the preceding stages. Another defining characteristic of these members is that they have high levels of self-efficacy and therefore are confident that they can stop their smoking behavior. When looking at the pros and cons of smoking, those in the preparation stage hold the cons to be greater than the pros. The opposite is true of those in the precontemplation stage. Research shows that in each stage of change, it is possible for the individual to move into the action stage (DiClemente et al., 1991).

From the stages of change model, it is clear that the informational needs of individuals in each of the groups differ and that anti-smoking messages should take these differences into consideration. Accordingly, it would be useful to develop anti-smoking messages targeting individuals in the different stages of change in the Transtheoretical Model.

3.3. Theories of Social Marketing

3.3.1. Defining Social Marketing

Social marketing is an approach that involves applying principles of advertising and marketing to promote and sell positive health behaviors (MacStravic, 2000; Wallack, 1990). Generally speaking, social marketing provides a structure in which marketing concepts are combined with theories of social psychology. Through this integration, programs are developed that help accomplish behavior change goals. The marketing mix

components of product, price, promotion and place are present in social marketing, but they have been adapted to address a specific health issue (MacStravic, 2000; Pechmann, 2002; Wallack, 1990). For example, in social marketing, the product is the behavior or concept that the consumer is being asked to accept. Price refers to psychological, social or economic costs associated with the message. With the issue of smoking cessation, a cost could be the psychological distress an individual may experience while attempting to quit. Promotion refers to how the recommended behavior is presented to offset the costs of compliance. Finally, place is the availability of the program or behavior. This includes both physical and social availability. By using these components of the marketing mix, social marketing attempts to make it easy and attractive for the consumer to comply with the recommendations in the message. Furthermore, a vital goal of social marketing is to reduce an individual's psychological, social and economic distance from the recommended behavior (Wallack, 1990). Since social marketing involves careful analysis and strategic planning, it is a useful approach for anti-smoking message designers to follow.

The most important aspects of social marketing are its careful definition of the problem and its clear objective setting. Additionally, it has a strong focus on the needs of the consumer. Social marketing campaigns also place a great emphasis on a critical component called the process of exchange (Pechmann, 2002; Wallack, 1990). This process refers to a person's willingness to exchange resources, such as time or money, in order to receive a benefit. The marketing process attempts to create a voluntary

exchange, meaning that the consumer is provided with the benefits at a minimal cost (Wallack, 1990).

3.3.2. Integrated Marketing Communication

The concept of integrated marketing communication (IMC) can be applied to anti-smoking messages. Integrated marketing communication is a concept designed to unify all aspects of marketing communication, including advertising, public relations, direct marketing and sales promotion (Burnett and Moriarty, 1998). Although some of these components do not apply to anti-smoking messages, the concept of unity is significant. Unification is important because research shows that warning labels and other types of anti-smoking messages are limited in what they can accomplish in isolation. Warning labels in particular have significant limitations because their messages are shorter than most persuasive communications. As a result, it is recommended that warning labels be incorporated into a broader anti-smoking campaign. The campaign and warning labels would contain consistent anti-smoking messages, but the former would have the ability to be far more extensive and incorporate more principles of communication, social psychology and social marketing (Strahan et al., 2002).

3.3.3. Advertising Retrieval Cues

By integrating anti-smoking messages, warning labels can serve as retrieval cues to remind people of the anti-smoking messages to which they have been exposed (Strahan et al., 2002). An advertising retrieval cue consists of verbal or visual

information originally contained in an advertisement. The cue is placed on the product package to assist consumers' memories of their brand evaluation at the point of purchase. Warning labels are nearly identical to the memory cues used by advertisers because they are placed directly on the product and are seen at the point of purchase. Research shows that the presence of advertising retrieval cues results in greater recall of brand claims and more favorable brand evaluations when compared to the absence of such cues (Keller, 1987). Accordingly, it would be useful to develop warning labels with messages consistent with those in public service announcement and other types of anti-smoking communications.

3.3.4. Targeted Communication

Although it is difficult to target smokers in different groups through television or print mass-media messages, the Internet offers great potential. Marketers frequently take advantage of the Internet's ability to carry messages to targeted groups (Kayne and Medoff, 2001). This ability can and should be utilized with anti-smoking messages. Two potential ways that the Internet can be used to deliver targeted anti-smoking messages are through cookies and search engines. Cookies save data whenever an individual enters personal information. This information can be used to create custom messages. Additionally, search engines can use key words submitted by the user to present a relevant advertisement (or anti-smoking message) (Kayne and Medoff, 2001).

It could be useful to promote a government-sponsored web address on all cigarette package warning labels and public service announcements. During their first

visit to the site, smokers or those at risk for smoking initiation would be presented with a brief questionnaire. The information obtained from the questionnaire would allow for targeted messages and information to be directed at different groups of smokers and at-risk individuals. As was mentioned previously, it would be useful to target anti-smoking messages to individuals in the different stages of cessation. Additionally, this technique could be developed even further so that information could be tailored to specific individuals rather than targeted to groups of smokers.

According to Bandura (2004), health promotion through interactive technology has an input side, which means that it can be personally tailored to factors known to affect health behavior. Additionally, on the behavioral adaptation side, an individual's interactivity increases the impact of the health promotion. Interactive technology can be successful because it provides individual feedback that may be adjusted to the participant's level of self-efficacy, unique barriers to change and progress (Bandura, 2004).

3.3.5. Improving the Social Marketing Approach

MacStravic (2000) argues that social marketing is generally not as successful as it could be because it is missing three important functions. The first is the monitoring function, which includes checking to see if the communicated value has been delivered to and accepted by those who have chosen the recommended action (converts). The second, called the confirmation function, involves reminding the converts of their appreciation for the value they have gained. Finally, the third function is solicitation, through which the

converts are encouraged to support the sponsor's continuing efforts to reach people with their message. These missing functions are important aspects of marketing and should not be overlooked in social marketing.

CHAPTER 4

COMPARING CANADA AND THE UNITED STATES

4.1 Overview

This chapter is a discussion of the message content in American and Canadian cigarette warning labels. This discussion is centered on Canada's 16 graphic warning labels (located on the outside of the packages), its 16 interior messages and the United States' 4 warning labels. Guiding this discussion are the theories and concepts that have been outlined in the previous chapters. The purpose of this section is to determine which warning labels follow the recommendations contained in the literature about developing effective anti-smoking messages. Following this discussion is an overview of several studies measuring the effectiveness of Canada's graphic warning labels. For a list of warning labels used in Canada and the United States, see Figures 4.1- 4.3.

4.2 Targeting Adolescents and Other Groups of Smokers

Since adolescent smoking is such a pertinent issue in both Canada and the United States, it is important to evaluate which government's warning labels appear to be most effectively targeting adolescents. This evaluation is based on whether or not the warning labels adhere to the recommendations contained in the literature. Recall from chapter two, research showing that some adolescents find U.S. warning labels to be irrelevant

(Crawford et al., 2002; Grandpre et al., 2003; Strahan et al., 2002; U.S. Department of Health and Human Services, 1994). Accordingly, a potential problem with the current U.S. warnings is that they address the issues of (a) tobacco use and pregnancy, (b) quitting smoking and (c) the long-term health effects of smoking. Most of these issues are not concerns among adolescents. In response to this problem, the U.S. government should introduce several new warnings emphasizing the short-term effects of smoking, such as the bad smell and the discoloration of teeth. Canada has attempted to do so with several of its warning labels. For example, one of Canada's warnings says "cigarettes cause mouth diseases." Although this could be seen as a long-term consequence of smoking, the image shows black and yellow teeth, which were demonstrated to be major concerns among adolescents by Crawford et al. (2002). Canada has also made great efforts to challenge the false belief that young people are protected from developing lung cancer. In one label the text reads, "cigarettes cause lung cancer." However, in the image accompanying the text, there is a young man in a hospital bed on life-support. He has an eyebrow piercing, which is most common among young people, and appears to be only in his twenties. Clearly, Canada has made an effort to reach adolescents through several of its warning labels.

Another significant aspect of the Canadian warnings is that they have only been in use since late 2000. This is important, considering that the U.S. warnings are likely facing an overexposure dilemma. Research shows that adolescents who smoke cigarettes are less likely than those who do not smoke to believe in the validity of warning labels because they are exposed to them more frequently. This lack of belief has been attributed

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to overuse of the warnings (Cecil et al., 2001). Canada has attempted to tackle this problem by introducing new warnings and by offering a wider variety of messages. However, in order to continue preventing an overexposure problem, Canada must regularly introduce new warning labels.

Another noteworthy aspect of Canada's warning labels is that they may appeal to sensation-seeking adolescents because they are highly dramatic and have strong emotional appeals. The warning labels used in the United States lack these characteristics.

A critique of both American and Canadian warning labels is that their persuasiveness is highly visible. This visibility could result in lowered message acceptance among adolescents (Grandpre et al., 2003; Petty and Cacioppo, 1986). Furthermore, young people may view the information as threatening and as a result, may ignore it or view it disapprovingly (Agostinelli and Grube, 2003). Another concern with both governments' warning labels is that they use strong fear appeals. Many researchers agree that fear appeals should be avoided in anti-smoking messages targeting children and adolescents. However, if fear appeals are used, researchers recommend that they emphasize issues concerning adolescents. Such concerns include the fear of rejection, social embarrassment or the fear of being caught by parents (Backer, Rogers and Sopory, 1992). Both Canada and the United States have generally failed to address these issues through their fear appeals.

In addition to improving its efforts to reach adolescent smokers and at-risk individuals, Canada has also attempted to target a wider range of smokers about the

dangers of second-hand smoke. For example, two of the warning labels used in the United States discuss the impact that a pregnant smoker has on her baby, but these warnings do not include general information about the impact of second-hand smoke. Canada also stresses the issue of pregnancy and smoking, but additionally includes more general messages about second-hand smoke. For example, four of Canada's 16 warnings emphasize the impact that smoking has on smokers *and* non-smokers. One label in particular features two young boys and has text reading, "don't poison us." Canada also has a warning label showing a child mimicking her smoking mother. This may not only frighten parents, but also older smokers who have grandchildren. The fear of negatively influencing young family members may encourage older smokers (i.e. ages 50 and over) to quit smoking (Sheahan, 2002). Accordingly, it appears as though Canada has made a greater attempt to reach more diverse groups of smokers through its warning labels than the United States. The Government of Canada has done so primarily by attempting to increase perceived susceptibility to the dangers of second-hand smoke among all smokers, rather than only those who are pregnant.

4.4. Incorporating Principles of Communication and Social Psychology

Warning labels in Canada and the United States focus almost exclusively on the use of loss-framed messages. This opposes the findings of many researchers who claim that gained-framed anti-smoking messages should be more successful than loss-framed messages (Rothman and Salovey, 1997; Salovey, Schneider and Apanovitch, 2002; Schneider et al., 2001; Strahan et al., 2002). However, Canada appears to have

considered this evidence and has incorporated gain-framed messages on the insides of its cigarette packages (see Figure 4.2). There are a total of 16 interior messages: 7 contain additional health information and 9 contain quitting efficacy messages. The efficacy messages tell smokers that quitting is possible and provide information about how that goal can be reached. The U.S. uses one gain-framed warning label, stating, "quitting smoking now greatly reduces serious risks to your health." However, a setback of this message is that it does not provide specific information about how quitting can reduce health risks. Additionally, it fails to elaborate on what "greatly reduces" implies.

A specific type of loss-framed message used in both Canada and the United States is a fear appeal. The Extended Parallel Process Model (EPPM) states that if a fear appeal is used, a strong efficacy message must immediately follow (Witte, 1992). A potential problem with the U.S. warning labels is that they have implicit, rather than explicit efficacy components. For example, the U.S. warning, "smoking causes lung cancer, heart disease, emphysema, and may complicate pregnancy," may imply to some smokers that if they quit smoking, they can avoid these threats. However, it does not explicitly provide a statement of response efficacy. Additionally, since the message also lacks a self-efficacy component, some smokers may be left wondering if they have the ability to avoid the threat. A lack of efficacy can be extremely problematic if it leads smokers into the fear control process rather than the danger control process of Witte's (1992) EPPM.

By incorporating some gain-framed messages on the insides of cigarette packages, Canada has included strong messages of efficacy. For example, one inner message states, "You CAN quit smoking!" The message continues by describing the

addictiveness of nicotine, but also includes tips about how the smoker can increase his or her chances of successfully quitting. Research shows that it is essential that efficacy messages be continually reinforced because self-doubts can quickly emerge after failure (Bandura, 1992). Canada's warning labels continually reinforce efficacy messages. They also serve as the last line of defense against smoking behavior because they are received after the smoker has opened the package.

Warning labels in Canada and the United States attempt to induce cognitive dissonance in smokers. They do so by enforcing ideas about the dangers of smoking. Since virtually all smokers are aware that smoking is bad for their health, the messages may create uncomfortable feelings of dissonance. As a result, smokers will search for ways to reduce their dissonance. According to the theory of Cognitive Dissonance, people usually attempt to reduce dissonance through several means: they can ignore the dissonance, change their cognition about the issue or change their behavior (Festinger, 1957). Since American warnings lack information about how the dissonance can be reduced (i.e. how smokers can quit), smokers may be more likely to ignore the dissonance or change their cognitions about smoking. Conversely, nine of the inner messages in Canada's cigarette packages offer a great deal of information about how smokers can reduce their dissonance. As a result, smokers may be more likely to change their smoking behavior when exposed to the Canadian warnings.

Another benefit of Canada's warning labels is that they can appeal to individuals in both high and low elaboration. The warnings include factual information that can be thoughtfully evaluated by the receiver, but also consist of simple cues that can result in

change without warranting analysis of the actual message content. Simple cues include the use of the colors red and yellow on the words "warning." These colors represent caution and as a result, they may attract the attention of viewers. Furthermore, the images on the warnings are rather disturbing and may successfully lead to negative feelings toward smoking among those in low-elaboration. On the contrary, American warning labels are based on reason. As a result, it is likely that they will only persuade those who are high in elaboration.

4.5. Incorporating Principles of Social Marketing

Due to the visual nature of Canada's warning labels, messages and themes can be easily incorporated into a broader anti-smoking campaign. By using the concept of integrated marketing communication (IMC), Canada can benefit from message consistency. The Government of Canada has already used this technique to create an anti-smoking mass media campaign targeting adults. The messages in the campaign feature a man named Bob, who is making an attempt to quit smoking. Bob is a fictional character, representing the average Canadian adult smoker. Health Canada (the government agency sponsoring the campaign) uses messages that are consistent to those in the inner portion of the cigarette warning labels. They contain information about the steps that Bob is taking toward quitting, as well as tips that have helped him progress thus far. In addition, Health Canada has dedicated a section of its webpage to Bob, including his personal journal and more tips and tools that can help smokers quit. The messages on the website are consistent with those in the public service announcements and warning

labels (Health Canada, 2004a). A final benefit of message integration is that Canada's graphic warning labels can serve as visual retrieval cues, reminding people of the anti-smoking messages they have been exposed to at the point of purchase or point of smoking behavior.

The United States could also use IMC to create integrated anti-smoking messages, but they would only be textually consistent. Since U.S. warning labels have far less information than Canadian warnings, it would be difficult to create a compelling integrated campaign.

4.6. Implications

This discussion suggests that Canadian warning labels follow the recommendations contained in the literature more closely than American warnings. The Canadian warnings address various concepts of communication, social psychology and social marketing. It also appears as though Canada has improved its efforts to target a wider range of smokers, including adolescents. However, a problem with this discussion is that it is based primarily on theoretical assumption. Although Canada may have followed more suggestions in the literature, it does not prove that the warning labels are actually more successful in reducing smoking levels than American warnings. In response to this issue, the next section contains a discussion of the results of several studies measuring the impact of Canada's graphic warning labels.

4.7. Efficacy of Canada's Cigarette Package Warning Labels: Evidence from Empirical Research

4.7.1. Success Among Adults

In 2001, the Institute of Cancer Research of the Canadian Institutes of Health Research funded a study evaluating Canada's new cigarette package warning labels. The study consisted of 2000 Canadian adults, of which 633 of were smokers (Canadian Cancer Society, 2004b; CNN Health, 2002). Results showed that 90 percent of smokers and 49 percent of non-smokers surveyed had noticed the warnings. Forty-four percent of the smokers said that the warnings motivated them to quit smoking. Additionally, 21 percent said that they were tempted to smoke one or more times, but did not because of the effects of the warnings. The warning labels have also effectively educated individuals about the health effects of smoking. Thirty five percent of smokers and 34 percent of non-smokers have learned new health information from the warning labels. Furthermore, the warnings have elicited increased interpersonal communication, with 83 percent of smokers reporting that the warnings have been mentioned or discussed in conversations (American Public Health Association, 2002; Canadian Cancer Society, 2004b; CNN Health, 2002).

Another study assessing the effects of Canada's warning labels consisted of 616 adult smokers in Southwestern Ontario, Canada. Results showed that the warning labels were a successful cessation intervention. Smokers who read, thought about and discussed the warnings were more likely to have attempted to quit, decreased their smoking behavior or successfully quit after three months. The findings in this study also indicated that the Canadian warning labels did not have wear out problems during their first year of

use. The researchers assumed that the labels remained salient during this time because of the large number of warnings and the variety and amount of information they provided (Hammond, Fong, McDonald, Cameron and Brown, 2003). Furthermore, the results of a study on former smokers showed that Canada's new warning labels played a role in motivating 31 percent of the participants to quit. Additionally, those who quit following the implementation of the new warning labels were 2.78 times more likely to mention the warnings as a quitting influence than those who quit before their introduction. The warning labels were also listed as a motivation to remain smoke-free by 27 percent of the participants (Hammond, McDonald, Fong, Brown and Cameron, 2004a).

Aside from the clear success of Canada's cigarette package warning labels, they have been criticized on four grounds: that smokers will ignore them, that they will cause excessive emotional distress, the graphic nature of the labels will undermine their credibility and that the graphic images will cause reactance and increase smoking levels (Hammond, Fong, McDonald, Brown and Cameron, 2004b). In response to this criticism, Hammond et al. (2004b) conducted a study evaluating potentially adverse effects of Canada's warning labels on adult smokers. Results showed that the labels were eliciting strong emotional reactions from smokers. However, negative emotional responses were associated with increased effectiveness of the warnings. Smokers who reported fear and disgust with the warnings were more likely to have decreased their smoking behavior, attempted to quit or successfully quit at the follow-up. The researchers also found that although some smokers attempted to avoid the warnings, they were no less likely to read or think about them. They were also no less likely to attempt

to quit smoking. Additionally, evidence from the study showed that the warning labels had not produced reactance because 20 percent of the participants reported smoking less as a result of the warnings. Finally, the research showed that the graphic nature of the warnings did not undermine credibility. As a result of these findings, the researchers concluded that the warning labels do not lead to harmful outcomes in adult smokers (Hammond, Fong, McDonald, Brown and Cameron, 2004b).

4.7.2. Success Among Adolescents

Aside from facing criticism over potentially harmful effects on adults, Canada's warning labels have also been heavily attacked over the effects they may have on adolescents. The Government of Canada faced heated opposition from the tobacco industry when trying to implement its graphic warning labels in 2000. The Canadian Tobacco Manufacturers' Council tried to defeat the legislation by claiming that the warnings could have detrimental effects on adolescents. A tobacco industry representative said, "we're quite concerned that this makes it even more shocking to smoke, nurturing that rebellious side of youth" (Barrington, 2000, p. 4). Fortunately, the information obtained thus far about the effects of the warning labels suggests that they are positively influencing Canadian adolescents.

The North American Student Smoking Survey (NASSS) used a quasi-experimental design to compare American high school students with Canadian high school students. The students received two 30-minute surveys. The first was in the fall of 2000 (prior to the introduction of Canada's graphic warning labels) and the second was

distributed in the spring of 2001 (following the introduction of the warnings). Results of the study showed that the Canadian warning labels resulted in increased label salience, increased perceived effectiveness of addressing the health hazards of smoking and increased discussion of the warnings. Furthermore, they resulted in more hesitation to smoke cigarettes. In the U.S., salience of the warning labels, the belief that smoking is unhealthy and hesitation to smoke due to warning labels all decreased from 2000-2001. However, the most striking findings in this study were intentions to quit. Results showed that from the fall of 2000 to the spring of 2001, intentions to quit among participants in Canada increased from approximately 86 percent to 88 percent. Interestingly, during the same period in the United States, intentions to quit decreased from 85 percent to 81 percent (see figure 4.3). Although this study does not indicate any behavioral effects of the warnings, it shows that they are having a positive influence on Canadian adolescents (Fong, 2003).

4.8 Improving Canada's Warning Labels

The Government of Canada appears to be following many of the recommendations in the literature with regard to the development of anti-smoking messages on its cigarette package warning labels. However, as was discussed previously, the literature on message framing suggests that the use of gain-framed messages should be more effective than loss-framed messages when dealing with a health-related issue like smoking. Additionally, some researchers are concerned about the potentially detrimental effects that fear appeals may have on adolescents. Although Canada is following the recommendations in the literature with regard to the development of an

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effective fear appeal, we have several concerns about the use of these appeals of

adolescents. First, although some messages of efficacy are present on the interior of the

cigarette packages, they contain a lengthy amount of text, which may be overlooked by

young people. Second, the messages can easily be missed depending on how the user

opens the package. Third, the messages address the issue of quitting smoking and may

not be relevant to those who are susceptible to smoking initiation. Since there has been

limited research on the effects of Canada's graphic cigarette warning labels on young

people, we have conducted a study measuring adolescents' opinions of loss-framed and

gain-framed warning labels. The purpose in doing so is to discover if Canada can

possibly improve upon its already successful warning labels by using a more diverse

approach. This approach would include the use of gain-framed messages along with the

existing loss-framed messages.

4.8.1. Hypotheses

The overall expectation is that gain-framed warning labels are more likely than

loss-framed warning labels to have a positive influence on adolescents' smoking-related

attitudes and behavioral intentions. More specifically:

H1: Gain-framed warning labels are more likely than loss-framed warnings to increase adolescents' intentions to quit smoking.

H2: Gain-framed warning labels are more likely than loss-framed warnings to increase adolescents' perceptions that the warning labels are effective.

H3: Adolescents are more likely to have more favorable attitudes toward the gain-framed warning labels than the loss-framed warning labels.

The content of the warning label is also likely to have an impact on adolescents' attitudes and behavioral intentions. The warning label featuring teeth (warning #2) is likely to be more relevant to the health-related concerns of adolescents than the warning label featuring a middle-aged man (warning #1). Accordingly, regardless of the framing of the message, it is hypothesized that:

> H4: When compared to warning label 1, the results of hypotheses 1-3 will be stronger for warning label 2.

There is very little information in the literature about differences in the effects of message framing on smokers and non-smokers. Accordingly, the following research questions are advanced:

> RQ1: Are loss-framed or gain-framed messages more effective in preventing smoking initiation among non-smokers?

> RQ2: Are loss-framed or gain-framed messages more effective in reinforcing non-smoking beliefs and attitudes?

Figure 4.1a: Warning labels in Canada (Health Canada, 2004b).

Figure 4.1b: Warning labels in Canada (Health Canada, 2004b).

Figure 4.1c: Warning labels in Canada (Health Canada, 2004b).

Figure 4.1d: Warning labels in Canada (Health Canada, 2004, February).

You CAN quit smoking!

Tobacco products are highly addictive

· When you get the craving to have a cigarette try this coping strategy:

· Remember the **4D's**:

· Delay having that smoke for at least ten minutes

· Deep breaths — take a deep breath or two

· Drink water — have a nice cold drink of water — sip it slowly

· Do something else — try to distract yourself by doing something else

For more information on tobacco, its health effects and ways to overcome a tobacco addiction, talk to a doctor, nurse or pharmacist or visit www.infotobacco.com

Health Canada   16

Vous POUVEZ arrêter de fumer!

Le tabac crée une très forte dépendance

· Lorsque vous ressentez l'envie de fumer, la stratégie suivante peut vous aider :

· Attendez au moins dix minutes avant d'allumer

· Respirez profondément

· Versez-vous un bon verre d'eau et buvez-le lentement

· Tâchez de vous distraire en changeant d'activité

Pour plus d'information sur le tabac et ses effets sur la santé ou sur les méthodes pour vaincre la dépendance au tabac, consultez un médecin, un(e) infirmier (ère), un(e) pharmacien(ne) ou le site www.infotabac.com

Santé Canada   16

You CAN quit smoking!

Tobacco products are highly addictive

· When you first quit, you will experience withdrawal symptoms like headaches, irritability, anxiety and trouble sleeping. While troubling, this is normal for the first three or four days.

· Don't worry... these symptoms are a signal that your body is beginning to heal.

· Remember: the cravings will get weaker in time.

· Consider talking to a health care professional about cessation therapy options.

For more information on tobacco, its health effects and ways to overcome a tobacco addiction, talk to a doctor, nurse or pharmacist or visit www.infotobacco.com

Health Canada   6

Vous POUVEZ arrêter de fumer!

Le tabac crée une très forte dépendance

· Quand vous cessez de fumer, le sevrage entraîne des effets secondaires comme les maux de tête, l'irritabilité, l'anxiété et l'insomnie. C'est normal et cela ne dure que trois ou quatre jours.

· Ne vous en faites pas... ces symptômes indiquent que votre corps commence à se régénérer.

· N'oubliez pas que l'envie de fumer diminuera avec le temps.

· Consultez un professionnel de la santé au sujet des programmes de renoncement au tabac.

Pour plus d'information sur le tabac et ses effets sur la santé ou sur les méthodes pour vaincre la dépendance au tabac, consultez un médecin, un(e) infirmier (ère), un(e) pharmacien(ne) ou le site www.infotabac.com

Santé Canada   6

Figure 4.2: Two of the 16 interior messages on Canadian cigarette packages

SURGEON GENERAL'S WARNING: Smoking Causes Lung Cancer, Heart Disease, Emphysema, and May Complicate Pregnancy.

SURGEON GENERAL'S WARNING: Quitting Smoking Now Greatly Reduces Serious Risks to Your Health.

SURGEON GENERAL'S WARNING: Smoking by Pregnant Women May Result in Fetal Injury, Premature Birth, and Low Birth Weight.

SURGEON GENERAL'S WARNING: Cigarette Smoke Contains Carbon Monoxide.

Figure 4.3: Warning Labels in the United States (U.S. Department of Health and Human Service, 2000).
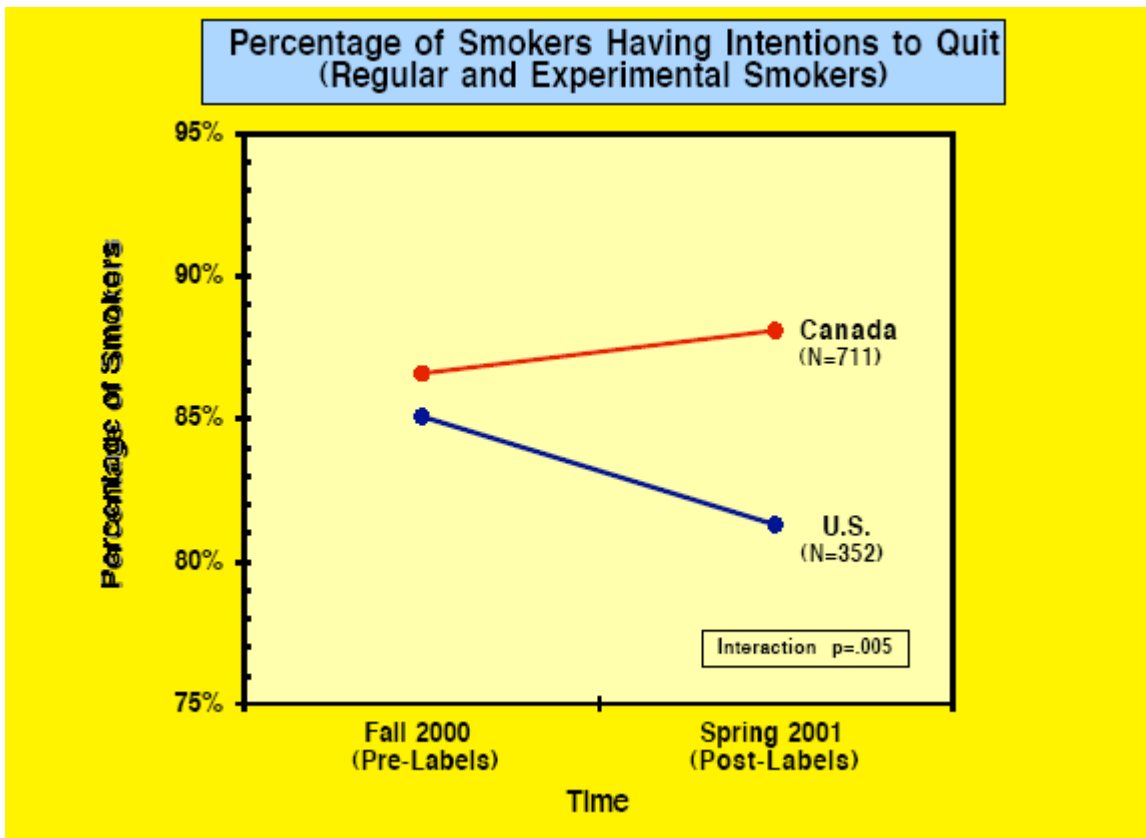
Figure 4.4: Percentage of Smokers Having Intentions to Quit (Fong, 2003).

CHAPTER 5

ADOLESCENTS' PERCEPTIONS OF CIGARETTE PACKAGE WARNING
LABELS: INVESTIGATING THE EFFECTS OF MESSAGE-FRAMING.

5.1. Method

5.1.1. Design

The study used a one-factorial design (high school students) by three

experimental message-framing conditions (loss-framed, gain-framed level 1 and

gain-framed level 2). Subjects were randomly assigned to one of the three message-

framing conditions. Each condition contained two different warning labels. The

measurement instrument collected information on the five dependent variables: (1)

intentions to smoke, (2) intentions to quit smoking, (3) perceived effectiveness of the

warning labels, (4) attitudes toward the warnings and (5) attitudes toward smoking.

In order to test the effects of message-framing on adolescents, two Canadian

cigarette warning labels were digitally modified using computer software. These

modifications consist of positive images and text, making the warnings gain-framed. In

addition to simply testing the difference between gain and loss-framed messages, the

gain-framed warning labels have been categorized as being "level 1" or "level 2." The

level 1 gain-framed warning labels and the loss-framed warning labels contain the same

anti-smoking messages, but they have been framed differently. In the level 1 gain-

framed versions, the messages discuss the benefits of not smoking by describing the threat the individual can avoid by following the recommendations in the message (e.g., "by not smoking, you can avoid mouth diseases"). Moreover, the level 1 version was enhanced even further to create the level 2 version. This was achieved by modifying the framing to emphasize the pure benefits of not smoking (e.g., "by not smoking, you improve you health and appearance"). In level 2, all negative words, such as "mouth diseases" and "emphysema" have been removed. For an example of the stimuli, see Figures 5.1-5.3.

5.1.2. Subjects

Two-hundred and ten high school students (ages 15-19, median age 16) participated in the experiment: 31 students were classified as current or regular smokers and 179 were classified as non-smokers. Forty-four percent of the participants were male and 56 percent were female. The subjects were drawn from a middle-class high school in a suburb of Columbus, Ohio.

5.1.3. Stimulus Materials

Stimuli consisted of full-color photographs (4.1" X 3.5") of cigarette warning labels. They were the actual size of the warning labels currently being used in Canada. Each participant was given two warning labels from three possible categories: loss-framed, gain-framed level 1 or gain-framed level 2. Each image had been placed on a

generic cigarette package in order to avoid any brand bias from the participants. Moreover, it prevented the students from being exposed to actual cigarette brands.

Loss-framed warnings: The two loss-framed messages are warning labels currently being used in Canada. One warning shows a middle-aged man coughing and holding an oxygen mask. The text reads "cigarettes leave you breathless." The second warning, which reads, "cigarettes cause mouth diseases," shows a mouth with yellow teeth and blackened gums.

Gain-framed level 1 warnings: These warnings correspond with the loss-framed messages described above. They consist of the same messages as the original warnings, but have been framed to emphasize the threats one can avoid by not smoking. The warnings state, "if you quit smoking you reduce your risk of breathing difficulties," and "by not smoking you can avoid mouth diseases."

Gain-framed level 2 warnings: These warnings present the same general messages as the warnings the two other groups. However, the warnings required slight content modifications in order to emphasize the benefits of not smoking, while eliminating any negative or frightening words. The primary difference between the level 1 and level 2 gain-framed versions is that the level 2 warnings emphasize the pure benefits an individual receives by not smoking. In contrast, the level 1 versions emphasize what an individual can gain by not smoking in terms of the threat he or she can *avoid*. The level 2

gain-framed warnings used in the study state, "if you quit smoking you will breathe easier" and "by not smoking you improve your health and appearance." It was hypothesized that the level 2 versions would generally be viewed as more effective than the level 1 versions.

5.1.4. Procedure

Participants were told that they would be participating in a cigarette package warning label survey designed to understand adolescents' opinions of the warnings. After the briefing, participants were randomly assigned a questionnaire from one of the three experimental conditions: gain-framed level 1, gain-framed level 2 or loss-framed.

Each questionnaire began with a page explaining that participation is voluntary, that students may withdrawal any time without penalty and that they are free to not answer any questions. Participants were asked to provide their honest opinions about the warning labels when completing the questionnaire. Each questionnaire consisted of two full-color 4.1" X 3.5" cigarette package warning labels followed by a set of questions.

5.1.5. Measures

The measurement instrument collected information for the five dependent variables, including: (1) intentions to smoke; (2) intentions to quit smoking; (3) perceived effectiveness of the warning labels; (4) attitudes toward the warning labels and (5) attitudes toward smoking.

Intentions to smoke and intentions to quit. These were measured by two questions asking, "In the next year, how likely is it that you will smoke one or more cigarettes?" and "In the next year, how likely is it that you will quit smoking?" The first question has been used successfully in past research (Ajzen, 1991; Carvajal et al., 2004). Each item was measured using a seven-point Likert scale ranging from not at all likely (one) to extremely likely (seven).

Perceived effectiveness of the warning labels. Participants were asked to what extent they believed that the warning labels would (a) reduce a smoker's daily cigarette consumption; (b) affect how often smokers think about the warnings; (c) improve a smoker's confidence in his or her ability to quit; (d) increase the likelihood that a smoker will quit (Hammond et al., 2004b). An additional question asked how effective the warning would be in reducing overall smoking levels. Each item was measured using a seven-point Likert scale ranging from not at all (one) to extremely likely (seven).

Attitudes toward the warning labels and attitudes toward smoking. For each stimulus warning label, subjects were asked to provide their attitude toward the warning. This index was created by calculating the mean scores of eleven, seven-point semantic differential scales: boring/interesting, bad/good, negative/positive, useless/useful, worthless/valuable, poor/outstanding, not for me/for me, weak/strong, not appealing/appealing, not attractive/attractive, and not likeable/likeable. The semantic

differential scales were also used to measure attitudes toward smoking. These scales have been used successfully in other studies and have shown strong evidence of reliability (Appiah, 2001a, 2001b). For warning label 1, the Cronbach's alpha was $\alpha=0.90$ for attitudes toward the warning and $\alpha=0.96$ for attitudes toward smoking. For warning label 2, the Cronbach's alpha was $\alpha=0.92$ for attitudes toward the warning and $\alpha=0.96$ for attitudes toward smoking.

Current smoking status. The subjects were asked how many cigarettes they have smoked within the past 30 days. Carjaval et al. (2004) define a current smoker as one who has smoked 1 or more cigarettes in the past 30 days. A regular smoker is defined as one who has smoked cigarettes on 10 or more of the past 30 days. Perceived smoking status was also measured in a question asking the subjects if they considered themselves to be smokers or non-smokers. Although results showed that 15 percent of the subjects were either current or regular smokers, only 9 percent considered themselves to be smokers.

Figure 5.1: Loss-framed warning labels.

Figure 5.2: Level 1 gain-framed warning labels.

Figure 5.3: Level 2 gain-framed warning labels.

5.2.1. Warning Label 1 (Older Man)

Attitudes Toward the Warning Label. A one-way analysis of variance was conducted to determine if adolescents' attitudes toward the warning label differed if the label was loss-framed, gain-framed level 1 (avoidance) or gain-framed level 2 (benefits). The ANOVA indicated a significant difference $F(2, 207) = 3.43, p < .05$. Follow-up analyses using pairwise comparisons demonstrated that adolescents viewed the loss-framed warning label more favorably ($M = 3.74$) than the gain-framed level 1 warning label ($M = 3.27, p < .05$).

Attitudes Toward Smoking. It was predicted that the framing of the warning label would influence adolescents' attitudes toward smoking. The ANOVA indicated no significant differences. It is likely that this occurred because nearly all of the subject held negative attitudes toward smoking, including some of those who were smokers.

Perceptions of Health Risks. It was predicted that adolescents' perceptions of the health risks of smoking would vary depending on whether they were exposed to the loss-framed, gain-framed level 1 or gain-framed level 2 warning label. The ANOVA indicated a significant difference among the warning label versions $F(2, 207) = 10.74, p < .001$. Follow-up analyses using pairwise comparisons demonstrated that adolescents believed that the loss-framed warning label more accurately depicted the health risk associated with smoking ($M = 4.70$) than either the gain-framed level 1 warning ($M = 3.89$) or the gain-framed level 2 warning ($M = 3.46, p < .01$).

Benefits of Not Smoking. It was predicted that adolescents' perceptions of the benefits of not smoking would be affected by the framing of the warning label. The ANOVA indicated a significant difference among the warning label versions $F(2, 207) = 3.49, p < .05$. Follow-up analyses using pairwise comparisons demonstrated that adolescents believed that the gain-framed level 1 warning label more accurately depicted the benefits of not smoking ($M = 3.79$) than did the loss-framed warning label ($M = 3.11$, $p < .05$).

Negative Health Consequences. It was predicted that adolescents' perceptions of the effectiveness of the warning in increasing a person's understanding of the negative health consequences of smoking would differ depending on the framing of the warning label to which they were exposed. The ANOVA indicated a significant difference among the warning label versions $F(2, 206) = 6.14, p < .01$. Follow-up analyses using pairwise comparisons demonstrated that adolescents perceived that the loss-framed warning label was more effective in increasing people's understanding of the negative health consequences of smoking ($M = 3.80$) than the gain-framed level 2 warning label ($M = 2.93$ $p < .01$).

Reduce Smoker's Daily Cigarette Consumption. It was predicted that adolescents' beliefs that the warning label would reduce a smoker's daily cigarette consumption would differ depending on the framing of the warning label to which they were exposed. No significant differences were found.

Reduce Overall Smoking Levels. It was predicted that adolescents' perceptions regarding the effectiveness of the warnings in reducing overall smoking levels would

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differ depending on the framing of the warning label to which they were exposed. No significant differences were found.

Think About the Health Risks of Smoking. It was predicted that adolescents would differ in their perceptions of how often people will think about the health risks of smoking depending on the framing of the warning label to which they were exposed. No significant differences were found.

Likelihood Smokers will Quit. It was predicted that the framing of the warning label would influence adolescents' beliefs regarding the likelihood of a smoker quitting due to the influence of the warning label. No significant differences were found.

Likelihood of Smoking Cigarettes. It was predicted that adolescents' likelihood of smoking cigarettes would differ based on the framing of the warning labels to which they were exposed. No significant differences were found.

5.2.2. Warning Label 2 (Teeth)

Attitude Toward the Warning Label. A one-way analysis of variance was conducted to determine if there was a difference in adolescents' attitudes toward the warning labels based on whether the label was loss-framed, gain-framed level 1 or gain-framed level 2. The ANOVA indicated a significant difference $F(2, 207) = 4.62, p < .05$. Follow-up analyses using pairwise comparisons demonstrated that adolescents rated the loss-framed warning label more favorably ($M = 4.42$) than both the gain-framed level 1 warning label ($M = 3.84, p < .01$) and the gain-framed level 2 warning label ($M = 3.80, p < .05$).

Attitude towards Smoking. It was predicted that the framing of the warning label would influence adolescents' attitudes toward smoking. The ANOVA indicated no significant differences. This likely occurred because nearly all of the subject held negative attitudes toward smoking, including some of those who were smokers.

Perceptions of Health Risks. It was predicted that adolescents' perceptions of the health risks of smoking would vary based on whether they were exposed to the loss-framed, gain-framed level 1 or gain-framed level 2 warning label. The ANOVA indicated a significant difference among the warning label versions $F (2, 207) = 46.56$, $p < .001$. Follow-up analyses using pairwise comparisons demonstrated that adolescents believed that the loss-framed warning label more accurately depicted the health risks associated with smoking ($M = 5.32$) than either the gain-framed level 1 ($M = 3.56$) or the gain-framed level 2 warnings ($M = 2.82$, $p < .001$).

Benefits of Not Smoking. It was predicted that adolescents' perceptions of the benefits of not smoking would be affected by the framing of the warning label. The ANOVA indicated a marginally significant difference among the warning label versions $F (2, 207) = 2.38$, $p < 0.1$. Contrary to what was expected, follow-up analyses using pairwise comparisons demonstrated that adolescents believed that the loss-framed warning label more accurately depicted the benefits of not smoking ($M = 4.47$) than did the gain-framed level 1 ($M=3.83$) and gain-framed level 2 warnings ($M = 3.93$, $p < 0.1$).

Perceptions of Negative Health Consequences. It was predicted that adolescents' perceptions of the negative health consequences of smoking would differ based on the framing of the warning label to which they were exposed. The ANOVA indicated a

significant difference among the warning label versions $F(2, 207) = 40.67$, $p < .001$. Follow-up analyses using pairwise comparisons demonstrated that adolescents perceived that the loss-framed warning label was more effective in increasing people's understanding of the negative health consequences of smoking ($M = 5.04$) than the gain-framed level 1 ($M=3.30$) and gain-framed level 2 warning labels ($M = 2.85$ $p < .001$).

Reduce Smoker's Daily Cigarette Consumption. It was predicted that the framing of the warning label would influence adolescents' perceptions of the effectiveness of the warning in reducing a smoker's daily cigarette consumption. The ANOVA indicated a significant difference among the warning labels versions $F(2, 207)=25.78$, $p<.001$. Follow-up analyses using pairwise comparisons demonstrated that adolescents believed that the loss-framed warning label ($M=4.14$) would be more effective in reducing a smoker's daily cigarette consumption than the gain-framed level 1 ($M=2.59$) and gain-framed level 2 warnings ($M=2.63$ $p<.001$).

Reduce Overall Smoking Levels. It was predicted that the framing of the warning label would influence adolescents' perceptions of the effectiveness of the warning in reducing overall smoking levels. The ANOVA indicated a significant difference among the warning labels versions $F(2, 207)=22.40$, $p<.001$. Follow-up analyses using pairwise comparisons demonstrated that adolescents believed that the loss-framed warning label ($M=4.18$) would be more effective in reducing overall smoking levels than the gain-framed level 1 warning ($M=2.81$) and the gain-framed level 2 warning ($M=2.64$ $p<.001$).

Think About the Health Risks of Smoking. It was predicted that the framing of the warning label would influence adolescents' perceptions of how often people will

think about the health risks of smoking due to the influence of the warning label. The ANOVA indicated a significant difference among the warning labels versions F (2, 207)=40.67, $p<.01$. Follow-up analyses using pairwise comparisons demonstrated that adolescents believed that the loss-framed warning label (M=5.04) would be more effective in reducing overall smoking levels than the gain-framed level 1 warning (M=3.30) and the gain-framed level 2 warning (M=2.85 p<.01).

Likelihood Smokers will Quit. It was predicted that adolescents' perceptions of the likelihood of a smoker quitting due to the influence of the warnings would differ depending on the framing of the warning label to which they were exposed. The ANOVA indicated a significant difference among the versions F (2, 207)=21.41, $p<.001$. Follow-up analyses using pairwise comparisons demonstrated that adolescents believed that smokers would be more likely to quit when exposed to the loss-framed warning label (M=3.87), rather than the gain-framed level 1 (M=2.55) or gain-framed level 2 warnings (M=2.38 p<.001).

Likelihood of Smoking Cigarettes. It was predicted that adolescents' likelihood of smoking cigarettes would differ based on the type of warning labels to which they were exposed. No significant differences were found because most of the subjects had little or no intentions to smoke.

5.2.3. Smokers vs. Non-Smokers (Warning Label 2)

The second phase of statistical analyses used a two (smokers vs. non-smokers) by three (message framing: loss-framed, gain-framed level 1, gain-framed level 2) between

subjects design. Two-way analyses of variance were conducted to determine if smokers and non-smokers differed in their perceptions of smoking based on the framing of the warning label to which they were exposed

Ability to Quit Smoking. . It was predicted that smokers would differ significantly from non-smokers in their beliefs that a warning label would influence a person's ability to quit. The two-way ANOVA indicated a significant main effect for version of the warning label $F(2, 204) = 13.61$, $p < .001$. This suggests that the loss-framed version of the warning label was perceived by adolescents as being more effective in improving a person's ability to quit smoking ($M = 4.21$) than either the gain-framed level 1 version ($M = 2.55$) or the gain-framed level 2 version ($M = 2.50$). However, this main effect is qualified by a marginally significant interaction between warning label version and smoking status $F(2, 204) = 2.78$, $p = .068$. A pairwise comparison of the means indicated that smokers responded more favorably to the loss-framed version of the warning label ($M = 4.70$) than did the non-smokers ($M = 3.72$). However, non-smokers responded more favorably to the gain-framed level 1 warning label ($M = 2.92$) than did smokers ($M = 2.18$).

Likelihood Smokers will Quit. It was predicted that smokers and non-smokers would perceive the likelihood of a smoker quitting differently depending on the framing of the warning label to which they were exposed. The two-way ANOVA indicated a significant main effect for the version of the warning label $F(2, 204) = 19.91$, $p < .001$. This suggests that the loss-framed version of the warning label was perceived by all adolescents as being more effective in persuading a smoker to quit ($M = 4.26$) than both

the gain-framed level 1 ($M = 2.36$) and the gain-framed level 2 warnings ($M = 2.31$). However, this main effect was qualified by a significant interaction $F(2, 204) = 3.00, p < .05$. A pairwise comparison of the means indicated that smokers responded more favorably to the loss-framed version of the warning label ($M = 4.80$) than did non-smokers ($M = 3.72$). However, non-smokers responded more favorably to the gain-framed level 1 warning label ($M = 2.63$) than did smokers ($M = 2.10$).

Intentions to Smoke Cigarettes. It was predicted that intentions to smoke in the future would vary among smokers and non-smokers depending on the framing of the warning label to which they were exposed. The two-way ANOVA indicated a significant main effect for version of the warning label $F(2, 204) = 4.90, p < .01$ and a main effect for smokers and non-smokers $F(2, 204) = 377.44, p < .001$. However, this was qualified by a significant interaction $F(2, 204) = 4.40, p < .01$. A pairwise comparison of the means indicated that smokers had significantly less intentions to smoke after being exposed to the loss-frame warning label ($M = 4.90$) than when they were exposed to either the gain-framed level 1 warning ($M = 6.55$) or the gain-framed level 2 warning ($M = 5.80$). It was also shown that non-smokers had significantly less intentions to smoke in the future after being exposed to each of the three versions ($M = 1.33, M = 1.37, M = 1.52$) than their smoking counterparts ($M = 4.90, M = 6.55, M = 5.80$, respectively).

5.3 Discussion

5.3.1. Why Were the Loss-Framed Messages More Effective?

Although many studies have investigated the effects of message framing on prevention health behaviors (e.g. sunscreen use to prevent skin cancer), these results

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may not be applicable to the issue of smoking (Wong and McMurray, 2002). Due to the limited number of studies directly addressing the issue of smoking, it may be inappropriate to make generalizations about the effects of message framing based on these previous studies.

Further, a reinvestigation of the literature revealed that the message framing postulate of prospect theory is more complex and uncertain than originally assumed. Even when focusing on the issue of smoking, the effects of message framing may vary depending on a number of personal characteristics, such as readiness to quit smoking, need for cognition and prior perceptions of the issue. Wong and McMurray (2002) conducted a study comparing the effects of message framing on those who intended to quit smoking and those who did not intend to quit. Those who intend to quit smoking are often more involved in the issue than those without such intentions. Recall previous research suggesting that loss-framed messages can be effective among those who are highly involved in an issue (Maheswaran and Meyers-Levy, 1990). Accordingly, results of the study showed that the loss-framed messages were more effective among those who intended to quit smoking. These individuals appear to have recognized the relevance of the anti-smoking information and were more willing to engage in cessation activities than those who did not intend to quit (Etter and Perneger, 1999; Wong and McMurray, 2002). The study also showed that more message-specific thoughts were elicited from the gain-framed messages among those who did not intend to quit. It is assumed that this occurred because the gain-framed messages were perceived as more favorable, giving the

messages more processing appeal. Additionally, the gain-framed messages were likely perceived as a new way to present anti-smoking information, increasing their processing appeal among those who did not intend to quit.

This information can be applied to the current study. The non-smokers in the study may have similar characteristics as smokers who intend to quit. The non-smokers likely recognized the relevance of the messages in the fear appeals. Since the survey indicated that they held unfavorable opinions toward smoking and had high levels of smoking self-efficacy, they likely supported the fearful information in the messages. This information was not threatening to these individuals because it supported their own cognitions about smoking. Accordingly, this suggests that the loss-framed messages may be particularly useful in reinforcing anti-smoking attitudes and in preventing smoking initiation among adolescents.

A study by Steward, Schneider, Pizarro and Salovey (2003) distinguished between smokers who are high in "need for cognition" (NFC) and those who are low in NFC. According to Cacioppo, Petty, Feinstein, and Jarvis (1996), when compared to those who are low in NFC, those who are high in NFC tend to engage in more "information acquisition, reasoning and problem solving to cope with a wide variety of predicaments in their world" (p. 199). This means that individuals high in NFC tend to use the central route to persuasion and those who are low in NFC are more likely to use the peripheral route. Results of the study showed that those who were low in NFC were more persuaded by the gain-framed anti-smoking messages and those who were high in NFC were more persuaded by the loss-framed messages.

These results were explained by previous research showing that negative information is weighted more heavily when forming an attitude based on the analysis of information (Cacioppo et al., 1996).

Although the current study did not measure need for cognition, it may be possible to assume that the non-smokers in the sample were high in NFC with the issue of smoking. The elaboration likelihood model of persuasion states that persuasion occurring in the central route is long-lasting, resistant to counter-persuasion and predictive of behavior (Petty and Cacioppo, 1986). Since responses to the survey indicated that the non-smoking subjects had made a decision to not smoke, held unfavorable attitudes toward smoking and believed that they could remain smoke-free, they must have at some point processed anti-smoking arguments through the central route. Accordingly, the loss-framed messages may reinforce their anti-smoking cognitions more effectively than the gain-framed messages.

An individual's prior perceptions about smoking also influence how the framing of a message is processed. According to Rothman and Salovey (1997), it is important to consider how the framed information is integrated with these perceptions. In applying this to the current study, since most anti-smoking messages are framed in terms of losses, the subjects may have perceived the gain-framed messages as somewhat contradictory to their expectations. Additionally, it is important to note that persuasion is complicated when a message does not meet one's expectations. Although the unexpected framing may lead to greater

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processing of a message, it will not necessarily be adopted by the message receiver (Rothman and Salovey, 1997).

The current study was modeled after a study conducted by Schneider et al. (2001). The previous study demonstrated that gain-framed messages were more effective than loss-framed messages among smoking and non-smoking adults. Although the current study was expected to produce similar results, comparing the studies may be inappropriate because they differ in two distinct ways. First, the current study used print messages, while the previous used video. These differences are significant because research has suggested that when using video, positive appeals should be used rather than negative appeals (National Cancer Institute, 2002). Since video can incorporate music and camera effects, fear appeals in this media have the potential to be stronger than those in print. Accordingly, print fear appeals may be more moderate and therefore more appropriate for young people.

Another significant difference between these two studies is that Schneider et al. (2001) used adult subjects. It has been continually emphasized throughout this thesis that adolescents respond differently than adults to anti-smoking messages. Accordingly, it is no surprise that they may also respond differently to message framing manipulations. Additionally, research has shown that fear appeals tend to be more effective with sensation seekers (National Cancer Institute, 2002). The characteristic of sensation-seeking is most common among adolescents.

5.3.2. Strengths and Limitations of the Study

This study had several strengths. First, adolescent smoking is a significant issue. These findings may help us to discover the most effective ways to prevent smoking initiation and encourage smoking cessation among adolescents through cigarette warning labels. Second, this study was based off of theory and previous research. The findings contribute to the complex literature on message framing and can help us understand how adolescents may respond to the framing of anti-smoking messages. Third, the study had a large sample size of 210 high school students. Finally, the questionnaire consisted almost entirely of established instruments, which have been successfully used in previous research.

A limitation of this study is that is was only able to measure adolescents' behavioral intentions, not their actual behavior. However, the significant relationship between behavior and behavioral intentions has been well documented (Ajzen, 1991; Ajzen and Fishbein, 1974; Montano, and Kasprzyk, 2004). Unfortunately, this relationship becomes more complicated when dealing with an addictive behavior like smoking because it is not under complete volitional control (Ajzen 1991; Montano and Kasprzyk, 2004). Accordingly, although the smokers in the study had significantly higher intentions to quit when exposed to the loss-framed messages, we cannot assume that they will actually be able to quit. We can, however, assume that the loss-framed warning labels are effective in motivating one to consider quitting.

This study had several other limitations. First, since the stimulus materials included two of Canada's actual warning labels, manipulation of the framing was particularly difficult. The Canadian warnings contained many negative words (i.e. mouth diseases, emphysema, lung cancer), which had no clear gain-framed counterparts. This was a significant problem for the gain-framed level 2 warnings because all negative words were eliminated in this condition. Accordingly, these messages lost some of the original content. This creates a problem because it becomes difficult to distinguish between differences caused by the framing and those caused by the message content.

The selection of subjects also resulted in weaknesses of the study. Subjects were drawn from a single high school in a suburb of Columbus, Ohio. Ninety percent of the students identified themselves as white. Additionally, approximately 60 percent of the students' mothers and 73 percent of the students' fathers had either a bachelors or graduate degree. These demographics make generalization of the results inappropriate. Additionally, although the study used an adequate number of subjects in general, it could have been greatly improved with a larger number of smokers. Due to the small number of subjects who smoked, we were only able to draw several conclusions about the effects of message framing on smokers.

A final weakness that may have impacted the results of the study was a lack of complete control in the classrooms when the surveys were being distributed. Since the three versions of the survey were randomly assigned, several students saw the other versions of the warnings on their classmates' surveys. Although the

students were asked to look only at their own surveys, it was difficult to control this situation. However, since only several students witnessed the warnings in other conditions, it is not expected to have a significant impact on the results.

5.3.3. Implications for Intervention and Future Research

Results of this study suggest that loss-framed warning labels can be effective in motivating adolescent smokers to quit and in reinforcing anti-smoking beliefs and attitudes among non-smoking adolescents. However, differences in the effects of message framing among smokers and non-smokers are still not well understood. Future research should address this question. Additionally, this study should be repeated using adult subjects in order to identify differences in how adolescents and adults respond to the message framing of warning labels.

5.3.4. Conclusions

Results of this study show that adolescents believed that warning label 2 (teeth) was more effective than warning label 1 (older man). It is assumed that these results occurred because the subjects perceived warning 2 as being more relevant to their smoking-related concerns. These results emphasize the importance of creating anti-smoking messages with content that is relevant to young people.

Although the effects of warning label 1 were limited, warning label 2 produced much stronger results. These results showed that the loss-framed version was perceived as more favorable than either gain-framed versions. Additionally, the

loss-framed warning was perceived as being more effective in (1) increasing

people's understanding of the consequences of smoking, (2) reducing a smoker's

daily cigarette consumption, (3) reducing overall smoking levels, (4) increasing how

often people think about the risks of smoking and (5) increasing the likelihood of a

smoker quitting. Furthermore, smokers who were exposed to the loss-framed

version of warning 2 were significantly less likely to have intentions to smoke in the

future. These results indicate that loss-framed warning labels can be effective in

motivating adolescent smokers to quit and that they can effectively reinforce anti-

smoking beliefs and behavioral intentions among non-smokers.

	Loss-Framed	Gain-Framed Level 1	Gain-Framed Level 2
Warning 1 (man)			
Intentions to Smoke	2.03 (1.91)	2.23 (2.07)	2.25 (2.20)
Intentions to Quit	3.90 (1.85)	3.64 (1.69)	3.92 (1.75)
Perceived Effectiveness	2.93 (1.12)	2.62 (0.95)	2.47 (1.10)
Attitudes toward Warning	3.74 (1.13)	3.27 (1.04)	3.39 (1.19)
Attitudes toward Smoking	1.44 (0.91)	1.66 (1.05)	1.51 (0.88)
Warning 2 (teeth)			
Intentions to Smoke	1.83 (1.66)	2.17 (2.09)	2.15 (2.06)
Intentions to Quit	3.83 (1.80)	2.77 (1.64)	3.27 (2.00)
Perceived Effectiveness	4.29 (1.53)	2.85 (1.23)	2.62 (1.14)
Attitudes toward Warning	4.42 (1.31)	3.84 (1.44)	3.80 (1.33)
Attitudes toward Smoking	1.41 (0.84)	1.64 (1.10)	1.51 (0.89)

Table 5.1: Adolescents' Mean (and Standard Deviation) Responses to Cigarette Warning Labels

	Loss-Framed	Gain-Framed Level 1	Gain-Framed Level 2
Smokers			
Improving One's Ability to Quit	4.70 (2.00)	2.18 (1.54)	2.50 (1.27)
Likelihood Smokers Will Quit	4.80 (1.87)	2.09 (1.45)	2.20 (1.03)
Intentions to Smoke	4.90 (2.18)	6.55 (0.69)	5.80 (2.10)
Non-Smokers			
Improving One's Ability to Quit	3.72 (1.88)	2.92 (1.37)	2.50 (1.30)
Likelihood Smokers Will Quit	3.72 (1.76)	2.63 (1.31)	2.41 (1.26)
Intentions to Smoke	1.33 (0.83)	1.37 (0.94)	1.52 (1.25)

Table 5.2: Mean (and Standard Deviation) Responses to Cigarette Warning Labels: Smokers vs. Non-Smokers

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APPENDIX A

A VISUAL COMPARISON OF CIGARETTE PACKAGES IN CANADA AND THE
UNITED STATES

Cigarette packages in the United States

Cigarette packages in Canada

Cigarette packages in the United States and Canada (Fong, 2003).

APPENDIX B

QUESTIONNAIRE: VERSION 1

Cigarette Package Warning Label Survey

School of Communication
The Ohio State University
Columbus, OH 43210

Researchers in the School of Communication at the Ohio State University would like your participation in a survey. The purpose of this survey is to learn about your opinions of cigarette package warning labels. We would like you to look at some warning labels and then provide your careful and honest feedback.

There are 2 warning label in this survey. Please look at them and answer the questionnaire that follows. It is important that we obtain <u>YOUR</u> <u>HONEST</u> evaluation of the warning label.

Please answer each question to the best of your ability. <u>You will face no risks and receive no payment.</u> It is important to note that: (1) your participation is voluntary, (2) you may withdraw from the study at any time with no penalty, and (3) you are free to not answer any question for any reason. You will be guaranteed anonymity; and please do not write your name on the questionnaire. The questionnaire will take approximately 15 to 20 minutes to fill out.

If you have any questions while completing the questionnaire, please raise your hand and the questionnaire administrator will discuss your question with you.

Please complete the questionnaire on your own, without discussing it with your friends.

We would like to know some information concerning your background. Please answer the following questions:

1.   Age: _____

2.   Gender: _____ male   _____ female

3.   My ethnicity is... (Please circle the number.)
   (1)   White, Caucasian, European, not Hispanic
   (2)   Chinese, Chinese-American
   (3)   Japanese, Japanese-American
   (4)   Korean, Korean-American
   (5)   Black, African-American
   (6)   Hispanic, Latino(a)
   (7)   Other (write in): _____

4. What is the highest level of education your mother has completed (Place a check by your answer)?
   _____ less than a High School Degree
   _____ High School Degree
   _____ Trade/Vocational School
   _____ Some College/University
   _____ College/University Degree
   _____ Graduate Degree (e.g., Master's, Ph.D.)
   _____ Other (please specify) _____

5. What is the highest level of education your father has completed (Place a check by your answer)?
   _____ less than a High School Degree
   _____ High School Degree
   _____ Trade/Vocational School
   _____ Some College/University
   _____ College/University Degree
   _____ Graduate Degree (e.g., Master's, Ph.D.)
   _____ Other (please specify) _____

6. What is your mother's occupation? (if retired/not working/deceased, list previous occupation) _____.

7. What is your father's occupation? (if retired/not working/deceased, list previous occupation)_____.

8. Put a check by the grade that is closest to your overall grade average in high school.
   _____ A+   _____ B+   _____ C+   _____ D+
   _____ A   _____ B   _____ C   _____ D
   _____ A-   _____ B-   _____ C-   _____ D- or less

9. What grade are you in now?
   _____ 9th   _____ 11th
   _____ 10th   _____ 12th

10. How many <u>cigarettes</u> have you smoked within the <u>past 30 days</u> (please check the appropriate category):
   _____ none
   _____ 1 to 5
   _____ 6 to 10
   _____ 11 to 15
   _____ more than 15

11. Which of the following do you consider yourself (please check one):

_____ Smoker _____ Non-smoker

The following are some situations in which certain people may be tempted to smoke Please indicate whether you are sure that you could refrain or keep yourself from smoking in each situation.

12. Please answer the following questions by circling the number (from 1 to 7) that best describes your feeling.

	Not at All						Absolutely
a. When I feel nervous I can keep myself from smoking	1	2	3	4	5	6	7
b. When I feel depressed I can keep myself from smoking	1	2	3	4	5	6	7
c. When I am angry I can keep myself from smoking	1	2	3	4	5	6	7
d. When I feel anxious I can keep myself from smoking.	1	2	3	4	5	6	7
e. When I want to think about a difficult problem I can keep myself from smoking.	1	2	3	4	5	6	7
f. When I feel the urge to smoke I can keep myself from smoking.	1	2	3	4	5	6	7
g. When hanging out with friends I can keep myself from smoking.	1	2	3	4	5	6	7
h. When celebrating something I can keep myself from smoking.	1	2	3	4	5	6	7
i. When drinking alcoholic beverages I can keep myself from smoking.	1	2	3	4	5	6	7
j. When I am with smokers I can keep myself from smoking.	1	2	3	4	5	6	7
k. After having a meal I can keep myself from smoking.	1	2	3	4	5	6	7
l. When having coffee or tea I can keep myself from smoking.	1	2	3	4	5	6	7

Please turn to the next page to see Warning Label #1

Below are 11 scales with ratings from 1 to 7. For each scale, please circle the number that best indicates how you feel about the warning label. For example, 1 = Boring, and 7 = Interesting.

13. I feel that the <u>warning label</u> is...

boring	(1)	(2)	(3)	(4)	(5)	(6)	(7)	**interesting**
bad	(1)	(2)	(3)	(4)	(5)	(6)	(7)	good
negative	(1)	(2)	(3)	(4)	(5)	(6)	(7)	**positive**
useless	(1)	(2)	(3)	(4)	(5)	(6)	(7)	useful
worthless	(1)	(2)	(3)	(4)	(5)	(6)	(7)	**valuable**
poor	(1)	(2)	(3)	(4)	(5)	(6)	(7)	outstanding
not for me	(1)	(2)	(3)	(4)	(5)	(6)	(7)	**for me**
weak	(1)	(2)	(3)	(4)	(5)	(6)	(7)	strong
not appealing	(1)	(2)	(3)	(4)	(5)	(6)	(7)	**appealing**
not attractive	(1)	(2)	(3)	(4)	(5)	(6)	(7)	attractive
not likable	(1)	(2)	(3)	(4)	(5)	(6)	(7)	**likable**

Below are 11 scales with ratings from 1 to 7. For each scale, please circle the number that best indicates how you feel about smoking. For example, 1 = Boring, and 7 = Interesting.

14. I feel that <u>smoking</u> is...

boring	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**	**(7)**	**interesting**
bad	(1)	(2)	(3)	(4)	(5)	(6)	(7)	good
negative	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**	**(7)**	**positive**
useless	(1)	(2)	(3)	(4)	(5)	(6)	(7)	useful
worthless	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**	**(7)**	**valuable**
poor	(1)	(2)	(3)	(4)	(5)	(6)	(7)	outstanding
not for me	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**	**(7)**	**for me**
weak	(1)	(2)	(3)	(4)	(5)	(6)	(7)	strong
not appealing	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**	**(7)**	**appealing**
not attractive	(1)	(2)	(3)	(4)	(5)	(6)	(7)	attractive
not likable	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**	**(7)**	**likable**

15. How accurately do you feel this warning label depicts risks to your health?

1	2	3	4	5	6	7
Not at All Accurately						**Very Accurately**

16. How accurately do you feel this warning label depicts the benefits of <u>not</u> smoking?

1	2	3	4	5	6	7
Not at All Accurately						**Very Accurately**

17. How relevant is this warning label to the concerns of people like you?

1	2	3	4	5	6	7
Not at All Relevant						**Extremely Relevant**

18. To what extent do you think that this warning label will reduce a smoker's daily cigarette consumption?

1	2	3	4	5	6	7
Not at All						**A lot**

19. How effective do you think this warning label is in reducing smoking?

1	2	3	4	5	6	7
Not at All Effective						**Extremely Effective**

20. How effective is this warning label in increasing people's understanding of the negative health consequences of smoking?

1	2	3	4	5	6	7
Not at All Effective						**Extremely Effective**

21. To what extent do you think this warning label will affect how often smokers will think about the health risks of smoking?

1	2	3	4	5	6	7
Not at All						**A lot**

22. To what extent do you think this warning label will improve a smoker's confidence in his or her ability to quit?

1	2	3	4	5	6	7
Not at All						**A lot**

23. To what extent do you think this warning label will increase the likelihood that a smoker will quit smoking?

1	2	3	4	5	6	7
Not at All						**A lot**

24. To what extent did you feel fear as a result of this warning label?

1	2	3	4	5	6	7
Not at All						**A lot**

25. To what extent did you feel disgust as a result of this warning label?

1	2	3	4	5	6	7
Not at All						**A lot**

26. In the next year, how likely is it that you will smoke one or more cigarettes?

1	2	3	4	5	6	7
Not at All Likely						**Extremely Likely**

27. In the next year, how likely is it that you will quit smoking? *(If you do not smoke, please skip this question and continue on to the next page)*

1	2	3	4	5	6	7
Not at All Likely						**Extremely Likely**

Please turn to the next page to see Warning Label #2

Below are 11 scales with ratings from 1 to 7. For each scale, please circle the number that best indicates how you feel about the warning label. For example, 1 = Boring, and 7 = Interesting.

28. I feel that the <u>warning label</u> is...

boring	(1)	(2)	(3)	(4)	(5)	(6)	(7)	**interesting**
bad	(1)	(2)	(3)	(4)	(5)	(6)	(7)	**good**
negative	(1)	(2)	(3)	(4)	(5)	(6)	(7)	**positive**
useless	(1)	(2)	(3)	(4)	(5)	(6)	(7)	**useful**
worthless	(1)	(2)	(3)	(4)	(5)	(6)	(7)	**valuable**
poor	(1)	(2)	(3)	(4)	(5)	(6)	(7)	**outstanding**
not for me	(1)	(2)	(3)	(4)	(5)	(6)	(7)	**for me**
weak	(1)	(2)	(3)	(4)	(5)	(6)	(7)	**strong**
not appealing	(1)	(2)	(3)	(4)	(5)	(6)	(7)	**appealing**
not attractive	(1)	(2)	(3)	(4)	(5)	(6)	(7)	**attractive**
not likable	(1)	(2)	(3)	(4)	(5)	(6)	(7)	**likable**

Below are 11 scales with ratings from 1 to 7. For each scale, please circle the number that best indicates how you feel about smoking. For example, 1 = Boring, and 7 = Interesting.

29. I feel that <u>smoking</u> is...

boring	(1)	(2)	(3)	(4)	(5)	(6)	(7)	**interesting**
bad	(1)	(2)	(3)	(4)	(5)	(6)	(7)	**good**
negative	(1)	(2)	(3)	(4)	(5)	(6)	(7)	**positive**
useless	(1)	(2)	(3)	(4)	(5)	(6)	(7)	**useful**
worthless	(1)	(2)	(3)	(4)	(5)	(6)	(7)	**valuable**
poor	(1)	(2)	(3)	(4)	(5)	(6)	(7)	**outstanding**
not for me	(1)	(2)	(3)	(4)	(5)	(6)	(7)	**for me**
weak	(1)	(2)	(3)	(4)	(5)	(6)	(7)	**strong**
not appealing	(1)	(2)	(3)	(4)	(5)	(6)	(7)	**appealing**
not attractive	(1)	(2)	(3)	(4)	(5)	(6)	(7)	**attractive**
not likable	(1)	(2)	(3)	(4)	(5)	(6)	(7)	**likable**

30. How accurately do you feel this warning label depicts risks to your health?

1	2	3	4	5	6	7
Not at All Accurately						**Very Accurately**

31. How accurately do you feel this warning label depicts the benefits of <u>not</u> smoking?

1	2	3	4	5	6	7
Not at All Accurately						**Very Accurately**

32. How relevant is this warning label to the concerns of people like you?

1	2	3	4	5	6	7
Not at All Relevant						**Extremely Relevant**

33. To what extent do you think that this warning label will reduce a smoker's daily cigarette consumption?

1	2	3	4	5	6	7
Not at All						**A lot**

34. How effective do you think this warning label will be in reducing smoking?

1	2	3	4	5	6	7
Not at All Effective						**Extremely Effective**

35. How effective is this warning label in increasing people's understanding of the negative health consequences of smoking?

1	2	3	4	5	6	7
Not at All Effective						**Extremely Effective**

36. To what extent do you think this warning label will affect how often smokers will think about the health risks of smoking?

1	2	3	4	5	6	7
Not at All						**A lot**

37. To what extent do you think this warning label will improve a smoker's confidence in his or her ability to quit?

1	2	3	4	5	6	7
Not at All						**A lot**

38. To what extent do you think this warning label will increase the likelihood that a smoker will quit smoking?

1	2	3	4	5	6	7
Not at All						**A lot**

39. To what extent did you feel fear as a result of this warning label?

1	2	3	4	5	6	7
Not at All						**A lot**

40. To what extent did you feel disgust as a result of this warning label?

1	2	3	4	5	6	7
Not at All						**A lot**

41. In the next year, how likely is it that you will smoke one or more cigarettes?

1	2	3	4	5	6	7
Not at All Likely						**Extremely Likely**

42. In the next year, how likely is it that you will quit smoking? *(If you do not smoke, please skip this question)*

1	2	3	4	5	6	7
Not at All Likely						**Extremely Likely**

Thank you for Participating!

APPENDIX C

QUESTIONNAIRE: VERSION 2

Cigarette Package Warning Label Survey

School of Communication
The Ohio State University
Columbus, OH 43210

Researchers in the School of Communication at the Ohio State University would like your participation in a survey. The purpose of this survey is to learn about your opinions of cigarette package warning labels. We would like you to look at some warning labels and then provide your careful and honest feedback.

There are 2 warning label in this survey. Please look at them and answer the questionnaire that follows. It is important that we obtain <u>YOUR</u> <u>HONEST</u> evaluation of the warning label.

Please answer each question to the best of your ability. <u>You will face no risks and receive no payment.</u> It is important to note that: (1) your participation is voluntary, (2) you may withdraw from the study at any time with no penalty, and (3) you are free to not answer any question for any reason. You will be guaranteed anonymity; and please do not write your name on the questionnaire. The questionnaire will take approximately 15 to 20 minutes to fill out.

If you have any questions while completing the questionnaire, please raise your hand and the questionnaire administrator will discuss your question with you.

Please complete the questionnaire on your own, without discussing it with your friends.

We would like to know some information concerning your background. Please answer the following questions:

1. Age: _____

2. Gender: _____ male _____ female

3. My ethnicity is... (Please circle the number.)
    (8) White, Caucasian, European, not Hispanic
    (9) Chinese, Chinese-American
    (10) Japanese, Japanese-American
    (11) Korean, Korean-American
    (12) Black, African-American
    (13) Hispanic, Latino(a)
    (14) Other (write in): _____

4. What is the highest level of education your mother has completed (Place a check by your answer)?
    _____ less than a High School Degree
    _____ High School Degree
    _____ Trade/Vocational School
    _____ Some College/University
    _____ College/University Degree
    _____ Graduate Degree (e.g., Master's, Ph.D.)
    _____ Other (please specify) _____

5. What is the highest level of education your father has completed (Place a check by your answer)?
    _____ less than a High School Degree
    _____ High School Degree
    _____ Trade/Vocational School
    _____ Some College/University
    _____ College/University Degree
    _____ Graduate Degree (e.g., Master's, Ph.D.)
    _____ Other (please specify) _____

6. What is your mother's occupation? (if retired/not working/deceased, list previous occupation) _____.

7. What is your father's occupation? (if retired/not working/deceased, list previous occupation)_____.

8. Put a check by the grade that is closest to your overall grade average in high school.
    _____ A+   _____ B+   _____ C+   _____ D+
    _____ A   _____ B   _____ C   _____ D
    _____ A-   _____ B-   _____ C-   _____ D- or less

9. What grade are you in now?
    _____ 9th   _____ 11th
    _____ 10th   _____ 12th

10. How many <u>cigarettes</u> have you smoked within the <u>past 30 days</u> (please check the appropriate category):
    _____ none
    _____ 1 to 5
    _____ 6 to 10
    _____ 11 to 15
    _____ more than 15

11. Which of the following do you consider yourself (please check one):
_____ Smoker   _____ Non-smoker

The following are some situations in which certain people may be tempted to smoke Please indicate whether you are sure that you could refrain or keep yourself from smoking in each situation.

12. Please answer the following questions by circling the number (from 1 to 7) that best describes your feeling.

	Not at All						Absolutely
a. When I feel nervous I can keep myself from smoking	1	2	3	4	5	6	7
b. When I feel depressed I can keep myself from smoking	1	2	3	4	5	6	7
c. When I am angry I can keep myself from smoking	1	2	3	4	5	6	7
d. When I feel anxious I can keep myself from smoking.	1	2	3	4	5	6	7
e. When I want to think about a difficult problem I can keep myself from smoking.	1	2	3	4	5	6	7
f. When I feel the urge to smoke I can keep myself from smoking.	1	2	3	4	5	6	7
g. When hanging out with friends I can keep myself from smoking.	1	2	3	4	5	6	7
h. When celebrating something I can keep myself from smoking.	1	2	3	4	5	6	7
i. When drinking alcoholic beverages I can keep myself from smoking.	1	2	3	4	5	6	7
j. When I am with smokers I can keep myself from smoking.	1	2	3	4	5	6	7
k. After having a meal I can keep myself from smoking.	1	2	3	4	5	6	7
l. When having coffee or tea I can keep myself from smoking.	1	2	3	4	5	6	7

Please turn to the next page to see Warning Label #1

ATTENTION

IF YOU QUIT SMOKING YOU REDUCE YOUR RISK OF BREATHING DIFFICULTIES

By not smoking, you can avoid crippling and often fatal lung diseases such as emphysema

CIGARETTES

25 Cigarettes King Size   *FULL FLAVOR*

Below are 11 scales with ratings from 1 to 7. For each scale, please circle the number that best indicates how you feel about the warning label. For example, 1 = Boring, and 7 = Interesting.

13. I feel that the <u>warning label</u> is...

boring	(1)	(2)	(3)	(4)	(5)	(6)	(7)	**interesting**
bad	(1)	(2)	(3)	(4)	(5)	(6)	(7)	good
negative	(1)	(2)	(3)	(4)	(5)	(6)	(7)	**positive**
useless	(1)	(2)	(3)	(4)	(5)	(6)	(7)	useful
worthless	(1)	(2)	(3)	(4)	(5)	(6)	(7)	**valuable**
poor	(1)	(2)	(3)	(4)	(5)	(6)	(7)	outstanding
not for me	(1)	(2)	(3)	(4)	(5)	(6)	(7)	**for me**
weak	(1)	(2)	(3)	(4)	(5)	(6)	(7)	strong
not appealing	(1)	(2)	(3)	(4)	(5)	(6)	(7)	**appealing**
not attractive	(1)	(2)	(3)	(4)	(5)	(6)	(7)	attractive
not likable	(1)	(2)	(3)	(4)	(5)	(6)	(7)	**likable**

Below are 11 scales with ratings from 1 to 7. For each scale, please circle the number that best indicates how you feel about smoking. For example, 1 = Boring, and 7 = Interesting.

14. I feel that <u>smoking</u> is...

boring	(1)	(2)	(3)	(4)	(5)	(6)	(7)	**interesting**
bad	(1)	(2)	(3)	(4)	(5)	(6)	(7)	good
negative	(1)	(2)	(3)	(4)	(5)	(6)	(7)	**positive**
useless	(1)	(2)	(3)	(4)	(5)	(6)	(7)	useful
worthless	(1)	(2)	(3)	(4)	(5)	(6)	(7)	**valuable**
poor	(1)	(2)	(3)	(4)	(5)	(6)	(7)	outstanding
not for me	(1)	(2)	(3)	(4)	(5)	(6)	(7)	**for me**
weak	(1)	(2)	(3)	(4)	(5)	(6)	(7)	strong
not appealing	(1)	(2)	(3)	(4)	(5)	(6)	(7)	**appealing**
not attractive	(1)	(2)	(3)	(4)	(5)	(6)	(7)	attractive
not likable	(1)	(2)	(3)	(4)	(5)	(6)	(7)	**likable**

15. How accurately do you feel this warning label depicts risks to your health?

1	2	3	4	5	6	7
Not at All Accurately						**Very Accurately**

16. How accurately do you feel this warning label depicts the benefits of <u>not</u> smoking?

1	2	3	4	5	6	7
Not at All Accurately						**Very Accurately**

17. How relevant is this warning label to the concerns of people like you?

1	2	3	4	5	6	7
Not at All Relevant						**Extremely Relevant**

18. To what extent do you think that this warning label will reduce a smoker's daily cigarette consumption?

1	2	3	4	5	6	7
Not at All						**A lot**

19. How effective do you think this warning label is in reducing smoking?

1	2	3	4	5	6	7
Not at All Effective						**Extremely Effective**

20. How effective is this warning label in increasing people's understanding of the negative health consequences of smoking?

1	2	3	4	5	6	7
Not at All Effective						**Extremely Effective**

21. To what extent do you think this warning label will affect how often smokers will think about the health risks of smoking?

1	2	3	4	5	6	7
Not at All						**A lot**

22. To what extent do you think this warning label will improve a smoker's confidence in his or her ability to quit?

1	2	3	4	5	6	7
Not at All						**A lot**

23. To what extent do you think this warning label will increase the likelihood that a smoker will quit smoking?

1	2	3	4	5	6	7
Not at All						**A lot**

24. To what extent did you feel fear as a result of this warning label?

1	2	3	4	5	6	7
Not at All						**A lot**

25. To what extent did you feel disgust as a result of this warning label?

1	2	3	4	5	6	7
Not at All						**A lot**

26. In the next year, how likely is it that you will smoke one or more cigarettes?

1	2	3	4	5	6	7
Not at All Likely						**Extremely Likely**

27. In the next year, how likely is it that you will quit smoking? *(If you do not smoke, please skip this question and continue on to the next page)*

1	2	3	4	5	6	7
Not at All Likely						**Extremely Likely**

Please turn to the next page to see Warning Label #2

ATTENTION

BY NOT SMOKING
YOU CAN AVOID
MOUTH DISEASES

When you do not smoke you reduce
your risk of oral cancer,
gum diseases and tooth loss.

CIGARETTES

25 Cigarettes King Size   FULL FLAVOR

Below are 11 scales with ratings from 1 to 7. For each scale, please circle the number that best indicates how you feel about the warning label. For example, 1 = Boring, and 7 = Interesting.

28. I feel that the <u>warning label</u> is...

boring	(1)	(2)	(3)	(4)	(5)	(6)	(7)	**interesting**
bad	(1)	(2)	(3)	(4)	(5)	(6)	(7)	**good**
negative	(1)	(2)	(3)	(4)	(5)	(6)	(7)	**positive**
useless	(1)	(2)	(3)	(4)	(5)	(6)	(7)	**useful**
worthless	(1)	(2)	(3)	(4)	(5)	(6)	(7)	**valuable**
poor	(1)	(2)	(3)	(4)	(5)	(6)	(7)	**outstanding**
not for me	(1)	(2)	(3)	(4)	(5)	(6)	(7)	**for me**
weak	(1)	(2)	(3)	(4)	(5)	(6)	(7)	**strong**
not appealing	(1)	(2)	(3)	(4)	(5)	(6)	(7)	**appealing**
not attractive	(1)	(2)	(3)	(4)	(5)	(6)	(7)	**attractive**
not likable	(1)	(2)	(3)	(4)	(5)	(6)	(7)	**likable**

Below are 11 scales with ratings from 1 to 7. For each scale, please circle the number that best indicates how you feel about smoking. For example, 1 = Boring, and 7 = Interesting.

29. I feel that <u>smoking</u> is...

boring	(1)	(2)	(3)	(4)	(5)	(6)	(7)	**interesting**
bad	(1)	(2)	(3)	(4)	(5)	(6)	(7)	**good**
negative	(1)	(2)	(3)	(4)	(5)	(6)	(7)	**positive**
useless	(1)	(2)	(3)	(4)	(5)	(6)	(7)	**useful**
worthless	(1)	(2)	(3)	(4)	(5)	(6)	(7)	**valuable**
poor	(1)	(2)	(3)	(4)	(5)	(6)	(7)	**outstanding**
not for me	(1)	(2)	(3)	(4)	(5)	(6)	(7)	**for me**
weak	(1)	(2)	(3)	(4)	(5)	(6)	(7)	**strong**
not appealing	(1)	(2)	(3)	(4)	(5)	(6)	(7)	**appealing**
not attractive	(1)	(2)	(3)	(4)	(5)	(6)	(7)	**attractive**
not likable	(1)	(2)	(3)	(4)	(5)	(6)	(7)	**likable**

30. How accurately do you feel this warning label depicts risks to your health?

1	2	3	4	5	6	7
Not at All Accurately						**Very Accurately**

31. How accurately do you feel this warning label depicts the benefits of <u>not</u> smoking?

1	2	3	4	5	6	7
Not at All Accurately						**Very Accurately**

32. How relevant is this warning label to the concerns of people like you?

1	2	3	4	5	6	7
Not at All Relevant						**Extremely Relevant**

33. To what extent do you think that this warning label will reduce a smoker's daily cigarette consumption?

1	2	3	4	5	6	7
Not at All						**A lot**

34. How effective do you think this warning label will be in reducing smoking?

1	2	3	4	5	6	7
Not at All Effective						**Extremely Effective**

35. How effective is this warning label in increasing people's understanding of the negative health consequences of smoking?

1	2	3	4	5	6	7
Not at All Effective						**Extremely Effective**

36. To what extent do you think this warning label will affect how often smokers will think about the health risks of smoking?

1	2	3	4	5	6	7
Not at All						**A lot**

37. To what extent do you think this warning label will improve a smoker's confidence in his or her ability to quit?

1	2	3	4	5	6	7
Not at All						**A lot**

38. To what extent do you think this warning label will increase the likelihood that a smoker will quit smoking?

1	2	3	4	5	6	7
Not at All						**A lot**

39. To what extent did you feel fear as a result of this warning label?

1	2	3	4	5	6	7
Not at All						**A lot**

40. To what extent did you feel disgust as a result of this warning label?

1	2	3	4	5	6	7
Not at All						**A lot**

41. In the next year, how likely is it that you will smoke one or more cigarettes?

1	2	3	4	5	6	7
Not at All Likely						**Extremely Likely**

42. In the next year, how likely is it that you will quit smoking? *(If you do not smoke, please skip this question)*

1	2	3	4	5	6	7
Not at All Likely						**Extremely Likely**

Thank you for Participating!

APPENDIX D

QUESTIONNAIRE: VERSION 3

Cigarette Package Warning Label Survey

School of Communication
The Ohio State University
Columbus, OH 43210

Researchers in the School of Communication at the Ohio State University would like your participation in a survey. The purpose of this survey is to learn about your opinions of cigarette package warning labels. We would like you to look at some warning labels and then provide your careful and honest feedback.

There are 2 warning label in this survey. Please look at them and answer the questionnaire that follows. It is important that we obtain <u>YOUR</u> <u>HONEST</u> evaluation of the warning label.

Please answer each question to the best of your ability. <u>You will face no risks and receive no payment.</u> It is important to note that: (1) your participation is voluntary, (2) you may withdraw from the study at any time with no penalty, and (3) you are free to not answer any question for any reason. You will be guaranteed anonymity; and please do not write your name on the questionnaire. The questionnaire will take approximately 15 to 20 minutes to fill out.

If you have any questions while completing the questionnaire, please raise your hand and the questionnaire administrator will discuss your question with you.

Please complete the questionnaire on your own, without discussing it with your friends.

We would like to know some information concerning your background. Please answer the following questions:

1. Age: _____

2. Gender: _____ male _____ female

3. My ethnicity is... (Please circle the number.)
   (15) White, Caucasian, European, not Hispanic
   (16) Chinese, Chinese-American
   (17) Japanese, Japanese-American
   (18) Korean, Korean-American
   (19) Black, African-American
   (20) Hispanic, Latino(a)
   (21) Other (write in): _____

4. What is the highest level of education your mother has completed (Place a check by your answer)?
   _____ less than a High School Degree
   _____ High School Degree
   _____ Trade/Vocational School
   _____ Some College/University
   _____ College/University Degree
   _____ Graduate Degree (e.g., Master's, Ph.D.)
   _____ Other (please specify) _____

5. What is the highest level of education your father has completed (Place a check by your answer)?
   _____ less than a High School Degree
   _____ High School Degree
   _____ Trade/Vocational School
   _____ Some College/University
   _____ College/University Degree
   _____ Graduate Degree (e.g., Master's, Ph.D.)
   _____ Other (please specify) _____

6. What is your mother's occupation? (if retired/not working/deceased, list previous occupation) _____.

7. What is your father's occupation? (if retired/not working/deceased, list previous occupation)_____.

8. Put a check by the grade that is closest to your overall grade average in high school.
   _____ A+   _____ B+   _____ C+   _____ D+
   _____ A   _____ B   _____ C   _____ D
   _____ A-   _____ B-   _____ C-   _____ D- or less

9. What grade are you in now?
   _____ 9th   _____ 11th
   _____ 10th   _____ 12th

10. How many <u>cigarettes</u> have you smoked within the <u>past 30 days</u> (please check the appropriate category):
    _____ none
    _____ 1 to 5
    _____ 6 to 10
    _____ 11 to 15
    _____ more than 15

11. Which of the following do you consider yourself (please check one):
_____ Smoker   _____ Non-smoker

The following are some situations in which certain people may be tempted to smoke Please indicate whether you are sure that you could refrain or keep yourself from smoking in each situation.

12. Please answer the following questions by circling the number (from 1 to 7) that best describes your feeling.

		Not at All						Absolutely
a.	When I feel nervous I can keep myself from smoking	1	2	3	4	5	6	7
b.	When I feel depressed I can keep myself from smoking	1	2	3	4	5	6	7
c.	When I am angry I can keep myself from smoking	1	2	3	4	5	6	7
d.	When I feel anxious I can keep myself from smoking.	1	2	3	4	5	6	7
e.	When I want to think about a difficult problem I can keep myself from smoking.	1	2	3	4	5	6	7
f.	When I feel the urge to smoke I can keep myself from smoking.	1	2	3	4	5	6	7
g.	When hanging out with friends I can keep myself from smoking.	1	2	3	4	5	6	7
h.	When celebrating something I can keep myself from smoking.	1	2	3	4	5	6	7
i.	When drinking alcoholic beverages I can keep myself from smoking.	1	2	3	4	5	6	7
j.	When I am with smokers I can keep myself from smoking.	1	2	3	4	5	6	7
k.	After having a meal I can keep myself from smoking.	1	2	3	4	5	6	7
l.	When having coffee or tea I can keep myself from smoking.	1	2	3	4	5	6	7

Please turn to the next page to see Warning Label #1

Below are 11 scales with ratings from 1 to 7. For each scale, please circle the number that best indicates how you feel about the warning label. For example, 1 = Boring, and 7 = Interesting.

13. I feel that the <u>warning label</u> is...

boring	(1)	(2)	(3)	(4)	(5)	(6)	(7)	**interesting**
bad	(1)	(2)	(3)	(4)	(5)	(6)	(7)	good
negative	(1)	(2)	(3)	(4)	(5)	(6)	(7)	**positive**
useless	(1)	(2)	(3)	(4)	(5)	(6)	(7)	useful
worthless	(1)	(2)	(3)	(4)	(5)	(6)	(7)	valuable
poor	(1)	(2)	(3)	(4)	(5)	(6)	(7)	outstanding
not for me	(1)	(2)	(3)	(4)	(5)	(6)	(7)	for me
weak	(1)	(2)	(3)	(4)	(5)	(6)	(7)	strong
not appealing	(1)	(2)	(3)	(4)	(5)	(6)	(7)	**appealing**
not attractive	(1)	(2)	(3)	(4)	(5)	(6)	(7)	attractive
not likable	(1)	(2)	(3)	(4)	(5)	(6)	(7)	**likable**

Below are 11 scales with ratings from 1 to 7. For each scale, please circle the number that best indicates how you feel about smoking. For example, 1 = Boring, and 7 = Interesting.

14. I feel that <u>smoking</u> is...

boring	(1)	(2)	(3)	(4)	(5)	(6)	(7)	**interesting**
bad	(1)	(2)	(3)	(4)	(5)	(6)	(7)	**good**
negative	(1)	(2)	(3)	(4)	(5)	(6)	(7)	**positive**
useless	(1)	(2)	(3)	(4)	(5)	(6)	(7)	**useful**
worthless	(1)	(2)	(3)	(4)	(5)	(6)	(7)	**valuable**
poor	(1)	(2)	(3)	(4)	(5)	(6)	(7)	**outstanding**
not for me	(1)	(2)	(3)	(4)	(5)	(6)	(7)	**for me**
weak	(1)	(2)	(3)	(4)	(5)	(6)	(7)	**strong**
not appealing	(1)	(2)	(3)	(4)	(5)	(6)	(7)	**appealing**
not attractive	(1)	(2)	(3)	(4)	(5)	(6)	(7)	**attractive**
not likable	(1)	(2)	(3)	(4)	(5)	(6)	(7)	**likable**

15. How accurately do you feel this warning label depicts risks to your health?

1	2	3	4	5	6	7
Not at All Accurately						**Very Accurately**

16. How accurately do you feel this warning label depicts the benefits of <u>not</u> smoking?

1	2	3	4	5	6	7
Not at All Accurately						**Very Accurately**

17. How relevant is this warning label to the concerns of people like you?

1	2	3	4	5	6	7
Not at All Relevant						**Extremely Relevant**

18. To what extent do you think that this warning label will reduce a smoker's daily cigarette consumption?

1	2	3	4	5	6	7
Not at All						**A lot**

19. How effective do you think this warning label is in reducing smoking?

1	2	3	4	5	6	7
Not at All Effective						**Extremely Effective**

20. How effective is this warning label in increasing people's understanding of the negative health consequences of smoking?

1	2	3	4	5	6	7
Not at All Effective						**Extremely Effective**

21. To what extent do you think this warning label will affect how often smokers will think about the health risks of smoking?

1	2	3	4	5	6	7
Not at All						**A lot**

22. To what extent do you think this warning label will improve a smoker's confidence in his or her ability to quit?

1	2	3	4	5	6	7
Not at All						**A lot**

23. To what extent do you think this warning label will increase the likelihood that a smoker will quit smoking?

1	2	3	4	5	6	7
Not at All						**A lot**

24. To what extent did you feel fear as a result of this warning label?

1	2	3	4	5	6	7
Not at All						**A lot**

25. To what extent did you feel disgust as a result of this warning label?

1	2	3	4	5	6	7
Not at All						**A lot**

26. In the next year, how likely is it that you will smoke one or more cigarettes?

1	2	3	4	5	6	7
Not at All Likely						**Extremely Likely**

27. In the next year, how likely is it that you will quit smoking? *(If you do not smoke, please skip this question and continue on to the next page)*

1	2	3	4	5	6	7
Not at All Likely						**Extremely Likely**

Please turn to the next page to see Warning Label #2

Below are 11 scales with ratings from 1 to 7. For each scale, please circle the number that best indicates how you feel about the warning label. For example, 1 = Boring, and 7 = Interesting.

28. I feel that the <u>warning label</u> is...

boring	(1)	(2)	(3)	(4)	(5)	(6)	(7)	**interesting**
bad	(1)	(2)	(3)	(4)	(5)	(6)	(7)	**good**
negative	(1)	(2)	(3)	(4)	(5)	(6)	(7)	**positive**
useless	(1)	(2)	(3)	(4)	(5)	(6)	(7)	**useful**
worthless	(1)	(2)	(3)	(4)	(5)	(6)	(7)	**valuable**
poor	(1)	(2)	(3)	(4)	(5)	(6)	(7)	**outstanding**
not for me	(1)	(2)	(3)	(4)	(5)	(6)	(7)	**for me**
weak	(1)	(2)	(3)	(4)	(5)	(6)	(7)	**strong**
not appealing	(1)	(2)	(3)	(4)	(5)	(6)	(7)	**appealing**
not attractive	(1)	(2)	(3)	(4)	(5)	(6)	(7)	**attractive**
not likable	(1)	(2)	(3)	(4)	(5)	(6)	(7)	**likable**

Below are 11 scales with ratings from 1 to 7. For each scale, please circle the number that best indicates how you feel about smoking. For example, 1 = Boring, and 7 = Interesting.

29. I feel that <u>smoking</u> is...

boring	(1)	(2)	(3)	(4)	(5)	(6)	(7)	**interesting**
bad	(1)	(2)	(3)	(4)	(5)	(6)	(7)	**good**
negative	(1)	(2)	(3)	(4)	(5)	(6)	(7)	**positive**
useless	(1)	(2)	(3)	(4)	(5)	(6)	(7)	**useful**
worthless	(1)	(2)	(3)	(4)	(5)	(6)	(7)	**valuable**
poor	(1)	(2)	(3)	(4)	(5)	(6)	(7)	**outstanding**
not for me	(1)	(2)	(3)	(4)	(5)	(6)	(7)	**for me**
weak	(1)	(2)	(3)	(4)	(5)	(6)	(7)	**strong**
not appealing	(1)	(2)	(3)	(4)	(5)	(6)	(7)	**appealing**
not attractive	(1)	(2)	(3)	(4)	(5)	(6)	(7)	**attractive**
not likable	(1)	(2)	(3)	(4)	(5)	(6)	(7)	**likable**

30. How accurately do you feel this warning label depicts risks to your health?

1	2	3	4	5	6	7
Not at All Accurately						**Very Accurately**

31. How accurately do you feel this warning label depicts the benefits of <u>not</u> smoking?

1	2	3	4	5	6	7
Not at All Accurately						**Very Accurately**

32. How relevant is this warning label to the concerns of people like you?

1	2	3	4	5	6	7
Not at All Relevant						**Extremely Relevant**

33. To what extent do you think that this warning label will reduce a smoker's daily cigarette consumption?

1	2	3	4	5	6	7
Not at All						**A lot**

34. How effective do you think this warning label will be in reducing smoking?

1	2	3	4	5	6	7
Not at All Effective						**Extremely Effective**

35. How effective is this warning label in increasing people's understanding of the negative health consequences of smoking?

1	2	3	4	5	6	7
Not at All Effective						**Extremely Effective**

36. To what extent do you think this warning label will affect how often smokers will think about the health risks of smoking?

1	2	3	4	5	6	7
Not at All						**A lot**

37. To what extent do you think this warning label will improve a smoker's confidence in his or her ability to quit?

1	2	3	4	5	6	7
Not at All						**A lot**

38. To what extent do you think this warning label will increase the likelihood that a smoker will quit smoking?

1	2	3	4	5	6	7
Not at All						**A lot**

39. To what extent did you feel fear as a result of this warning label?

1	2	3	4	5	6	7
Not at All						**A lot**

40. To what extent did you feel disgust as a result of this warning label?

1	2	3	4	5	6	7
Not at All						**A lot**

41. In the next year, how likely is it that you will smoke one or more cigarettes?

1	2	3	4	5	6	7
Not at All Likely						**Extremely Likely**

42. In the next year, how likely is it that you will quit smoking? *(If you do not smoke, please skip this question)*

1	2	3	4	5	6	7
Not at All Likely						**Extremely Likely**

Thank you for Participating!