Maybe It Should Be a Laughing Matter:
A Further Exploration of the Persuasive Power of Humorous Threat Appeals

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A Thesis in the John Molson School of Business

Presented in Partial Fulfillment of Requirements for the
Degree of Master of Science in Administration (Marketing) at
Concordia University
Montreal, Quebec, Canada

July 2015

CONCORDIA UNIVERSITY

School of Graduate Studies

This is to certify that the thesis prepared

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Entitled: Maybe It Should Be a Laughing Matter: A Further Exploration of the Persuasive Power of Humorous Threat Appeals

and submitted in partial fulfillment of the requirements for the degree of

Master of Science in Administration (Marketing)

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ABSTRACT

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The purpose of this research is to further explore alternatives to pure fear appeal advertisements. Although found to be effective, fear appeals also have numerous shortcomings, such as elicitation of defensive reactions and lack of persuasiveness in the real-world due to their omnipresent nature. In an effort to overcome these weaknesses, and to help further improve the persuasiveness of fear appeals, previous literature has suggested integrating positive appeals such as humor. As such, the current study explores the comparative effectiveness of humor, fear, and combined humor and fear advertisements. Additionally, the complexity of the recommended response is investigated as a potential moderator of persuasion. Furthermore, the current study builds upon previous work by using an established persuasion model, Witte's extended parallel process (Witte, 1992), to account for the mediating cognitive processes leading to message acceptance or rejection. Results show that ads generating low fear were equally persuasive regardless if humor was present or absent from the message, and that complexity of the recommendation did not affect persuasion for any of the emotional appeals. Interestingly, it was found that a higher level of fear led to lower levels of message acceptance, and that this effect was more pronounced in the presence of humor. Although no support was found for any of the hypothesized relationships, additional analyses found that all of the ads were successfully persuasive. Future research directions to expand upon the limited literature on the topic are discussed, and actionable insights for marketers regarding the creation of effective persuasive messages are provided.

ACKNOWLEDGEMENTS

This journey would not have been possible without the tremendous amount of support, help and patience from those around me. First and foremost, I would like to express my utmost gratitude to my supervisor, Dr. Bianca Grohmann, whose guidance, support, and assistance allowed me to persevere with confidence until the very end. I'm extremely thankful for the time she has dedicated to me over the last several months, and for allowing me to be curious and independent in my research while at the same time providing constant feedback and making sure I stayed on track. I am also thankful for the helpful comments and feedback provided by my committee members, Dr. Darlene Walsh and Dr. Mrugank Thakor.

I would also like to thank my mother and step-father for their unwavering support throughout all my life's endeavors and for always pushing me to strive for more. No matter what path I decided to explore, they were always right behind me, believing in my abilities and rooting for my success. Furthermore, I'd like to thank my sister, Iulia, whose bubbly energy and fun spirit keeps us all young and reminds us not to be so serious all of the time.

I would also like to express my deepest gratitude to Jason for sticking by my side every day for the last seven years and counting. I would not be the person I am today without his motivation and unconditional love. Also, a huge thank you to my dear friend Sandy for always inspiring me, igniting my curiosity, and being a constant source of caffeinated beverages. A special thank you to Mary, Josie and Mel as well, for always being there for me and showing me the true importance of friendship. To Chris and Zack, thank you for your mentorship, feedback, and great company over the past year. Our weekly sessions allowed all of our ideas to not only flourish, but to materialize as well, and for that I am extremely grateful. I am also thankful for all of the great people I've had the chance to meet and befriend during the M.Sc. program, and I hope our friendships will continue to grow outside the bounds of school.

Finally, a great thank you to Zeus. May we all chase our dreams with the passion and enthusiasm that you chase balls.

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Introduction

Fear appeals work by arousing fear in the viewer concerning a threatening topic such as cancer, ideally motivating them to adaptively handle this threat by following the recommended course of action (Witte & Allen, 2000). Fear appeals have been employed on occasion to sell consumer goods, but more often to promote healthy and safe habits through public health campaigns or public service announcements. Generally speaking, fear appeals have been found to work well and be relatively persuasive (Gore & Bracken, 2005; Ruiter, Kok, Verplanken, & Brug, 2001; Williams, 2012b; Witte & Allen, 2000), although several drawbacks have been brought up in the literature. Namely, the persuasiveness of fear appeals is believed to be on the decline due to their ubiquitous presence nowadays (Lewis, Watson, White, & Tay, 2007), fear appeals may not be appropriate for rebellious, sensation-seeking audiences (Lee & Ferguson, 2002), nor audiences with high pre-existing fear towards the threatening topic (Muthusamy, Levine, & Weber, 2009), and may unwittingly elicit defensive reactions in the target audience, for whom the topic is highly personally relevant, prompting maladaptive responses (Block & Williams, 2002; Liberman & Chaiken, 1992). Furthermore, ethically speaking, fear appeals have been regarded by some as inducing unnecessary anxiety and distress in viewers, and also as having detrimental effects on unintended audiences, such as children (Hastings, Stead, & Webb, 2004; Williams 2012a; Witte & Allen, 2000).

In order to help deal with these aforementioned shortcomings of fear appeals, the incorporation of humor into fear appeals is proposed. Humor has been found to help lower defensive reactions (Mukherjee & Dubé, 2012), which in turn can increase the persuasiveness of the message. Humor also serves to increase attention paid to the ad, increase attitude towards the ad, increase positive cognitions and likewise reduce negative cognitions by diverting counter-arguments (Eisend, 2009; Eisend, 2011; Voss, 2009; Weinberger & Gulas, 1992). Moreover, the use of humor to communicate a threat can be observed quite often in various advertising campaigns. While some of these ads may emphasize the humor aspect (see Appendix A for example), and others on the fear component (see Appendix B for example), the presence of both emotions is evident. However, to date, very few studies have explored the persuasive power of these mixed appeals (Conway & Dubé, 2002; Mukherjee & Dubé, 2012; Voss 2009; Yoon &

Tinkham, 2013). More research is needed to better understand the mechanisms by which and the conditions under which these types of ads successfully deliver their message.

Firstly, the current study aims to expand upon this underdeveloped topic by exploring humor, fear, and mixed humor and fear appeals within the framework of an existing and well-founded fear appeal model, Witte's (1992) Extended Parallel Process Model (EPPM). Moreover, the persuasive goal of the appeals used in this study is to raise awareness about skin cancer and to promote preventative action. Some of the previous studies, on the other hand, focused their ads on selling a fictional consumer product. In reality, fear appeals are often used for public health and safety campaigns more so than to sell a product, and thus this should be reflected in the research conducted. Secondly, the current study investigates a new potential moderator of persuasion, namely the complexity of the recommended behavior communicated to the viewer.

Theoretical Foundation

Fear and Fear Appeals

Fear is an emotion elicited in response to a threat (Witte, 1992). A threat represents negative consequences which an individual wants to avoid. Fear on the other hand, is aroused when a reader perceives the threat to be both significant and personally relevant. Ideally, the purpose of fear is to motivate the individual experiencing it to take protective action by either avoiding or escaping from the threatening stimulus (Rogers, 1975). Since fear is an affective state and hence cannot be measured directly, researchers have operationalized it as anxiety, physiological arousal, self-reported fear, or even self-reported ratings of concern or worry in response to a threat (Witte, 1992).

Advertisers have been taking advantage of this innate emotional response for decades by creating fear appeal advertisements. The resulting messages tend to demonstrate the risks and negative consequences of not purchasing an advertised product or service (Williams, 2012b). Insurance companies often use this tactic to persuade viewers that threats, such as unforeseen thefts or accidents, can be effectively managed by purchasing an insurance policy. More commonly, fear appeals have been employed for public health and safety campaigns on topics such as cancer awareness and prevention, smoking cessation, and safe-driving habits (Williams, 2012b). The purpose of these campaigns are to demonstrate the grave dangers of an addiction, disease, or habit, and hopefully incite enough fear in the public so that they may follow the given recommendations and adapt their current behaviors in a healthful way.

A salient example of fear appeals in the health domain is cigarette pack labeling. Due to the high prevalence and fatality associated with cigarette smoking, cigarette packs in the United States now require a written Surgeon General's warning label advising consumers of the health risks involved (CDC, 2013). In Canada, these warnings are also accompanied by extremely graphic pictures, often depicting gruesome physical deformities said to be caused by cigarettes (Health Canada, 2013).

The effectiveness of fear appeal theories has been researched extensively over the last few decades. Generally speaking, fear appeals have been found to be effective at persuading message recipients (Gore & Bracken, 2005; Ruiter et al., 2001; Williams, 2012b; Witte & Allen, 2000). The fear appeal theory on which the current study builds upon is Witte's (1992) Extended

Parallel Process Model (EPPM). Prior to providing a description of the EPPM and its components, the model's predecessors will be briefly discussed.

Fear appeal theories preceding the EPPM. There are three types of fear appeal theories: drive theories, parallel response models, and subjective expected utility (SEU) models (Witte & Allen, 2000). These theories model the various cognitive and behavioral responses elicited by fear appeal messages, and how it can lead to message acceptance, and in some cases, rejection.

The oldest of these theories is the fear-as-acquired drive model (Hovland, Janis, & Kelly, 1953). This model is founded upon the principles of learning theory, and proposes that people learn that certain threats are fearful. If the action they undertake in response to this threat results in a reduction of the danger it poses, it will become a learned behavior. In the future, when a similar threat is encountered, the same learned response would be used. Interestingly, although this model is no longer used to explain fear appeals, some components of the EPPM are reminiscent of the fear-as-acquired drive model. Namely, Hovland et al. (1953) noted that the behavioral response could be either adaptive, whereby danger is effectively managed, or maladaptive, whereby danger is emotionally coped with via defensive mechanisms (Popova, 2012).

A parallel response model was then put forth to help explain what the drive model could not. Leventhal's (1971) parallel response model takes after information processing models, such that an external stimulus leads to internal cognitive mediating factors, resulting in attitude or behavioral change. Adding to the dual outcome of fear appeals suggested in the drive model, the parallel response model specifies that an adaptive outcome is primarily cognitive in nature, while a maladaptive outcome is primarily emotional. These two processes were respectively dubbed "danger control process" and "fear control process", and the terminology still exists today as part of the EPPM.

Next, building upon the parallel response model, was Rogers' (1975) renowned protection motivation (PM) theory. The PM theory posits that the components of a fear appeal lead to respective cognitive mediation processes, which then form a protection motivation triggering an attitude change. The fear appeal components are *severity of the threat*, the *probability that the event will occur*, and *efficacy of recommended response*. *Self-efficacy* was

also added to the model later on as a fourth component (Maddux & Rogers, 1983). These four elements are part of the external stimulus: the message itself. Correspondingly, the cognitive mediating processes are an individual's appraisals of each of these components (Witte & Allen, 2000). *Severity of the threat* refers to the magnitude of the implied danger, and the *probability that the event will occur* denotes personal relevance, or an individual's susceptibility to the threat. These two elements make up the overarching dimension of threat appraisal. Furthermore, *efficacy of the recommended response* refers to how effective an individual believes the recommended course of action is to eliminate the threat, and *self-efficacy* is an individual's perception of how able he or she is to act upon this recommendation (Maddux & Rogers, 1983). Together, these two comprise the overarching dimension of efficacy appraisal.

The cognitive assessments of each of these elements together lead to the intent to adopt a recommended response. If the threat is perceived to be severe, relatively likely to occur, and steps can be effectively taken to prevent it, then protection motivation is aroused, leading to attitude change and action taken via recommended methods (Rogers, 1975).

Despite a few decades of mostly supportive research, researchers have pointed out several inconsistencies and weaknesses of the PM model. Firstly, the exact relationship between the cognitive appraisal variables, whether it is additive or multiplicative, has been revised and disputed since the model's inception. Other shortcomings include fear not being part of the model, and no mention of a message rejection outcome possibility (Witte & Allen, 2000). Nonetheless, this model marked a significant step in area of fear appeal theories, and provides a solid foundation for the EPPM.

Extended parallel process model (EPPM). In order to further advance fear appeal theory, Witte (1992) put forth the Extended Parallel Process Model (EPPM). Although the EPPM is a research-based theoretical model, its main purpose is to be used as a guide for health communication practitioners. The model can help uncover a target audience's current knowledge about a threat, and also provide guidance in designing and evaluating health campaign material. It is relatively easy to use and understand, and gives clear guidelines about the components that should be included in a fear appeal message.

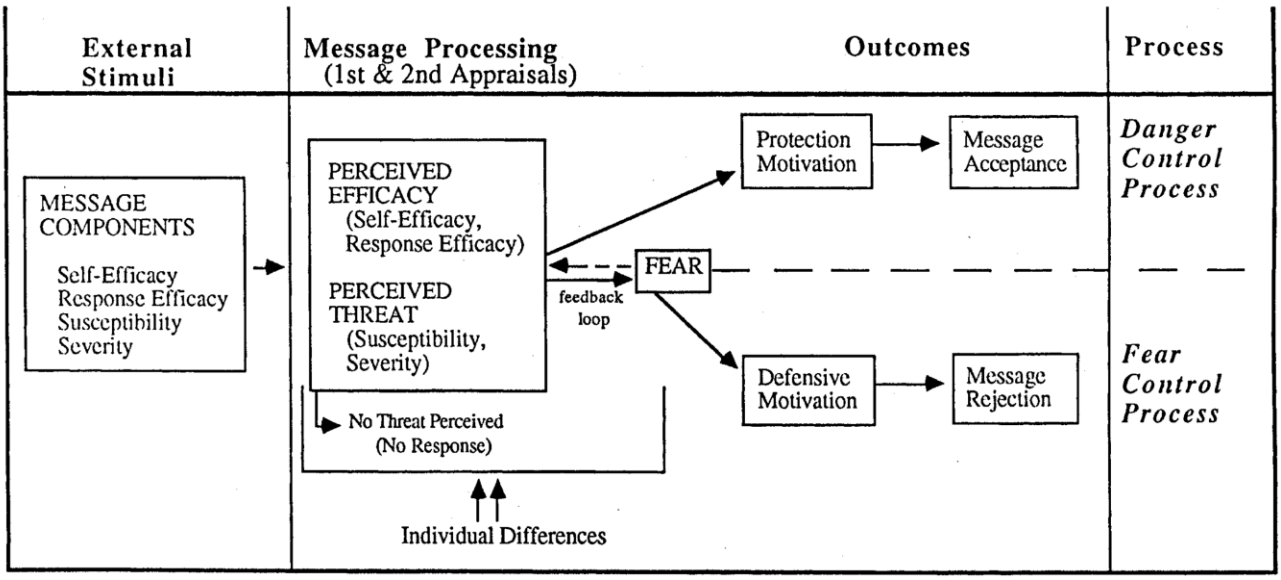


Figure 1. The extended parallel process model (Witte, 1992).

The EPPM draws and builds upon its predecessors. As implied by the name, it's an *extension* of Leventhal's (1971) parallel response model from which it borrowed the basic structure. Protection motivation and the danger control process were borrowed from Rogers' PM theory (1975; 1983) and the concept of a maladaptive, defensive fear control process was borrowed from Hovland, Janis, and Kelly's fear-as-acquired drive model (1953).

Firstly, in response to the stimuli, individuals appraise the threat, whereby they evaluate the *severity* of the threat and their *susceptibility* to it. *Perceived threat* is calculated by adding perceived susceptibility and perceived severity. If the threat is not deemed to be serious enough, or if individuals feel immune to its dangers, the message is rejected right away. If, however, both severity and susceptibility are perceived to be high enough, the message continues to be processed and individuals then undergo efficacy appraisal. In this stage, individuals evaluate both the *response efficacy* and their *self-efficacy* with regards to carrying out the prescribed behavior. *Perceived efficacy* comprises the additive components of perceived self-efficacy and perceived response efficacy.

If perceived efficacy is lower than perceived threat, the maladaptive *fear control process* is activated in which defensive motivation leads to *message rejection*. In this scenario, due to an individual's belief of his inability to handle the threat, he opts to control his fear through maladaptive coping responses such as denial, threat minimization, wishful thinking, defensive

avoidance, or reactance (Witte, 1992; Witte & Allen, 2000). Alternatively, if perceived efficacy is higher than perceived threat, then the adaptive *danger control process* is initiated, whereby individuals are led to *accept the message* through protection motivation. Danger control signifies that the individual was successfully persuaded by the fear appeal, and the recommended and effective course of action prescribed by the message will be pursued in order to eliminate or protect oneself from the threat. Witte (1996) terms this the "critical point" at which the person transcends the assumed default fear control mode and starts operating in adaptive danger control mode.

In sum, the goal of health risk messages is to induce danger control process whereby people heed the recommendations provided to them. The EPPM is the most recent and most comprehensive model able to explain both the successes and failures of fear appeal messages. Many studies have been conducted on its effectiveness and its applicability, and little changes have been made to the model in its over twenty years of existence. The model has been found to be parsimonious, in that its entire explanatory framework centers around two variables, threat and efficacy (Maloney, Lapinski, & Witte, 2011). Additionally, the model has been operationalized via Witte's (1996) Risk Behavior Diagnosis scale, which is a questionnaire encompassing measures of the model's components, and has been used by researchers and practitioners alike. With the help of this scale, strong evidence for the model's validity, predictability, and explanatory power has been generated (Maloney et al., 2011).

The EPPM has been used to create and test novel health communication materials, as well as to help evaluate existing materials covering a range of topics. These diverse topics include meningitis awareness and prevention (Gore & Bracken, 2005), HIV and AIDS prevention (Muthusamy et al., 2009), healthy eating behaviors (McKinley, 2009), anti-smoking campaigns (LaVoie & Quick, 2013), anti-drug campaigns (Shi & Hazen, 2012), cardiovascular risk awareness (McKay, Berkowitz, Blumberg, & Goldberg, 2004), electromagnetic fields risk awareness (McMahan, Witte, & Meyer, 1998), Human Papilloma Virus prevention (Carcippolo et al., 2013), workplace safety messages (Basil, Basil, Deshpande, & Lavack, 2013), anti-speeding messages (Lewis, Watson, & White, 2010), and bed bug awareness (Goodall & Reed, 2013). Furthermore, the EPPM's applications have been extended past fear appeals, and have been successfully applied to emotional appeals such as annoyance/agitation, pride, and humor (Lewis, Watson, & White, 2013).

The EPPM model will be used as the base explanatory framework for the current study, and its applications will be extended to humor appeals and combined humor and fear appeals. Additionally, a new moderator, namely the complexity of the recommended behavior, will be examined within the tenets of the model. In the next section, problems associated with pure fear appeals will be discussed. These drawbacks provide the motivating force for finding alternative approaches of communicating health risks.

Shortcomings of fear appeal: A call for change. Despite the apparent effectiveness of fear appeals on their own, many arguments can be made as to why they need to be improved upon. Firstly, the persuasiveness of fear appeals may be on the decline. Considering that fear appeal studies often take place in a laboratory setting, results may not be as generalizable in full to the real world. In a qualitative study aimed at gathering the public's opinion on road safety advertisements in Australia, Lewis et al. (2007) found that some of their participants felt that appeals drawing on fear and negative consequences may be losing their impact since they have become so commonplace. As such, the viewers are no longer shocked by the graphic images or have simply grown tired of seeing them, and so the advertisements often go unnoticed.

Secondly, fear appeals have been found to have the unintended effect of encouraging the unwanted behavior in rebellious individuals (Lee & Ferguson, 2002). A lack of impact, and even an unintended boomerang effect has been noted in some health campaigns. The latter effect, referred to as psychological reactance, has been found to take place regardless if the campaign's goals are to inhibit a harmful behavior or promote a healthful behavior (Burgoon, Alvaro, Grandpre, & Voulodakis, 2002). This phenomenon takes place when individuals feel that their behavioral freedom is being threatened by persuasive messages. In response, individuals build a resistance to persuasion and often react by doing the opposite of what is being suggested in order to restore their sense of freedom. Similarly, McKinley (2009) found that when the threat of obesity was portrayed to be extremely severe, women scored higher on measures of disordered eating attitudes and behaviors. This effect was found despite the inclusion of an efficacious recommendation of healthy eating behaviors in the message. Furthermore, Lee and Ferguson (2002) found that high risk-taking individuals are likely to actually increase their risky behavior in response to a fear appeal anti-smoking advertisement. These researchers posit that rebellious

individuals enjoy taking risks for the sake of it, and hence are less likely to quit smoking after viewing the fear appeal ad as compared to those who scored lower on risk-taking tendencies.

Thirdly, fear appeal ads were shown to be ineffective for audiences with high levels of pre-existing fear towards the threat. Muthusamy et al. (2009) tested the efficacy of fear appeal ads aimed at preventing the further spread of HIV/AIDS in a sample from Namibia. Due to the extremely high prevalence of HIV/AIDS in this African country, much of its population is already highly fearful of the disease and its devastating effects. The authors found that manipulating the threat level did not affect perceptions of fear, nor did it influence the adoption of adaptive attitudes, intentions and behaviors. The incredibly high level of pre-existing fear overshadowed any efficacy perceptions, and thus the authors advocate against the continued use of fear appeals with such audiences.

Fourthly, defensive reactions are a common outcome of fear appeal ads, especially in those individuals who are trying to stop an unhealthy behavior, such as smoking. These reactions render a fear appeal futile in promoting adaptive responses (Block & Williams, 2002; Lieberman & Chaiken, 1992). One of the important aspects of fear appeal messages is the personal relevancy of the health issue to the individual, denoted as susceptibility to the threat. Liberman and Chaiken (1992) found that high personal relevancy may in fact incite biased processing of the threatening information, resulting in defensive reactions aimed at minimizing threat, instead of adaptively dealing with it. Moreover, Block and Williams (2002) add that those most at risk are the ones most likely to process information defensively. The threat may seem too overwhelming, and thus the message is likely to be ignored or denied by the responder. Likewise, Hastings et al. (2004) mention that not everyone at risk has the resources available to follow up on the recommended response. These ill-equipped individuals are likely to become defensive and angry due to feelings of helplessness.

Lastly, ethical concerns have been brought up by some, mentioning that the use of shocking fear appeal campaigns can have deleterious effects on audiences. Witte and Allen (2000) point out that fear appeals may unintentionally produce feelings of disgust, irritation, emotional instability, and even depression in a viewer, thus creating a fair amount of distress. Hastings et al. (2004) state that fear appeals may also arouse a paralyzing anxiety in response to the threat, impeding an individual's help-seeking efforts. Moreover, induced anxiety may reinforce the unintended behavior for some, such as smokers who often turn to cigarettes as a

means of diffusing discomfort and anxiety. Furthermore, although these messages may be targeted to a certain group, they are often seen by unintended audiences, such as children, which can become highly distressed by the graphic images and shocking information often present in fear appeals (Hastings et al., 2004). Williams (2012a) also argues that some view fear appeals as an unethical and forceful way of manipulating behavior. The author draws attention to the fact that arousing high levels of fear may interfere with individuals' rational thought process, thus limiting their ability to make a free choice.

Each of these arguments provides a strong case as to why something needs to be done in order to buffer the negative and potentially unethical effects of fear appeals. Recently, researchers have suggested and investigated alternatives such as using positive emotional appeals to communicate health risks. More specifically, and pertinent to the current study, some studies have looked at combining humor and fear together to create a mixed emotional appeal, drawing on each emotion's strengths to compensate for the other's weaknesses. Before delving further into this topic, a brief review of humor in advertising will be provided.

Humor in Advertising

Humor has a relatively short history in the advertising world. As Beard (2005) recounts, in the early twentieth century humor was rarely used in advertisements as it was frowned upon for being an improper way to sell products. Slowly over time, aided by the creative revolution that took place in the 1960s, humor started appearing more often in advertisements. This light-hearted approach was reflective of the social backdrop during those times. Additionally, with the advent of television, advertisers felt that televised commercials needed to be interesting and entertaining. Afterwards, throughout the 1970s, marketers became divided depending on their beliefs in using soft-sell or hard-sell tactics to promote their products. Humor began to take precedence shortly thereafter, and has since evolved, shaped and influenced by consumers' acceptance and demands.

Humor's effectiveness has been hotly debated in the literature, mostly due to its highly subjective nature. However, through the review of recent meta-analyses (Eisend, 2009; 2011; Weinberger & Gulas, 1992), several positive conclusions can be drawn. Firstly, humor has been found to be a great attention-grabbing technique, helping to increase attention paid to the ad, awareness, attitude towards the ad, and even to enhance source liking (Eisend, 2009; Weinberger

& Gulas, 1992). Additionally, comprehension of the ad does not appear to be harmed, and some evidence exists in support of humor actually aiding comprehension (Weinberger & Gulas, 1992). Furthermore, humor serves to increase positive cognitions, since memory is more accessible during a positive affective state, and reduce negative cognitions related to the ad by diverting counter-arguments (Eisend, 2009; 2011; Voss, 2009).

According to Speck (1990), in order for humor to occur, advertisers need to employ at least one of the three following mechanisms: arousal-safety, disparagement, or incongruity. Arousal-safety is an affective mechanism, which consists of tension-arousal followed by a positive resolution, providing release and pleasure. Furthermore, disparagement is a social, interpersonal mechanism, which involves a playful attack on others, and can be exemplified by satire. Lastly, incongruity is a cognitive mechanism, which involves the use of unexpected, discrepant factors that the respondent has to reconcile. Spotts, Weinberger, and Parsons (1997) found incongruity to be the most commonly employed type of humor, while the other two mechanisms were found to be used quite rarely. Aside from these mechanisms, the intentional relatedness of the humor can also be divided into messages that are humor dominant, and those which are message dominant. The latter focuses on delivering information thus giving humor a less prominent, secondary role in the advertisement (Speck, 1990). Message-dominant humor is better for print media, since these channels are known for being more information-focused. Likewise, they were found to capture attention better than ads that were humor-dominant (Spotts et al., 1997).

The current study proposes to increase the effectiveness of fear appeals by adding humor, thus helping to curb some of the negative consequences of having a threatening stimulus. In the next section, studies that have incorporated humor into fear appeals will be reviewed.

Adding Humor to Fear Appeals

Several researchers have advocated for the use of positive appeals as an alternative to fear appeals, and have even suggested combining both positive and negative appeals. Using humorous appeals for public service announcements and health campaigns has been suggested by some (Block & Williams, 2002; Hastings et al., 2004; Williams, 2012a; 2012b). Humor can persuade viewers to adopt the recommended strategies by initially grabbing their attention, and also serving to lower their defensive mechanisms, thus reducing counterarguments (Lee &

Ferguson, 2002; Nabi, Moyer-Gusé, & Byrne, 2007). However, the reality is that some topics do not easily lend themselves to a humorous appeal. Some issues addressed by public health campaigns include cancer screening and awareness, the dangers of drug abuse, and drinking and driving. Joking about these threatening topics may offend some viewers, and may even be considered highly inappropriate by others. Moreover, being too light-hearted about a heavy issue may keep people from taking it seriously, thus leading them to ignore the message's underlying implications completely. Furthermore, employing strictly positive appeals may not motivate the intended audience enough to follow through with the recommendations (Lee & Ferguson, 2002).

Humorous appeals have been found to be more likeable than fear appeals, to increase source liking and credibility, enhance argument strength, and also to reduce counterarguments while increasing support arguments (Lee & Shin, 2011; Nabi et al., 2007; Voss, 2009). However, fear appeals were found to create more interest and higher perceived danger (Lee & Shin, 2011). In a study on melanoma awareness communication materials, Richard et al. (1999) found that humorous leaflets were read by more people, effectively reaching a wider audience due to their more approachable nature. However, participants who had been provided with alarmist fear-based leaflets were more likely to remember the message. As Voss (2009) points out, these two types of appeals need not be exclusive, and in fact may be compatible. Humor could be used in conjunction with serious topics in order to help raise awareness or inform an audience about an issue (Nabi et al., 2007). Even provocative or taboo advertisements, which often evoke feelings of disgust, have been found to benefit from the addition of a humor element in order to increase attention paid to the ad (Sabri, 2012).

Ventis, Higbee, and Murdock (2001) found that humor helps participants deal with fearful situations, and mention that laughter actually relieves negative emotions such as aggression and apprehension. Additionally, the authors mentioned humor's potential to increase self-efficacy, a key construct in helping achieve message acceptance with fear appeals. Furthermore, Lewis et al. (2007) suggest that implementing positive emotions into health campaigns can help create novel, attention-grabbing, and persuasive ads. Yook and Tinkham (2013) mention that humor can make threatening information more approachable and thus less likely to be ignored. That being said, research pertaining to the usage of humor in fear appeal advertising is, to date, virtually non-existent, with the exception of a few published articles (Conway & Dubé, 2002; Mukherjee & Dubé, 2012; Voss, 2009; Yoon & Tinkham, 2013).

Voss (2009) used humor appeal, negative consequences, as well as a combination of the two to see how outcome variables, such as attitude towards the ad, would be affected. In addition, the author looked at the effects of message comprehension. The stimulus used was a Macromedia Flash player advertisement, which was altered depending on the experimental condition. Due to the low-involvement nature of the product, and the fact that viewers tend to be cognitively passive when watching such ads, many of the participants in the study miscomprehended the message (didn't understand the humor). However, especially among those that miscomprehended the ad, persuasion was found to be much higher in the combined negative consequences and humor ad. Adding humor to the ad also helped reduce the amount of counterarguments, and increase support arguments. However, due to the low-involvement level of the product, a free Internet add-on, the applicability of the results to a high-involvement public health campaign are unclear.

Conway and Dubé (2002) also looked at the effects of humor appeal on threatening topics such as melanoma and HIV/AIDS. Specifically, the authors found that those high on the personality trait of masculinity are persuaded more by humorous appeals than non-humorous appeals when confronted with threatening topics. This can be explained by the fact that those high in masculinity are more prone to having avoidance reactions to threats, but having humor present can help diminish these inclinations by reducing defensiveness. The authors tested both TV and print ads, employed humor utilizing the incongruency mechanism, and had both low- and moderate- manipulations of threat context. However, their humor manipulation was found to be quite weak.

A more recent research endeavor on this topic was carried out by Mukherjee and Dubé (2012), who sought to extend the findings from Conway and Dubé (2002) by manipulating threat level of the ad and disregarding personality traits in lieu of finding more general effects. The authors utilized a skin cancer print ad stimulus very similar to the one from Conway and Dubé (2002), but varied the content depending the experimental condition. The research design involved varying both fear arousal (moderate vs. high) and humor (present vs. absent). The authors found that the addition of humor in a fear appeal ad helps to increase persuasiveness by decreasing defensive responses. It is important to note that in this experiment, the purpose of the ads used was to incite consumers to purchase the sunscreen lotion advertised in order to protect

themselves from the threat of skin cancer, and therefore persuasiveness was operationalized as attitude towards the brand.

Lastly, a recently published study by Yoon and Tinkham (2013) explored the moderating effect of issue involvement on processing humorous fear appeals. Throughout two studies, the authors found that issue involvement, defined as something that is personally important or relevant, dictates how the threat of the message will be perceived, which in turn affects how the humor component will be processed. Thus, the effectiveness of varying levels threat intensities and humor combinations depend on the level of issue involvement. The authors found that for individuals with low issue involvement, a humorous high threat or a non-humor low threat ad will work best. Conversely, for individuals with high issue involvement, a humorous low threat or a non-humor high threat ad are the most persuasive. Although this recent study sheds some light onto some of the factors that affect the persuasiveness of humorous threat appeals, a gap still exists regarding the cognitive processes of how these messages are processed.

Further research is needed in order to address previous studies' limitations and to further explore gaps in the literature. From the limited studies covering the topic, it can be seen that humor does seem to be a favorable addition to fear appeals, however more research is needed to establish the extent to which this is true. Many campaigns already employ this combination of appeals in their advertised messages, and hence it is crucial to know their effectiveness on viewers and to better understand the processes by which persuasion take place. In order to expand on this topic, and to address the aforementioned issues with fear appeals, such as ethical considerations and defensive reactions, print ads employing different types of appeals will be tested using the EPPM framework. Moreover, some of the research on this topic has operationalized persuasion as willingness to buy a consumer product or attitude towards a fictional brand. The current study will take a different approach in order to further validate generalizability to other contexts. Namely, the print ads designed for the current study focused on raising skin cancer awareness and attempted to persuade their audience by promoting preventative actions. Furthermore, Mukherjee and Dubé (2012) suggest looking at the behavioral complexity of the preventative action, and how simple and complex recommendations may differentially impact persuasion levels.

Behavior Complexity and Persuasion

Behavior recommendations presented to message recipients as part of a health campaign message can vary from relatively simple tasks, such as applying sunscreen, to more complex behaviors such as performing breast self-exams and scheduling annual mammograms. It has been found that health messages in the past have placed too much focus on dispensing general information, and not enough effort on prescribing specific actions the audience can undertake. Furthermore, Parrot, Egbert, Anderton, & Sefcovic (2002) mention that specific, simple recommendations are more likely to be adopted than complex recommendations. Overwhelming the audience with an abundance of prescribed behaviors will likely leave them feeling helpless and frustrated. A simple, straightforward recommendation is easier to commit to. In the current study, behavioral complexity is proposed to moderate the acceptance of the message, such that simple recommendations will lead to higher behavioral intention to heed the message's suggestions as opposed to complex recommendations.

Moreover, it has been suggested that the behavior complexity of the recommendation may moderate the effects of humor on persuasion in mixed humor and fear appeal ads (Mukherjee & Dubé, 2012). As mentioned earlier, humor's distractive properties aid in lowering defensive responses; however humor may also impact memory encoding at the time of viewing the ad. The incongruity in humorous stimuli places cognitive demands on the viewer, thus limiting cognitive resources available for processing other non-humorous aspects of the message (Strick, Holland, van Baaren, & van Knippenberg, 2010). The recommended behavior presented in a health campaign is arguably one of the most important parts of the message as it guides individuals in adaptively handling the health threat. If humor is included in the message, individuals may be paying less attention to the recommended response, processing the information at a lower level, and ultimately will be less likely to adapt their behavior. The more complex the recommended behavior is, the more cognitive resources are required to process the information and encode it in memory.

Development of Hypotheses

Witte's (1992) EPPM is arguably the most recent and comprehensive fear appeal model. It has been consistently supported by empirical studies (Witte & Allen, 2000), and having been

built upon its predecessors, it fills in any pre-existing gaps such as being able to not only predict fear appeal successes, but also failures. Furthermore, the EPPM has been tested and found to be applicable to emotional appeals other than fear, such as humor, pride, and annoyance/agitation (Lewis, Watson, & White, 2013). For these reasons, the current study will employ the EPPM in order to study the cognitive processing and outcomes of ads employing either predominantly humor, predominantly fear, or a mixture of these two tactics.

Humor and Defensive Motivation

Defensive motivation as an outcome can include reactance, or motivation to do the opposite of what is suggested due to perceived loss of freedom, denial, suppression, fatalistic thoughts, perceptions of being the exception to the rule, inattentiveness to the message, and avoidance (Roskos-Ewoldsen, Yu, & Rhodes, 2004; Witte & Allen, 2000). When a message is perceived to be highly threatening, or very personally relevant, defensive reactions will likely occur resulting in maladaptive fear control outcomes (Block & Williams, 2002; Liberman & Chaiken, 1992). Thus in order to improve health campaign communications and their tendency to elicit defensiveness in respondents, humor is put forth in this study as a potential mitigating agent.

Humor has been found to lower some defensive reactions, such as reactance, to persuasive messages (Skalski, Tamborini, Glazer & Smith, 2009; Strick, Holland, van Baaren, & van Knippenberg, 2012). Defensive reactions to advertisements are common, and impede the communication between the advertiser and the viewer. Due to its mildly distractive properties, humor has been found to curb negative associations to the advertised brand, and other negative emotions which may be precursors to defense mechanisms (Strick, Holland, van Baaren, & van Knippenberg, 2009). Lee and Ferguson (2002) mention that humor appeals can help lower defensive reactions by reducing counterarguing, and also by increasing positive feelings toward the message. Considering that counterarguing, or directly refuting the message, is one of the most commonly enlisted and highly effective methods in resisting persuasion, it is crucial to anticipate it and attenuate it (Jacks & Cameron, 2003).

As noted earlier, Witte (1992) posits that an individual functions by default in the defensive motivation (fear control) mode, until a critical point is reached whereby a protection motivation (danger control) mode is adopted, and message acceptance takes place. The current

study proposes that humor will help counteract defensive motivation in the aforementioned ways, helping boost the individual into adaptive danger control mode.

Keeping in mind that the EPPM framework has been tested with a range of emotional appeals, including humor-based (see Lewis, Watson, & White, 2013), the first hypothesis is put forth:

H1. Perceived humor and defensive motivation (message rejection) will have a negative relationship, such that a humorous ad will have lower message rejection than a non-humor ad.

Combining Humor and Fear

As a logical extension of the first hypothesis, if humor has a negative relationship with defensive motivation (message rejection), then a mixed humor/fear appeal ad is predicted to be more persuasive (higher message acceptance) than a pure fear appeal ad. Humor's proposed ability to help offset some of the negative effects of fear appeals—namely, defensive reactions—favor its addition to the communication materials.

H2. A mixed humor/high fear appeal ad will result in higher message acceptance (lower message rejection) than a pure high fear appeal ad.

Pure humor appeal ads on the other hand, generally take a more light-hearted approach to serious topics by bringing attention to the issue and mentioning only the less severe consequences and associated risks. Lewis, Watson, and White (2013) designed and tested messages using different emotional appeals such as humor, fear, agitation/annoyance, and pride. Although the main targeted issue (safe driving) was kept constant, the authors varied the threats in the message by catering them to the emotional appeal employed. The study's results showed that severity of the threat was perceived to be much lower in the humor condition than in the fear condition. According to Witte and Allen (2000), the higher the severity of the threat, the higher the behavioral intention to change. Although perceived self-efficacy will make an individual feel capable enough to handle the threat, the perceived threat severity will provide the necessary motivation and incentive for behavioral change. Although an appeal predominantly using humor

may grab an audience's attention, the lack of a substantive and severe threat may make it less persuasive and less conducive to change than a mixed appeal using high fear alongside humor.

H3. A mixed humor/high fear appeal ad will result in higher message acceptance (lower message rejection) than a predominantly humor appeal ad (mixed humor/low fear).

In sum, the mixed humor and high fear appeal ad is expected to be superior and lead to higher message acceptance when compared to either predominantly humor or predominately fear appeal approaches. A predominantly humor appeal is expected to be inferior since the threat is presented in a less serious tone, which may result in lower motivation to accept the message, and even increase the chances of a message being ignored. Likewise a predominantly fear appeal is expected to perform worse than the mixed emotional message due to potentially higher levels of defensive processing, which increase the chances of a maladaptive outcome and message rejection.

Behavior Complexity

Behavior complexity is hypothesized to moderate the effects of humor on message acceptance. It is predicted that message acceptance, including both positive attitude towards the recommended behavior and intentions to use the recommendation, will be higher when the proposed behavior is simple rather than complex.

H4. When humor is present, message acceptance will be higher (message rejection will be lower) when the recommended follow-up behavior is simple than when it is complex.

A mixed humor and high fear appeal is predicted to be superior to both humor appeal and fear appeal alone (*H2, H3*). Additionally, a simple recommendation is believed to lead to higher message acceptance when humor is included in the message (*H4*). Therefore, the ad hypothesized to be the most persuasive is one that employs both high fear and humor appeals and puts forth a recommended task low in complexity.

H5. Message acceptance will be highest (message rejection will be lowest) for ads with humor present, high fear, and low behavioral complexity of recommended response.

In order to test these hypotheses, message rejection was operationalized as scores on negative outcome variables, namely message avoidance, issue derogation, and perceived manipulation. Moreover, it was also operationalized via the discriminating value (perceived efficacy minus perceived threat), for which a negative value signifies a respondent having rejected the message by being in maladaptive fear control mode. Conversely, message acceptance was operationalized as scores on positive outcome variables, including attitude towards the recommendation and intentions to use the recommendation. Additionally, the discriminating value, for which a positive value signifies a respondent having accepted the message and being adaptive danger control mode, was taken into account. Thirdly, message acceptance was also operationalized by attention paid to the recommendation in the ad, which was measured by the amount of respondents' clicks on this area. All of these measures will be discussed in further detail in the *Measures* section.

Methodology

Participants

Participants were recruited from the general Canadian population by Research Now, a market research vendor with proprietary panels of respondents. In order to be eligible to participate for the study, participants had to provide consent, be over the age of 18, and consider themselves to be fluent in English. Additionally, as the stimuli in the study focused on the topic of skin cancer, participants had to acknowledge that neither they nor someone in their immediate family had ever been diagnosed with any form of the disease. Data was collected via an online survey from a total of 622 participants, of which 28 were removed after data was cleaned and verified. Another six participants were removed due to being over three standard deviations lower than the norm on a measure of current mood. Lastly a seventh additional participant was removed for being over three standard deviations lower than the norm on a measure of issue involvement for skin cancer. As the eligibility criteria excluded those who would've been overly involved in the issue due to personal trauma caused by the disease, it was decided that someone

who was overly uninvolved should be excluded as well in order to effectively eliminate both extremes.

The remaining 587 participants were located in the ten Canadian provinces as well as Nunavut, were 52.5% female and ranged in age from 18 to 50, with a mean age of 36.22 (*SD* = 8.68). They had ranging levels of education, with 62.01% having completed some university or higher, and a variety of self-reported ethnicities, the main two being white/Caucasian (72.74%) and Asian (13.97%).

Procedures and Research Design

E-mail invitations were sent out by Research Now to online panel members between the dates of April 30th and May 6th, 2015. The invitation included key information about the survey, such as the broad topic it will cover, its estimated length (5-10 minutes), the incentive provided for completing the survey, and a link to the online survey which was hosted on Qualtrics. Participants who fully completed the survey were compensated by Research Now by being entered in a prize pool for a chance to win cash or prizes.

A 2 (fear: low, high) × 2 (humor: absent, present) × 2 (behavioral complexity of the recommendation: simple, complex) between-subjects full-factorial design was employed for the study. Participants were randomly assigned to one of eight test cells and were exposed to a single print-style advertisement corresponding to the condition they were in. Each test cell was comprised of anywhere between 70 and 78 participants. With the exception of the stimulus, all of the measures collected were identical across conditions. Development and further explanation of the stimulus materials used will be detailed in the *Stimuli* section further down.

When participants first entered the survey, they were prompted to provide their consent to take part in the study. They were told that the purpose of the study was to gather their honest opinions and attitudes on an advertisement in order to help evaluate its content and design. They were then asked to provide their age, self-perception of fluency in English, if they or anyone in their immediate family has ever been diagnosed with any form of skin cancer, and to indicate their current mood state. Afterwards, a short introductory screen was shown telling respondents that they would now be shown an advertisement that could appear in a magazine, and to take a few moments to carefully study and read the information presented to them. The advertisement corresponding to their assigned condition was then shown on a separate page and respondents

were asked to confirm that they were able to see the image and that its quality was good enough for them to evaluate its content, otherwise they were discontinued from the survey. Afterwards, participants were shown the same advertisement again and were asked to click on the two areas of the ad that stood out to them and drew their attention the most. They then went on to answer various questions measuring variables of interest and demographic information. At the end of the survey, participants were shown a debriefing statement providing them with additional information about the objectives of the study and a link to the Canadian Skin Cancer Foundation homepage should they wish to seek out more information regarding skin cancer, the focal topic of the advertisement materials presented.

Stimuli

Print-style ads promoting skin cancer awareness and prevention were created for the stimuli. Each ad contained three main elements representing the three independent variables being manipulated: fear, humor, and recommendation complexity. The first round of ads were created in an iterative fashion, by consulting with peers and making multiple rounds of revisions according to the feedback received. Afterwards, the ads were pre-tested and further revisions were made in order to finalize them for the main experiment.

Pre-test: Initial stimuli. The first round of ads were created during the month of March, 2015.

Humor was manipulated via the main image shown in the ad. The humor present condition depicted an image of a middle-aged man, wearing swim trunks and a sombrero, with comical tan lines forming an outline of a camera on his chest. The words "Don't be this guy…" are printed alongside the man. In the humor absent condition, a close-up of a young man's sunburned face with peeling skin was shown as the main image, with the words "Face the facts" appearing in large font.

Fear was manipulated via the written information shown under the main image. All of the information and statistics included were taken from the Canadian Cancer Society's Canadian Cancer Statistics 2014 report (Canadian Cancer Society's Advisory Committee on Cancer Statistics, 2014). In the high fear condition, participants' attention was drawn to the fact that a

mere sunburn could lead to serious consequences, such as skin cancer. Specifically, they were presented with the following text:

"They may seem harmless in the moment, but sunburns can lead to serious consequences. Over 80,000 cases of skin cancer are diagnosed each year in Canada. Skin cancer is prevalent, but PREVENTABLE too."

Additionally, the above text was accompanied by cropped image depicting a cancerous mole.

In the low fear condition, although skin cancer was still mentioned, the information presented focused on the less severe consequences of unprotected sun exposure, such as wrinkled skin. Specifically, it mentioned:

"Prolonged unprotected exposure to the sun causes serious sunburns and can even permanently damage your skin, causing premature aging and wrinkles. In some rare cases, it can even lead to various forms of skin cancer."

Complexity of the recommendation was manipulated by the amount and intricacy of the preventative measures proposed. All of the information presented was taken from the Canadian Cancer Society's Canadian Cancer Statistics 2014 report (Canadian Cancer Society's Advisory Committee on Cancer Statistics, 2014) as well as the Canadian Skin Cancer Foundation's website (http://www.canadianskincancerfoundation.com). The recommendations were presented in the form of text at the bottom of the ad, and were accompanied by an image of a generic sunscreen bottle, as well as the words "What can you do?".

In the simple recommendation condition, participants were presented with only one behavior, namely applying sunscreen. They were shown the following recommendation:

"Make sure to apply broad-spectrum (UVA & UVB) sunscreen with at least 30 SPF every two hours when exposed to the sun."

The complex condition text included the same recommendation as the simple condition regarding sunscreen application, but also mentioned keeping an eye on moles and visiting a dermatologist. Specifically, the following information was presented:

"**Firstly**, make sure to apply broad-spectrum (UVA & UVB) sunscreen with at least 30 SPF every two hours when exposed to the sun.

Secondly, perform monthly self-checks. Make sure to keep in mind the ABCDE's of early detection: Asymmetry, Border, Colour, Diameter, and Evolution.

Thirdly, schedule check-ups with your dermatologist."

In order to evaluate the stimuli, an online pre-test employing the same methodology and sample definition as the main experiment data collection specified earlier was conducted between the dates of April 9th to April 11th, 2015. The pre-test constituted a sample of 147 respondents, which were reduced to 138 after cleaning and verifying the data. These 138 respondents were located in the ten Canadian provinces, 55.1% were female, and they ranged in age from 19 to 50, with a mean age of 36.12 (*SD*= 8.99). Each test cell contained anywhere between 15 and 19 randomly assigned participants.

In order to test if the manipulations were successful, fear tension arousal, perceived humor, and perceived complexity of the recommendation were measured using three- or four-item, seven-point, semantic differential scales further detailed in the *Measures* section. Additionally, in order to also collect supplementary feedback, an open-ended question was posed soliciting respondents' thoughts and feelings about the ad they saw. Manipulations were checked with a series of independent-samples *t*-tests. No significant difference was found in the scores of fear tension arousal for low fear (*M*= 4.36, *SD*= .98) and high fear (*M*= 4.54, *SD*= 1.02) conditions, $t(136) = -1.03$, $p = .306$. Likewise, no significant difference was found in the scores of perceived complexity of recommendations for simple recommendation (*M*= 2.35, *SD*= 1.42) and complex recommendation (*M*= 2.73, *SD*= 1.57) conditions, $t(136) = -1.465$, $p = .145$. However, a significant difference was found in the scores of perceived humor for humor present (*M*= 3.96, *SD*= 1.78) and humor absent conditions (*M*= 1.92, *SD*= 1.25), $t(122.09) = -7.808$, $p < .001$. Here, the Levene's test was found to be significant, therefore equal variances could not be assumed between the two groups. This is not surprising given that the non-humorous stimulus is more likely to elicit a limited range of scores reflecting little to no perceived humor compared to a humorous stimulus which can be perceived anywhere from not funny at all to extremely funny.

Further tests were conducted in order to better understand why the fear manipulation was unsuccessful. An independent samples *t*-test revealed a significant difference in the scores of fear tension arousal for humor present (*M*= 4.21, *SD*= 1.10) and humor absent conditions (*M*= 4.70, *SD*= .83), $t(136) = 2.97$, $p = .004$. Furthermore, it was found that within the humor absent condition, fear ratings were not significantly different between low fear (*M*= 4.70, *SD*= .95) and high fear (*M*= 4.70, *SD*= .68) conditions, $t(67) = .007$, $p = .994$. Taking these findings into consideration, it became clear that the "neutral" image being shown in the humor absent

condition was in fact quite fear-inducing, thus causing not only higher fear ratings overall when compared to humor present condition, but also causing participants to become equally fearful regardless of the manipulated fear information presented in writing. Inspection of answers to the open-ended question that followed ad exposure also revealed some negative remarks regarding the image of the man's face used in the humor absent condition, further indicating that the image was not neutral as intended. Specifically, several respondents had indicated that the image was gross, disturbing, or disgusting.

Additionally, the verbatim responses were inspected for any remarks indicating the inappropriateness of using humor to convey serious information regarding skin cancer. Only one of the 70 participants (1.43%) in the humor-present condition made a remark to this effect, by mentioning that the ad is in "bad taste". In Mukerherjee and Dubé's (2012) studies which also employed the combination of humor and fear, 6.45% (Study 1) and 4% (Study 2) of respondents in the humor-present conditions made remarks about the inappropriate use of humor. Furthermore, they found that the removal of these participants from analysis did not alter results. Taking into consideration the similarly low percentage of such comments in the present study, it was deemed that the current employment of humor was not too distasteful.

Final stimuli. Guided by the insights gained during the pre-test, several revisions were made to the ads in order to strengthen manipulations. Final ads can be seen in Appendix C.

Firstly, in order to strengthen the recommendation complexity manipulation, the wording used for the simple condition was further simplified by removing two sentence elements which were implied and not central to the message, namely "broad spectrum (UVA & UVB)" and "… when exposed to the sun". Thus, the simple recommendation became: "Make sure to apply sunscreen with at least 30 SPF every two hours". Furthermore, in order to make the complex recommendation more intricate, additional preventative measures were added, such as staying out of the sun during peak hours and wearing loose-fitting clothing.

Secondly, the main image in the humor-absent condition was changed for a more neutral one. The new image depicts the sunburned back of a man, accompanied by the statement "Sunburns are a big deal". Moreover, the severity of the sunburn in this new picture is comparable to the one depicted in the humorous image.

Thirdly, in order to further accentuate the differences between low and high fear conditions, the wording in the high fear condition was made more extreme. Additionally, a second small image was added alongside the text depicting malignant melanoma on a woman's cheek. As images tend to be more attention-grabbing than words, regardless of their content, two images were added to accompany the low fear condition text so that an equal number of images were present in all versions of the ad. These two images were congruent with the milder information presented, and showed benign-looking sun spots on a man's back and wrinkles on a woman's chest.

These final stimuli were used for the main experiment. Manipulation checks, further detailed in the *Results* section, revealed that the manipulations were successful.

Measures

A seven-point rating system was used for all of the scales included in the present study regardless if the original scale similarly used seven points or another amount. This was done in order to maintain consistency for the respondent answering the survey, and to keep any confusion to a minimum.

Independent variables.

Fear. Fear tension arousal was measured with a four-item semantic differential scale taken from Keller and Block (1996) that asked respondents to indicate on a seven-point scale how the ad made them feel in terms of: unafraid/afraid, relaxed/tense, calm/agitated, and restful/excited. The scale was found to be reliable, $\alpha_{\text{pre-test}} = .80$ and $\alpha_{\text{main experiment}} = .82$. A confirmatory factor analysis (CFA) revealed a unidimensional scale, with all items loading on one factor explaining 63.30% and 64.83% of the variance for the pre-test and main experiment respectively.

Humor. Perceived humor was measured with a four-item semantic differential scale developed by Nabi, Moyer-Gusé, and Byrne (2007). Participants were asked to rate the ad on a seven-point scale in terms of how much they found the ad to be: not funny/funny, not amusing/amusing, not entertaining/entertaining, and not humorous/humorous. The scale was found to be highly reliable, $\alpha_{\text{pre-test}} = .97$ and $\alpha_{\text{main experiment}} = .97$, and all of the items loaded on

one factor with 92.53% and 91.51% variance explained in the pre-test and main experiment respectively.

Complexity of the recommendation. Complexity of the recommendation was similarly assessed with a four-item, seven-point, semantic differential scale. Respondents were shown the recommendation text from the ad again, and then were asked to rate how they feel performing the behavior(s) would be in terms of: not complex/complex, not complicated/complicated, not at all difficult/difficult, and not effortful/effortful. Park et al. (2010) used a single eleven-point item anchored by not at all difficult and completely difficult to assess perceived difficulty of performing a behavior. In order to give more granularity to this measure and to be able to assess its reliability, the current study adapted Park et al.'s (2010) measure and added the other three additional scale items mentioned above. A CFA showed that while all four items loaded on one factor, one of the items (not effortful/effortful) loaded quite less than the others, with a factor loading of .77 (pre-test) and .73 (main experiment) versus factor loadings over .90 for the other three measures. Moreover, reliability analysis showed that Cronbach's alpha would increase from .92 to .97 (pre-test) and from .88 to .91 (main experiment) if this item was removed. Considering this scale was developed for the purpose of the current study and was not taken from existing literature, it was decided that this problematic item would be dropped in order to maximize the reliability and structure of the scale. The pared down three-item single-factor scale was found to have 93.68% and 84.96% variance explained, in the pre-test and main experiment respectively.

Threat and efficacy measures. Perceived threat and perceived efficacy are the cognitive appraisals of the threat and efficacy elements present in a message. Witte et al. (1996) developed scales to measure these perceptions. Perceived threat is split into two sub-scales measuring severity of the threat and susceptibility to the threat and perceived efficacy is split into two sub-scales measuring self-efficacy and response efficacy. All of items are rated on a seven-point Likert scale anchored by strongly disagree and strongly agree, and wording for each item is adapted to reflect the health threat presented, which in this case was skin cancer.

Threat. Severity of the threat was measured by three adapted items: I believe that skin cancer is severe/serious/significant. This sub-scale was found to be reliable with a reported Cronbach's Alpha of .92, and unidimensional with 86.02% variance explained. Susceptibility to the threat was similarly measured by three adapted items: I am at risk for developing skin cancer/ It is likely that I will develop skin cancer/ It is possible that I will develop skin cancer. This second sub-scale was also found to reliable with an Alpha of .86 and with all items loading on one factor explaining 77.94% of the variance. As the two sub-scales are combined to form an overall threat index, reliability and dimensionality of the overall threat scale was assessed as well. The total threat scale was found to be adequately reliable, $\alpha = .75$, and a CFA with Oblimin rotation showed items loading well on the two factors representing the sub-scales. Overall variance explained for the two-factor threat scale was 82.03%.

Efficacy. The self-efficacy sub-scale aims to measure how able an individual feels with regards to performing the suggested recommendations (Witte et al., 1996). In the present study, respondents were prompted with the recommendation text again at the top of the page, and then were asked the extent to which they agreed or disagreed on a seven-point scale with the following adapted statements: I am able to do what the ad suggests in order to prevent skin cancer/ Doing what the ad suggests is easy to do in order to prevent skin cancer / Doing what the ad suggests in order to prevent skin cancer is convenient.

Response efficacy on the other hand, measures how effective the individual feels the recommendation is for preventing the health threat (Witte et al., 1996). The three adapted items used to capture response efficacy perceptions were: Doing what the ad suggests works in preventing skin cancer/ Doing what the ad suggests is effective in preventing skin cancer/ If I do what the ad suggests, I am less likely to develop skin cancer. Both sub-scales were found to be reliable, with reported Alphas of .85 for self-efficacy and .91 for response efficacy. Individual CFAs run on each sub-scale revealed an explained variance of 77.82% for self-efficacy and 85.15% for response efficacy. Similar to threat, efficacy is also looked at in terms of a total efficacy index, given by an overall score on the two sub-scales. The overall efficacy scale was found to be reliable, $\alpha = .85$, and a CFA with Oblimin rotation revealed good factor loadings on the respective two factors, and an overall variance explained of 81.71%.

Witte et al. (1996) entered all of the items from both threat and efficacy scales into a confirmatory factor analysis to see if items showed good loading values alongside other respective sub-scale items. They found that items showed acceptable factor loadings, and reported eigenvalues of 3.68 for severity, 2.67 for susceptibility, 1.60 for response efficacy, and 1.13 for self-efficacy. In the present study, an Oblimin-rotated CFA revealed that items loaded well onto their respective factors. Eigenvalues were 4.12 for response efficacy, 2.43 for susceptibility, 1.88 for severity, and 1.34 for self-efficacy, with an overall 82.00% variance explained compared to 75.70% in Witte et al.'s (1996) study.

Outcome variables. Witte et al. (1996) posit that message acceptance or rejection can be determined by a "discriminating value", calculated by taking subtracting the total perceived threat score from the total perceived efficacy score. As discussed earlier, it is assumed that as long as efficacy perceptions exceed threat perceptions (i.e. a positive discriminating value), an individual adaptively handles the threat and accepts the message. On the contrary, if threat perceptions exceed efficacy perceptions (i.e. a negative discriminating value), the message is rejected. However, critics argue that simply using a discriminating value is misleading because someone with a very low threat appraisal (0) and low efficacy appraisal (1) is assumed to have the same magnitude of protective response as someone who perceives high threat (4) and high efficacy (5), as both of these individuals would result in a discriminating value of 1. According to Witte et al. (1996), high threat appraisal and even higher efficacy appraisal are necessary to produce persuasion; low threat appraisal leads to complete disregard of the message and further processing. In order to further validate the results of the discriminating value, Witte et al. (1996) suggest concurrently using other measures of positive and negative outcomes.

Positive outcome variables. The positive outcome variables measured in the present study include attitude towards the behavior and intentions to use the recommendation. Both of these measures capture the cognitive process of adaptively handling a threat.

The attitude towards the behavior scale originally developed by Witte et al. (1996) is a three-item, seven-point, semantic differential scale asking respondents to rate the recommendation described in the ad in terms of how bad/good, undesirable/desirable, and

unfavorable/favorable it is. This scale was found to be very reliable with a reported Alpha of .90 and all items were found to load well on one factor explaining 83.76% of the total variance.

The intentions to use the recommendation scale, also developed by Witte et al. (1996), comprised two items adapted to the current context rated on a seven-point Likert scale. Prompted with the recommendation text from the ad and told to think about actions they may take in the future, respondents were asked to indicate the extent to which they agreed or disagreed with the following items: I intend to do what the ad recommends in order to keep my skin healthy / I intend to do what the ad recommends in order to prevent skin cancer. The scale was found to be reliable, $\alpha = .96$, and items loaded well on one factor explaining 96.33% of the total variance.

Negative outcome variables. The negative outcome variables measured in the present study include: message avoidance, issue derogation, and perceived manipulation. These three scales set out to measure the emotional process of a maladaptive response to a threat.

The message avoidance scale is made of up three items taken from Basil, Basil, Deshpande, and Lavack (2013) and asks respondents to rate the following statements on a seven-point agree/disagree Likert scale: I will try to ignore this ad/ I will shut out this message/ I will try not to think about this message. This scale was found to be highly reliable, $\alpha = .93$, and items loaded well on one factor explaining 88.12% of the total variance.

Both issue derogation and perceived manipulation scales were developed by Witte et al. (1996). Issue derogation measured to what extent respondents minimized or derogated the message by asking them to rate on a seven-point scale how much they agreed or disagreed that the ad's message was: overblown/ exaggerated/ overstated. On the other hand, perceived manipulation measured to what extent respondents thought the ad's message was: manipulative/ misleading/ distorted. Both scales were found to be highly reliable, with reported Alphas of .92 and .91 for issue derogation and perceived manipulation respectively. Single factor CFAs run separately for each scale revealed 86.62% and 85.52% explained variance for issue derogation and perceived manipulation respectively.

Total clicks on the recommendation. Total number of clicks on the recommendation area of the ad was included as an alternative dependent variable. As outlined earlier, respondents were shown the same ad stimulus a second time and asked to click on the two areas of the ad that drew

their attention the most. The pixel locations of their clicks were recorded, and afterwards these locations were coded depending on the area of the ad where the click occurred: the main image which represented the humor manipulation, the middle section of text and secondary images which represented the fear manipulation, or the bottom section of text which represented the recommendation complexity manipulation. The location and proportion of clicks on the particular regions of each ad can be seen in Appendix D. Total clicks on the recommendation, ranging from zero to two, was included as an outcome variable since clicking on this region of the ad likely signifies that the respondent was paying attention and mentally processing this information; a precursor to acting upon and thus following the recommendation.

Control and demographic variables.

Issue involvement. Yoon and Tinkham (2013) found issue involvement to moderate the persuasive effects of humorous threat appeals. Although this variable will not be included as a predictor in the current study, it will nonetheless be accounted and controlled for. Participants were prompted to think about skin cancer, and then asked how critical/ personally relevant/involving this issue is for them. Items were rated on a seven-point Likert scale anchored by "not at all" and "very much". Although Yoon and Tinkham (2013) measured issue involvement prior to stimuli exposure, the current study measured it afterwards in order to avoid priming respondents about the health issue. As this variable was only included in the present study as a control, it was deemed preferable to have scores on the issue involvement scale be biased by stimuli exposure and other preceding measures, rather than the other way around. The scale was found to be reliable with a reported Alpha of .82 and unidimensional with 74.74% explained variance.

Mood. In order to measure current mood state, a three-item, seven-point, semantic differential scale taken from Roehm and Roehm (2005) was used to capture to what extent respondents felt unpleasant/pleasant, unhappy/happy, and bad/good. The scale was found to be reliable, $\alpha = .92$, and items loaded well on one factor explaining 86.20% of the total variance.

Sun hours. Another potential control variable measured was the average amount of time spent exposed to the sun each day. Prompted to think about their lifestyle and told to be mindful

of seasonality, respondents were asked if they spend on average less than one hour, between 1 to 3 hours, between 3 to 5 hours, or more than 5 hours per day outside exposed to the sun.

Message characteristics. Although a successful manipulation check demonstrates that the variables of interest are well implemented, McKay et al. (2004) also mention the importance of making sure that other confounding variables aren't affected as well. Respondents were asked to what extent they found that ad's message to be boring, believable, interesting, accurate, and objective. These five items taken from McKay et al. (2004) were measured using a seven-point Likert scale anchored by "not at all" and "extremely".

Other control and demographic variables. After viewing the ad stimuli, respondents were presented with an open-ended question asking them to report their thoughts and feelings about the ad they just saw. Data gathered from this question was mainly used in the pre-test to help refine the stimuli design.

At the end of the survey, respondents were presented with an open-ended question asking them to describe in their own words what the recommended behavior mentioned earlier in the ad was. As this recommendation was shown to them several times it should have been top of mind had they paid attention to the ad and questions throughout the survey. Data gathered from this question was mainly used during data verification in conjunction with other measures to determine if a respondent was valid or not.

Lastly, several demographic variables were measured including age, gender, education level, marriage status, province currently residing in, personal and household income, ethnicity, years living in Canada, and whether or not they have children.

As all of the scales were found to be reliable, and their underlying structures aligned with what was expected, items were averaged to form a total score for each scale. For total perceived threat, the items for both the perceived severity and perceived susceptibility were averaged. The same was done to calculate total perceived efficacy whereby the average was taken for perceived self-efficacy and perceived response efficacy.

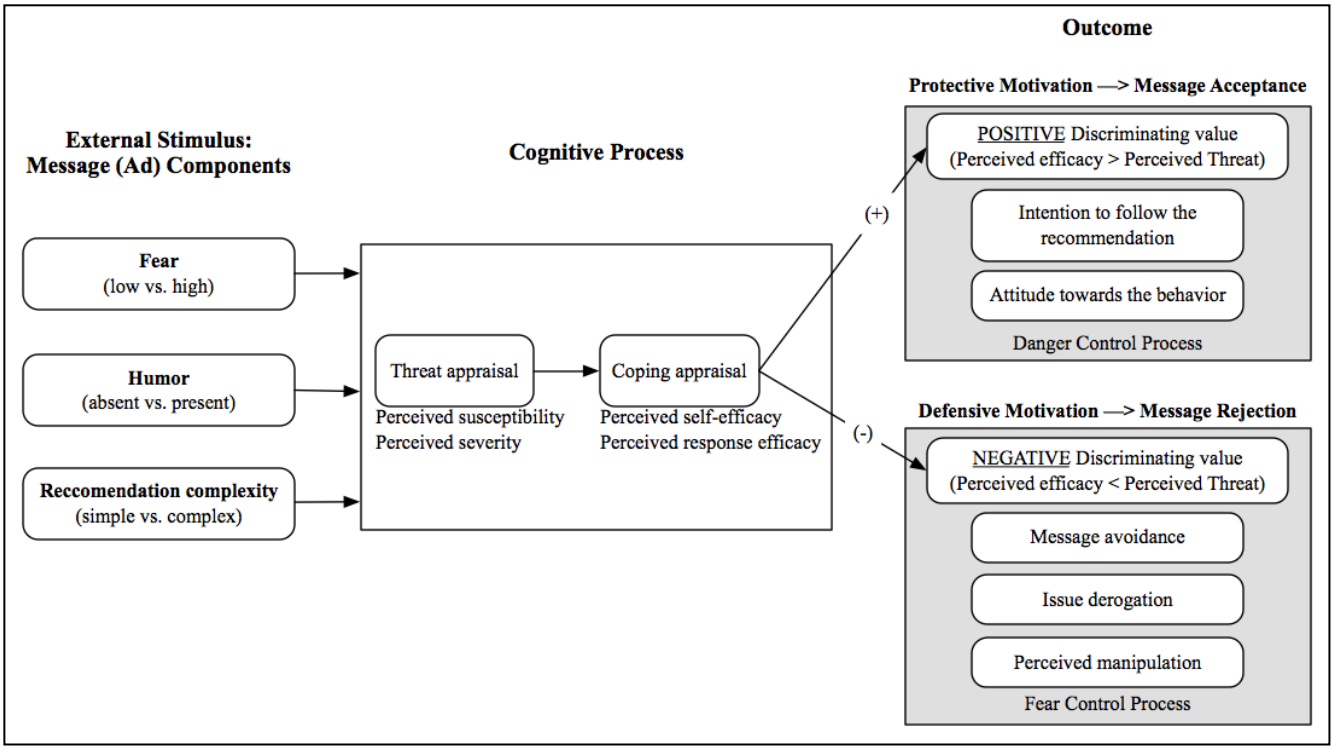


Figure 2. Research model. Independent variables are shown on the far left, and dependent outcome variables on the far right. Cognitive processing variables were measured and used to calculate the variable discriminating value (i.e. total perceived efficacy minus total perceived threat).

Analysis and Results

Manipulation Check

A series of independent-samples *t*-tests were performed to test the manipulation of the independent variables in the final ads.

Humorous ads were perceived to be significantly more funny (M= 3.58, SD= 1.76) than non-humor ads (M= 1.81, SD= 1.13), $t(585)$= -14.53, p<.001. Moreover, as previously discussed, humor has been found to be a great attention-grabbing technique. In order to assess if the humorous image garnered more attention than the non-humorous image, the average amount of

clicks on these images was compared. As outlined earlier, the second time respondents were shown the ad, they were told to click on the two parts of the image that grabbed their attention the most. Thus, a respondent could have clicked anywhere between zero to two times on parts of the main image used to manipulate humor. An independent-samples *t*-test revealed that the humorous main image was clicked on significantly more (M= .94, SD= .66) than the neutral main image (M= .79, SD= .58), $t(585)$= -2.87, p= .004.

Fear was also found to be successfully manipulated, such that perceived fear scores were higher for the high fear ads (M= 4.47, SD= 1.00) than for the low fear ads (M= 4.01, SD= .92), $t(585)$= -5.85, p<.001. In order to assure that the new "neutral" image in the non-humor conditions did not impact fear scores, the same analysis as in the pre-test was carried out. Firstly, and an independent-samples *t*-test revealed no significant difference in the scores of fear tension arousal for humor present (M= 4.25, SD= .97) and humor absent conditions (M= 4.23, SD= 1.00), $t(585)$= -.16, p= .88. Furthermore, within the humor absent condition (i.e. in presence of the new "neutral" picture), fear ratings continued to be significantly different between low fear (M= 3.97, SD= 1.00) and high fear (M= 4.49, SD= .93) conditions, $t(291)$= -4.63, p<.001. Taking into account these results, it appears the new neutral image successfully did not interfere with fear ratings.

Lastly, respondents rated ads with a simple recommendation significantly lower on measures of complexity (M= 2.45, SD= 1.48) than ads with a complex recommendation (M= 2.84, SD= 1.49), $t(585)$= -3.20, p= .001.

Next, following McKay et al.'s (2004) recommendation of checking that other confounding variables weren't affected in the process of manipulating the independent variables, a series of one-way analyses of variance (ANOVA) were performed using test cell (i.e. the eight ads) as the independent variable and message descriptors as the dependent variables. It was found that ads did not differ at the p= .05 level in terms of how boring ($F(7, 595)$= 1.61, p= .13), believable ($F(7, 595)$= 1.06, p= .39), interesting ($F(7, 595)$= 1.82 , p= .08), accurate ($F(7, 595)$= 1.54, p= .15), or objective ($F(7, 595)$= 1.63, p= .13) respondents perceived the message to be.

Means, Standard Deviations and Correlations

Means, standard deviations, and bivariate correlations of key dependent variables for the total sample are shown in *Table 1*.

Table 1

Means, Standard Deviations, and Correlations for the Total Sample (n = 587)

	Mean	SD	1	2	3	4	5	6	7	8	11
1. Attitude towards behaviour†	5.86	1.06	1								
2. Intentions to use recommendation†	5.22	1.39	**.645*****	1							
3. Message Avoidance††	2.40	1.33	**-.481*****	**-.499*****	1						
4. Issue derogation††	2.48	1.33	**-.504*****	**-.420*****	**.691*****	1					
5. Perceived manipulation††	2.31	1.34	**-.475*****	**-.358*****	**.648*****	**.869*****	1				
6. Total efficacy	5.51	1.01	**.683*****	**.721*****	**-.452*****	**-.444*****	**-.429*****	1			
7. Total threat	5.01	0.90	**.202*****	**.235*****	**-.203*****	**-.259*****	**-.203*****	**.197*****	1		
8. Discriminating Value	0.51	1.21	**.418*****	**.425*****	**-.225*****	**-.178*****	**-.206*****	**.686*****	**-.578*****	1	
9. Total clicks on recommendation	0.32	0.49	.012	.075*	-.067	-.065	-.083*	.084*	-.115**	**.155*****	1

Correlation is significant at the *p<0.05 level (1-tailed); **p<0.01 level (1-tailed); ***p<0.001 level (1-tailed)
†Positive outcome variables; ††Negative outcome variables

As anticipated, the positive outcome measures (attitude towards behavior and intentions to use recommendation) were significantly negatively correlated at the $p<.001$ level with the negative outcome measures (message avoidance, issue derogation, and perceived manipulation). Furthermore, the positive outcome measures were significantly positively correlated with discriminating value. This is expected, as a positive discriminating value signifies message acceptance. Likewise, positive outcomes were significantly positively correlated at the $p<.001$ level with both total threat and total efficacy. Lastly, positive outcome measures were positively correlated with total number of clicks on the recommendation area of the ad, albeit only intentions to use the recommendation was significantly correlated at the $p<.05$ level whereas attitude towards the behavior was just directionally correlated.

As expected, negative outcome measures were significantly negatively correlated at the $p<.001$ level with total threat, total efficacy, and discriminating value. Additionally, negative outcome measures were negatively correlated with total clicks on the recommendation area of the ad. In this case, perceived manipulation was significantly negatively correlated with total recommendation clicks at the $p<.05$ level, and message avoidance as well as issue derogation came close to significance with *p*-values of .052 and .057, respectively.

Lastly, as expected, total clicks on the recommendation region followed a similar pattern of correlations as positive outcome measures. That is, in addition to the earlier discussed relationships, total clicks on the recommendation was significantly positively correlated with total efficacy at the $p<.05$ level, and significantly positively correlated with discriminating value at the $p<.001$ level. Furthermore, a significant negative correlation was observed with total threat. Although this was inverse to the relationship observed between positive outcomes and threat, it was somewhat expected. High threat perceptions are presumed to lead to message acceptance, and in this case higher attention being paid to the threat in the message means more clicks garnered for that element, thus limiting the opportunity for respondents to click on the recommendation.

In general, all constructs were found to be fairly normally distributed, with skewness and kurtosis values well within the acceptable range of +/-2. Means and standard deviations of key dependent variables for each test cell are shown in *Table 2*.

Table 2

Means and Standard Deviations for Each Test Cell

Test cell	1		2		3		4		5		6		7		8	
Fear condition	High fear		High fear		High fear		High fear		Low fear		Low fear		Low fear		Low fear	
Humor condition	Humor present		Humor present		Humor absent		Humor absent		Humor present		Humor present		Humor absent		Humor absent	
Complexity condition	Simple		Complex		Simple		Complex		Simple		Complex		Simple		Complex	
	n=70		n=74		n=78		n=70		n=74		n=76		n=72		n=73	
	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD
Attitude towards behaviour†	5.80	1.15	5.82	1.15	5.97	0.89	5.81	1.20	5.99	0.99	5.92	1.01	5.89	1.01	5.68	1.08
Intentions to use recommendation†	5.06	1.53	5.34	1.23	5.34	1.40	5.38	1.39	5.41	1.40	5.28	1.27	5.01	1.46	4.94	1.42
Message Avoidance††	2.42	1.44	2.39	1.19	2.57	1.35	2.35	1.29	2.36	1.43	2.36	1.36	2.43	1.26	2.36	1.36
Issue derogation††	2.60	1.49	2.53	1.35	2.55	1.30	2.54	1.28	2.53	1.40	2.45	1.37	2.34	1.29	2.31	1.22
Perceived manipulation††	2.40	1.50	2.38	1.48	2.40	1.25	2.37	1.30	2.40	1.43	2.23	1.35	2.17	1.29	2.14	1.13
Total efficacy	5.34	1.00	5.50	1.01	5.57	1.06	5.53	1.03	5.65	1.02	5.64	0.96	5.46	1.01	5.40	0.96
Total threat	4.95	0.91	5.18	0.84	5.10	0.82	5.02	0.97	5.06	0.99	4.94	0.92	4.84	0.76	4.95	0.93
Discriminating Value	0.39	1.14	0.33	1.25	0.47	1.06	0.50	1.16	0.58	1.29	0.70	1.32	0.61	1.15	0.44	1.28
Total clicks on reccomendation	0.21	0.41	0.12	0.33	0.24	0.43	0.33	0.56	0.38	0.52	0.45	0.53	0.39	0.52	0.40	0.49

†Positive outcome variables; ††Negative outcome variables

Hypothesis Testing

A series of three-way multivariate analyses of covariance (MANCOVA) and a series of three-way analyses of covariance (ANCOVA) were run in order to test the hypotheses. Fear, humor, and behavioral complexity were introduced in each model as the categorical independent variables, and full models were run allowing for all possible interactions between the factors. Additionally, age, gender, daily average of hours spent in sun, issue involvement, and current mood were entered as control variables. As age was not a significant confounding variable in any of the models, it was excluded from further analysis. The other variables were kept for all models as they were each found to be significant ($p<.05$) in at least one of the analyses. Gender's significance is likely due to the fact that males are used in the main images of the ads. Mood was a significant confounding variable in a majority of the analyses; one's current mood state will unsurprisingly affect reactions to an ad that requires not only cognitive but emotional processing. Furthermore, issue involvement was a significant covariate in about half of the analyses. As discussed earlier, issue involvement was only asked *after* exposure to the stimuli, and thus it is

highly plausible that scores on this measure not only reflect long-standing personal beliefs, but immediate reactions to the ad as well. Lastly, sun hours was found to be significant in one case. These significant covariates were accounted for by being entered into all of the models run, and will not be discussed further.

Firstly, in order to look at how the independent variables affected the positive outcome variables, a three-way MANCOVA was run using attitude towards the behavior and intention to use the recommendation as the dependent variables. These two variables were entered into a MANCOVA as they were moderately correlated with one another, $r = .645$, $p < .001$. As Tabachnick and Fidell (2007) mention, MANOVA works well with dependent variables which are moderately correlated (i.e. about |.6|) in either direction. Results can be found in *Table 3*, and will be interpreted within the context of each hypothesis further down. Levene's test for equality of error variances was found to be not significant for either dependent variable, $p > .05$.

Next, negative outcome variables were entered into a three-way MANCOVA. These variables were also found to be moderately to highly correlated with one another, as can be seen in *Table 1*. Levene's test for equality of error variances was not found to be significant for any of the three dependent variables, $p > .05$. Results of this multivariate analysis of covariance can be seen in *Table 4*.

Lastly, two separate three-way ANCOVAs were run with discriminating value (i.e. total perceived efficacy minus total perceived threat) and total clicks on the recommendation entered as dependent variables. ANCOVA results for discriminating value can be seen in *Table 5* and for total clicks on recommendation in *Table 6.* Results of Levene's test showed that error variance of discriminating value was equal across groups ($p > .05$), however it was not equal across groups for total clicks on the recommendation ($p < .05$). Nevertheless, the F-test is considered to be fairly robust against inequality of variances when sample sizes are equal. In this case, sample sizes were relatively large and equal, ranging between 292 and 295 respondents in each level of the independent variables, thus results should not be greatly impacted by the unequal variances.

Table 3

MANCOVA Results with Positive Outcome Variables* as DVs

Source of variance	Wilks' Lambda	Multivariate *F*	df_1	df_2	*p* -value
Mood†	.943	17.212	2	574	.000
Issue Involvement†	.788	77.163	2	574	.000
Sun Hours†	.995	1.485	2	574	.227
Gender†	.999	0.327	2	574	.721
Humor	.999	0.282	2	574	.755
Fear	.994	1.702	2	574	.183
Complexity	.993	1.966	2	574	.141
Humor*Fear	.997	0.849	2	574	.428
Humor*Complexity	.998	0.681	2	574	.506
Fear*Complexity	.998	0.535	2	574	.586
Humor*Fear*Complexity	.999	0.412	2	574	.663

* Attitude towards behaviour and Intentions to use reccomendation entered as DV

† Variables entered as covariates

Table 4

MANCOVA Results with Negative Outcome Variables* as DVs

Source of variance	Wilks' Lambda	Multivariate *F*	df_1	df_2	*p* -value
Mood†	.981	3.602	3	573	.013
Issue Involvement†	.860	31.185	3	573	.000
Sun Hours†	.994	1.126	3	573	.338
Gender†	.977	4.503	3	573	.004
Humor	.994	1.136	3	573	.334
Fear	.997	0.497	3	573	.684
Complexity	1.000	0.091	3	573	.965
Humor*Fear	.995	0.928	3	573	.427
Humor*Complexity	.998	0.384	3	573	.764
Fear*Complexity	.998	0.360	3	573	.782
Humor*Fear*Complexity	.999	0.169	3	573	.917

* Message avoidance, Issue derogation, and Perceived manipulation entered as DV

† Variables entered as covariates

Table 5

ANCOVA Results with Discriminating Value (Total Efficacy - Total Threat) as DV

Source of variance	df	*F*	*p* -value
Mood†	1	12.641	.000
Issue Involvement†	1	.000	.987
Sun Hours†	1	6.144	.013
Gender†	1	2.297	.130
Humor	1	.000	.984
Fear	1	4.006	.046
Complexity	1	.053	.817
Humor*Fear	1	1.203	.273
Humor*Complexity	1	.505	.477
Fear*Complexity	1	.016	.898
Humor*Fear*Complexity	1	1.007	.316
Error	575		

† Variables entered as covariates

Table 6

ANCOVA Results with Total Clicks on Recommendation as DV

Source of variance	df	*F*	*p* -value
Mood†	1	3.178	.075
Issue Involvement†	1	.537	.464
Sun Hours†	1	2.757	.097
Gender†	1	0.098	.754
Humor	1	1.580	.209
Fear	1	19.423	.000
Complexity	1	.135	.713
Humor*Fear	1	3.383	.066
Humor*Complexity	1	.439	.508
Fear*Complexity	1	.060	.807
Humor*Fear*Complexity	1	1.831	.177
Error	575		

† Variables entered as covariates

H1. Perceived humor and defensive motivation (message rejection) will have a negative relationship, such that a humorous ad will have lower message rejection than a non-humor ad.

In order to test the hypothesis, MANCOVA results for negative outcome variables were inspected to see if a significant main effect of humor was present. Referring to *Table 4*, the main effect of humor was not found to be significant, $F(3, 573)= 1.136$, $p= .338$. Additionally ANCOVA results for discriminating value were investigated, and no main effect of humor was found here either, $F(1, 575)= .000$, $p= .984$. Furthermore, it appears that neither group rejected the message as can be evidenced by the positive discriminating values for both humor ($M= .50$, $SD= 1.23$) and non-humor ($M= .51$, $SD= 1.16$) groups. Taking these results into account, hypothesis 1 was not supported.

H2. A mixed humor/high fear appeal ad will result in higher message acceptance (lower message rejection) than a pure high fear appeal ad.
H3. A mixed humor/high fear appeal ad will result in higher message acceptance (lower message rejection) than a predominantly humor appeal ad (mixed humor/low fear).

In order to test both of these hypotheses it was first necessary to investigate if there was a significant interaction present between humor and fear on negative outcome variables, positive outcome variables, discriminating value, or total clicks on the recommendation. Referring to the earlier mentioned MANCOVA and ANCOVA results (*Tables 3-6)*, no significant interaction between humor and fear was found on positive outcome variables ($F(2, 574)= .849$, $p= .428$), on negative outcome variables ($F (3, 573)= .928$, $p= .427$), or on discriminating value ($F(1, 575)= 1.203$, $p= .273$). Looking at the ANCOVA conducted for total clicks on the recommendation however, we see a marginally significant interaction between humor and fear, $F(1,575)= 3.383$, $p= .066$. A graphical representation of this interaction can be seen in *Figure 3*.

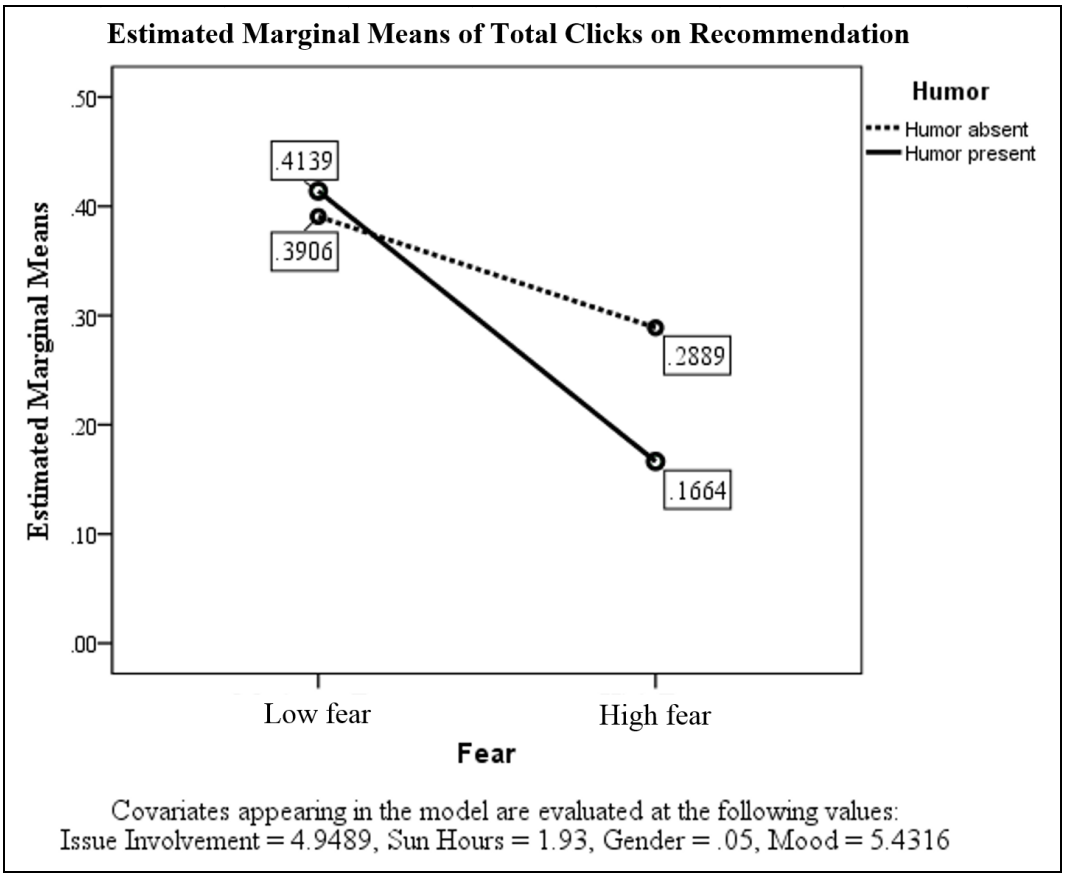


Figure 3. Interaction between fear and humor on total clicks on recommendation.

In order to better understand the interaction, two additional analyses of covariance were conducted with the same covariates as previous analyses (issue involvement, mood, gender and sun hours). Hypothesis 2 predicted that a mixed humor and high fear appeal ad would lead to higher message acceptance (i.e. higher total number of clicks on the recommendation in this case) than a pure high fear appeal ad with no humor present. An ANCOVA among the high fear condition revealed a significant main effect of humor, $F(1, 284)= 6.018$, $p= .015$. Further inspection of the marginal means demonstrated that the effect was opposite to the one predicted, such that ads which also incorporated humor alongside the high fear led to less clicks on the recommendation ($M= .16$, $SE= .04$) than ads which did not incorporate humor ($M= .29$, $SE= .04$). Taking all of these results into account, no support was found for hypothesis 2.

Hypothesis 3 predicted that the mixed humor and high fear appeal ad would result in higher message acceptance (i.e. higher total number of clicks on the recommendation) compared to a mixed humor and low fear appeal ad. Although the ANCOVA revealed a significant main

effect of fear among the humor present condition ($F(1,286)= 20.640$, $p<.001$), it was in the opposite direction than expected, with the low fear respondents having clicked more on the recommendation ($M= .41$, $SE= .04$) compared to high fear respondents ($M= .17$, $SE= .04$). Hypothesis 3 was not supported.

H4. When humor is present, message acceptance will be higher (message rejection will be lower) when the recommended follow-up behavior is simple than when it is complex.

Hypothesis 4 was tested by looking for an interaction between humor and recommendation complexity on any of the outcome measures. Again referring to *Tables 3-6,* it was found that these two independent variables did not interact in a significant way on positive outcome variables ($F(2, 574)= .681$, $p= .506$), negative outcome variables ($F(3, 573)= .384$, $p= .764$), discriminating value ($F(1, 575)= .505$, $p= .477$), or total clicks on the recommendation ($F(1, 575)= .439$, $p= .508$). Therefore, no evidence was found in support of hypothesis 4.

H5. Message acceptance will be highest (message rejection will be lowest) for ads with humor present, high fear, and low behavioral complexity of recommended response.

Hypothesis 5 was tested by looking for an interaction between humor, fear, and recommendation complexity. Referring to *Tables 3-6,* no such significant interaction was observed on positive outcome variables ($F(2, 574)= .412$, $p= .663$), negative outcome variables ($F(3, 573)= .169$, $p= .917$), discriminating value ($F(1, 575)= 1.007$, $p= .316$), or total clicks on the recommendation ($F(1, 575)= 1.831$, $p= .177$). Hypothesis 5 was not supported.

Additional Analyses

Main effect of fear. Although not hypothesized, a main effect of fear was observed on discriminating value (*Table 5;* $F(1,575)= 4.006$, $p= .046$) and total clicks on recommendation (*Table 6*; $F(1,575)= 19.423$, $p<.001$). High fear led to a lower discriminating value ($M= .405$, $SE= .070$) compared to low fear ($M=.604$, $SE= .070$). Similarly, high fear ads garnered less clicks on the recommendation ($M= .228$, $SE= .028$) compared to low fear ads ($M= .402$, $SE= .028$).

Threat and efficacy as mediators of outcome. In addition to simply using the discriminating value as an outcome variable, it was investigated if the simple and interactive effects of fear and humor on positive and negative outcome measures were mediated by perceived threat and perceived efficacy. A serial mediation analysis revealed no significant serial mediation through perceived threat and perceived efficacy on any of the positive or negative outcome variables, with recommendation complexity, gender, issue involvement, mood and sun hours entered as covariates .

Message acceptance. Although the data did not support any of the hypothesized effects, further analysis was undertaken to see if the ads were successful in persuading respondents regardless of the condition they were assigned to. Since there was no true control sample of unexposed respondents with which comparisons could be made, scores from respondents in each test cell (i.e. the eight ads) were compared to the neutral mid-point of the scales through a series of one-sample *t*-tests. Specifically, respondents' scores on positive and negative outcome measures as well as their scores of perceived threat and perceived efficacy were tested against the test value of "4", the neutral mid-point of the seven-point scales used in the survey. Additionally, respondents' calculated discriminating value was tested against the test value of "0", the "critical value" whereby an individual moves from fear control mode (message rejection) into danger control mode (message acceptance). Means and standard deviations of these measures for each test cell can be seen in *Table 2,* and results of the one-sample *t*-tests are reported in *Table 7*. Referring to the results in *Table 7*, it can be seen that all test cells were significantly above the neutral mid-point for positive outcome measures and significantly below the neutral mid-point for negative outcome measures. Thus, respondents showed positive attitudes towards the behavior, above neutral intentions to follow the recommendation(s), and also exhibited low maladaptive reactions such as avoiding the message, derogating the issue at hand or feeling the message was manipulative.

Furthermore, all test cells were significantly above the neutral mid-point on both perceived threat and perceived efficacy, indicating that respondents not only felt the threat of skin cancer was a significant one, but also that the recommendation(s) presented were a good preventative measure which they felt capable to carry out. Moreover, their perceptions of efficacy were higher than their perceptions of threat, boosting them into adaptive danger control

mode (message acceptance), as evidenced by the positive discriminating values significantly higher than the critical value of "0" in all of the test cells.

Table 7

One-sample *t*- test Results

Test cell	1	2	3	4	5	6	7	8
Fear condition	High fear	High fear	High fear	High fear	Low fear	Low fear	Low fear	Low fear
Humor condition	Humor present	Humor present	Humor absent	Humor absent	Humor present	Humor present	Humor absent	Humor absent
Complexity condition	Simple	Complex	Simple	Complex	Simple	Complex	Simple	Complex
	n=70	n=74	n=78	n=70	n=74	n=76	n=72	n=73
t (df)	*t* (69)	*t* (73)	*t* (77)	*t* (69)	*t* (73)	*t* (75)	*t* (71)	*t* (72)
Attitude towards behaviour†	**13.066*****	**13.584*****	**19.489*****	**12.624*****	**17.381*****	**16.500*****	**15.910*****	**13.355*****
Intentions to use recommendation†	**5.794*****	**9.331*****	**8.429*****	**8.285*****	**8.628*****	**8.753*****	**5.880*****	**5.660*****
Message Avoidance††	**-9.187*****	**-11.672*****	**-9.361*****	**-10.709*****	**-9.857*****	**-10.487*****	**-10.580*****	**-10.303*****
Issue derogation††	**-7.873*****	**-9.415*****	**-9.885*****	**-9.530*****	**-9.044*****	**-9.903*****	**-10.945*****	**-11.819*****
Perceived manipulation††	**-8.937*****	**-9.412*****	**-11.295*****	**-10.513*****	**-9.632*****	**-11.423*****	**-11.991*****	**-14.031*****
Total efficacy	**11.159*****	**12.869*****	**13.115*****	**12.359*****	**13.896*****	**14.911*****	**12.240*****	**12.476*****
Total threat	**8.761*****	**11.990*****	**11.763*****	**8.862*****	**9.209*****	**8.899*****	**9.371*****	**8.727*****
Discriminating Value	2.872**	2.256*	**3.935*****	3.638**	**3.898*****	**4.604*****	**4.513*****	2.958**

All measures were tested against a test value of "4", with the exception of discriminating value which was tested against a test value of "0"
Two-tailed *t* -test is significant at the *p<0.05 level; **p<0.01 level; ***p<0.001 level
†Positive outcome variables; ††Negative outcome variables

Discussion

Summary of Results

The goals of the current study were threefold. Firstly, in order to address the problematic and pervasive use of extreme fear appeals in the advertising world, an alternative approach of mixing both humor and fear to create persuasive appeals was explored. Although a small handful of studies have already explored this combination, the current study sought to further validate generalizability of results by operationalizing persuasion in a health campaign context, namely as taking preventative action to protect oneself against skin cancer. Secondly, in order to further extend the limited literature on the topic, the persuasion process was explored within the tenets of the Extended Parallel Processing Model. The EPPM takes into account the mediating

cognitive process of threat and efficacy appraisal that leads to message acceptance or rejection. Thirdly, complexity of the recommendation was explored as a potential moderator of outcomes when humor was present in the ad.

The current study found that having humor present in an ad did not diminish message rejection (*H1*). Additionally, a mixed humor and high fear appeal did not increase persuasion above and beyond a simple high fear appeal or a predominantly humor appeal (*H2, H3*). With regard to the first goal of the study, although adding humor to fear appeals did not appear to increase message acceptance, it did not diminish it either. One exception was the observed interaction between fear and humor and total clicks on the recommendation. Here, it was found that adding humor to a low fear ad slightly increased the attention paid to the recommendation, however this addition significantly lowered the amount of clicks in the case of high fear ads. Although these results contradict previous findings (see Mukherjee & Dubé, 2012), the nature of the measure may be to blame; namely limiting respondents to only two clicks. Moreover, a non-hypothesized main effect of fear was observed whereby increasing fear led to less attention being paid to the recommendation and lower message acceptance as measured by discriminating value. Interestingly, an additional analysis demonstrated that all of the ads were indeed persuasive (versus a neutral reaction), even if their hypothesized differential impacts on persuasion were not supported.

The second goal of the study, namely taking into account the cognitive mediating process as outlined by the EPPM, led to a richer analysis than just looking at other outcome variables alone, as was done in other studies on the topic. Serial mediation analysis did not support the serial mediation of fear and humor simple effects or the interactive effect of humor and fear on outcome variables through perceived threat and perceived efficacy. Nonetheless, using the calculated discriminating value (perceived efficacy minus perceived threat) as an outcome variable allowed for the cognitive process to be accounted for.

Regarding the third goal of the study, complexity of the recommendation was not found to moderate humor's effect on persuasion, regardless of fear level (*H4, H5)*.

Theoretical Implications

In general, advertising research should aim to elucidate tactics currently being used by brands and organizations around the world. Although humorous threat appeals are becoming

quite commonplace in the advertising world, little research has been conducted to date to investigate the persuasive properties of this approach.

Combining humor and fear to persuade an audience. Prior research (Mukherjee & Dubé, 2012) suggests that humor and fear interact such that increasing fear decreases persuasion in the absence of humor, and increases persuasion in the presence of humor. Although the null findings in the current study do not align with previous results, they do still show that fear is not the only effective way to communicate with an audience. As was mentioned earlier, all of the ads tested were found to be persuasive in the sense that respondents reacted in a way significantly different from a neutral response. As Lewis, Watson, and White (2013) demonstrated, a multitude of emotions ranging from pride to annoyance to humor can effectively be used to deliver a message. Furthermore, the significant main effect of fear showed that increasing fear may in fact lower message acceptance, which supports previous research. Keller and Block (1996) found that the more fearful a message is, the more an individual is likely to elaborate upon the problem (i.e. the threat), and consequently turn to defensive mechanisms to avoid the message. Likewise, the current study found that an ad generating high fear in the presence of humor was found to lower the amount of attention paid to the recommendation.

In sum, the current study contributes to the scarce literature on mixed fear and humor appeals by showing that even in cases where adding humor to a low fear appeal does not improve the ad's persuasive power, it does not diminish it either. Additionally, increasing fear in the presence of humor, or even increasing fear alone, may actually decrease message acceptance.

Understanding mixed fear and humor appeals through the lens of the EPPM.

The current study sought to further extend existing literature on humorous threat appeals by examining them within the EPPM framework. Results were not able to show the presumed serial mediation of the message elements on outcome through perceived threat and perceived efficacy. Nonetheless, this was not one of the main focal points of the study. Measuring perceived threat and perceived efficacy was mainly done in order to obtain a more comprehensive outcome measure to be used in conjunction with other positive and negative outcome measures. In the additional analyses, all of the ads were found to be persuasive as indicated by respondents' outcome scores that significantly differed from a neutral response.

Importantly, as Popova (2012) mentions, having a positive discriminating value alone may not necessarily indicate message acceptance. It is also necessary to see if the perceived threat and perceived efficacy components used to calculate the discriminating value are high on their own as well. It is firstly necessary to have a high threat appraisal to be motivated to continue processing the message (Witte et al., 1996). In the current study, threat appraisal was indeed found to be significantly higher than the neutral midpoint. Secondly, once the threat is perceived to be significant enough, an individual then undergoes coping appraisal. Thus, since a relatively high threat appraisal is necessary to further process the message, an even higher coping appraisal is crucial to help boost the respondent into adaptive danger control mode. In the current study, overall perceived efficacy was found to be both higher than the neutral midpoint, as well as higher than the threat appraisal. This further validated the conclusion that all of the ads led to a positive outcome. These findings point out the importance of considering cognitive processing components when evaluating message persuasion.

Complexity of recommended behavior as a moderating variable in humorous ads. Mukherjee and Dubé (2012) had suggested that the complexity of a recommendation may affect intentions to adopt the suggestions when presented as part of a humor appeal. Specifically, they mention that the demanding cognitive load of processing a humorous appeal will interfere with processing a complex recommendation, thus leading to lower persuasion than if humor was absent. The current study's results did not support these assumptions. However, as message acceptance is also preceded by the cognitive assessment of threat and efficacy (Popova, 2014; Witte et al., 1996), it's quite possible that the incremental cognitive demand of processing a complex versus a simple recommendation is negligible.

Managerial and Social (Ethical) Implications

Powerful global brands have large advertising budgets which they can use quite liberally on various branding and promotional efforts. Non-profit organizations also have important messages they need to communicate to the public, however they often have to make do with much more limited budgets. The Canadian Cancer Society's 2014 financial statements show that a large majority (roughly 90%) of their revenue comes from fundraising events and other means of charity, while another 5% or so comes from government funding (Canadian Cancer Society,

2015). These effortfully raised funds need to be used sparingly and wisely. In 2014, the Canadian Cancer Society spent a little over 8 million dollars on advocacy efforts, representing around 7% of all mission expenditures, including research and programs. To add some perspective, Canadian Tire, a national Canadian retail chain, spent over 381 million dollars on marketing and advertising efforts in 2014 (Canadian Tire Corporation, 2015). The current study's findings can help guide non-profit organizations such as the Canadian Cancer Society in creating persuasive communication materials that make the most of their limited budgets.

In the process of developing an ad, the organization (or hired advertising agency) should make sure to pre-test several versions using the Risk Behaviour Diagnosis scale (Witte et al., 1996). This scale was used in the current study to measure both perceived efficacy and perceived threat, and ultimately to calculate the discriminating value. As Witte et al. (1996) mention, this scale was designed first and foremost with practitioners in mind, and its straightforward and short structure lends well to use outside of the laboratory. In the current study, the discriminating value allowed us to compare eight different types of ads and establish that firstly, they were all effective, and secondly, that increasing fear made the ads less persuasive. An organization can also use this scale to troubleshoot problems with the ads; for example, if results show low efficacy perceptions, the ad can be modified to accentuate or improve the communication style or content of the recommendations.

Furthermore, organizations should not limit themselves to fear-mongering techniques when disseminating information. The current study showed that ads which mixed both low fear and humor or even predominantly used humor were found to be equally effective as pure low fear appeal ads. The results also showed that increasing fear may in fact lead to lower persuasion levels. Furthermore, previous literature shows that fear appeals don't work well with all audiences. For example, fear appeals were actually found to increase unwanted behaviors in rebellious individuals (Lee & Furgeson, 2002). With this in mind, organizations (or hired ad agencies) should explore a wider variety of emotional appeals to incorporate into their creative.

The current study also addresses ethical concerns regarding extreme fear appeals. As Hastings et al. (2004) mention, although these messages may be targeted to a specific group, unintended audiences, such as young children, may also be exposed. These fearful messages may cause a lot of anxiety and distress in these individuals. Companies and organizations should take this into consideration when developing advertisements. Humor, if applicable to the topic at

hand, lower levels of fear, or a combination of both, should be considered as more ethical alternatives.

Limitations and Future Research

Although this research has led to some interesting results and actionable insights, it is not without its limitations. Firstly, the methodology entailed forced ad exposure without real-world context, compromising ecological validity. However, this was considered to be a valuable trade-off, as this type of design maximizes internal validity and facilitates participants' full attention to the communication materials. Secondly, although the ads were pre-tested with a diverse sample and refined accordingly, the message development and design was not actually guided by any specific theory. Nevertheless, this bottom-up approach is often employed by similar studies (e.g. Popova, 2014). Thirdly, a lot of studies using the EPPM framework often manipulate threat instead of fear, as some claim that threat is in fact the message element which can be controlled and manipulated (Witte, 1992). Conversely, Mukherjee and Dubé (2012) argue that the same threat stimulus can elicit a different level of fear arousal depending on individual factors. Moreover, they point out that fear arousal is the motivating factor that leads to behavior and attitude change. For these reasons, they support their decision to manipulate fear instead of threat. In addition to these aforementioned points, the current study opted to use fear as the antecedent measure because perceived threat was used indirectly as a dependent variable when calculating the discriminating value. Although manipulating fear instead of threat is not necessarily a limitation, it is important to bring up because different researchers have varying viewpoints regarding the matter. Fourthly, some of the measures used in the study required wording to be adapted to the current context. For example, measures for perceived efficacy and perceived threat have to be tailored to mention the health threat communicated in the ads. In the current study, the health threat inserted in these items was "skin cancer"; however another study using a similar topic in their ads simply mentioned "sun damage". Choosing the right wording is somewhat subjective, and can impact respondents' answers, the significance of results, and comparability across studies.

Future studies should investigate if any support can be garnered for the hypothesized relationships when using a different type of humor, such as irony. Today's generation of consumers are tech-savvy, knowledge-hungry, somewhat cynical, and highly skeptical. These

factors have led to the rise in use of ironic humor in advertisements (Pehlivan, Berthon, & Pitt, 2011), and even as part of public health campaigns to raise awareness for skin cancer (see Appendix E for example). The cognitive processing demands of ironic humor, as compared to visual humor, are arguably even higher due to its intricate nature and dual-processing requirements (Lyttle, 2001). It would thus be interesting to see if this increase in cognitive processing would allow for recommendation complexity to emerge as a significant moderator of persuasion. Culture would be another interesting moderator future studies could explore. Although humor is universal, research has shown that people of different cultural backgrounds react to humor in various ways, language differences notwithstanding (Weinberger & Gulas, 1992). Even within Canada, cultural differences can be observed, for example, between Francophone Quebecers, Anglophone Ontarians, or first-generation Chinese immigrants living in British Columbia. Humorous threat messages may lead to differing levels of persuasion for these cultural groups and warrants investigation. Lastly, it would be fruitful for future studies to incorporate measures of long-term persuasion effects, such as behavior change. Witte et al. (1996) measure self-reported behaviors regarding the health threat both before ad exposure, as well as two weeks later, in order to see if participants actually changed their behavior by following the prescribed recommendations. Stronger conclusions could be drawn from studies if long-term causal effects can be demonstrated.

References

Basil, M., Basil, D., Despande, S., & Lavack, A.M. (2013). Applying the extended parallel process model to workplace safety messages. *Health Communication, 28*(1), 29-39.

Beard, F.K. (2005). One hundred years of humor in American advertising. *Journal of Macromarketing, 25*(1), 54-65.

Block, L.G., & Williams, P. (2002). Undoing the effects of seizing and freezing: Decreasing defensive processing of personally relevant messages. *Journal of Applied Social Psychology, 32*(4), 803-833.

Burgoon, M., Alvaro, E., Grandpre, J., & Voulodakis, M. (2002). Revisiting the Theory of Psychological Reactance: Communicating Threats to Attitudinal Freedom. In J. Price Dillard & M. Pfau (Eds.), *The persuasion handbook: Developments in theory and practice* (213-232). Thousand Oaks, CA: Sage.

Canadian Cancer Society. (2015). *2014 financial statements of the Canadian Cancer Society.* Retrieved from http://www.cancer.ca/~/media/cancer.ca/CW/about%20us/financial%20statements/Financial-statement-2014-2015-EN.pdf

Canadian Cancer Society's Advisory Committee on Cancer Statistics. (2014). *Canadian cancer statistics 2014, special topic: Skin cancers.* Retrieved from http://www.cancer.ca/~/media/cancer.ca/CW/cancer%20information/cancer%20101/Canadian%20cancer%20statistics/Canadian-Cancer-Statistics-2014-EN.pdf

Canadian Tire Corporation. (2015). *2014 annual report of the Canadian Tire Corporation*. Retrieved from http://corp. canadiantire.ca/EN/Investors/Documents/2014%20Annual%20Report-EN.pdf

Carcioppolo, N., Jensen, J.D., Wilson, S.R., Collins, W.B., Carrion, M., & Liennemeier, G. (2013). Examining HPV threat-to-efficacy ratios in the extended parallel process model. *Health Communication, 28*(1), 20-28.

CDC: Centers for Disease Control and Prevention. (Retrieved March 6, 2013). Retrieved from http://www.cdc.gov/tobacco/data_statistics/index.htm.

Conway, M., & Dubé, L. (2002). Humor in persuasion on threatening topics: Effectiveness is a function of audience sex role orientation. *Personality and Social Psychology Bulletin, 28*(7), 863-873.

Eisend, M. (2009). A meta-analysis of humor in advertising. *Journal of the Academy of Marketing Science, 37*(2), 191-203.

Eisend, M. (2011). How humor in advertising works: A meta-analytic test of alternative models. *Marketing Letters, 22*(2), 115-132.

Goodall, C.E., & Reed, P. (2013). Threat and efficacy uncertainty in news coverage about bed bugs as unique predictors of information seeking and avoidance: An extension of the EPPM. *Health Comunication, 28*(1), 63-71.

Gore, T.D., & Bracken, C.C. (2005). Testing the theoretical design of a health risk message: Reexamining the major tenets of the extended parallel process model. *Health Education & Behavior, 32*(1), 27-41.

Hastings, G., Stead, M., & Webb, J. (2004). Fear appeals in social marketing: Strategic ethical reasons for concern. *Psychology & Marketing, 21*(11), 961-986.

Health Canada. (Retrieved March 6, 2013). Retrieved from: http://www.hc-sc.gc.ca/hc-ps/tobac-tabac/legislation/label-etiquette/cigarette-eng.php.

Hovland, C., Janis, I., & Kelly, H. (1953). *Communication and persuasion*. New Haven, CT: Yale University Press.

Jacks, J.Z., & Cameron, K.A. (2003). Strategies for resisting persuasion. *Basic and Applied Psychology, 25*(1), 145-161.

Keller, P. A., & Block, L.G. (1996). Increasing the persuasiveness of fear appeals: The effect of arousal and elaboration. *Journal of Consumer Research, 22*(4), 448-459.

Lavoie, N.R., & Quick, B.L. (2013). What is the truth? An application of the extended parallel process model to televised truth ads. *Health Communication*, *28(*1), 53-62.

Lee, M. J., & Ferguson, M.A. (2002). Effects of anti-tobacco advertisements based on risk-taking tendencies: Realistic fear vs. vulgar humor. *Journalism & Mass Communication Quarterly, 79*(4), 945-963.

Lee, M. J., & Shin, M. (2011). Fear versus humor: The impact of sensation seeking on psychological, cognitive, and emotional responses to antialcohol abuse messages. *The Journal of Psychology, 145*(2), 73-92.

Leventhal, H. (1971). Fear appeals and persuasion: The differentiation of a motivational construct. *American Journal of Public Health, 61*(6), 1208-1224.

Lewis, I.M., Watson, B., & White, K.M. (2010). Response efficacy: The key to minimizing rejection and maximizing acceptance of emotion-based anti-speeding messages. *Accident Analysis & Prevention, 42*(459-467).

Lewis, I.M., Watson, B., & White, K.M. (2013). Extending the explanatory utility of the EPPM beyond fear-based persuasion. *Health Communication 28*, 84-98.

Lewis, I.M., Watson, B., White, K.M., & Tay, R. (2007). Promoting public health messages: Should we move beyond fear-evoking appeals in road safety? *Qualitative Health Research, 17*(1), 61-74.

Liberman, A., & Chaiken, S. (1992). Defensive processing of personally relevant health messages. *Personality and Social Psychology Bulletin, 18*(6), 669-679.

Lyttle, J. (2001). The effectiveness of humor in persuasion: The case of business ethics training. *The Journal of General Psychology, 128*(2), 206-216.

Maddux, J.E., & Rogers, R.W. (1983). Protection motivation and self-efficacy: A revised theory of fear appeals and attitude change. *Journal of Experimental Social Psychology, 19*, 469-479.

Maloney, E.K., Lapinski, M.K., & Witte, K. (2011). Fear appeals and persuasion: A review and update of the extended parallel process model. *Social and Personality Psychology Compass 5*(4), 206-219.

McKay, D.L., Berkowitz, J.M., Blumberg, J.B., & Goldberg, J.P. (2004). Communicating cardiovascular disease risk due to elevated homocysteine levels: Using the EPPM to develop print materials. *Health Education & Behavior, 31*(3), 355-371.

McKinley, C.J. (2009). Investigating the influence of threat appraisals and social support on healthy eating behavior and drive for thinness. *Health Communication, 24*(8)*,* 735-745.

McMahan, S., Witte, K., & Meyer, J. (1998). The perception of risk messages regarding electromagnetic fields: Extending the EPPM to an unknown risk. *Health Communication, 10*(3), 247-259.

Mukherjee, A., & Dubé, L. (2012). Mixing emotions: The use of humor in fear advertising. *Journal of Consumer Behavior, 11*(2), 147-161.

Muthusamy, N., Levine, T.R., & Weber, R. (2009). Scaring the already scared: Some problems with HIV/AIDS fear appeals in Namibia. *Journal of Communication, 59*(2)*,* 317-344.

Nabi, R.L, Moyer-Gusé, E., & Byrne, S. (2007). All joking aside: A serious investigation into the persuasive effect of funny social issue messages. *Communication Monographs, 74*(1), 29-54.

Park, C.W., MacInnis, D.J., Priester, J., Eisingerich, A.B., & Iacobucci, D. (2010). Brand attachment and brand attitude strength: Conceptual and empirical differentiation of two critical brand equity drivers. *Journal of Marketing, 74*(6), 1-17.

Parrott, R., Egbert, N., Anderton, J., & Sefcovic, E. (2002). Enlarging the Role of Environment as a Social Influence Construct in Health Campaigns. In J. Price Dillard & M. Pfau (Eds.), *The persuasion handbook: Developments in theory and practice* (633-660). Thousand Oaks, CA: Sage.

Pehlivan, E., Berthon, P., & Pitt, L. (2011). Ad bites: Toward a theory of ironic advertising. *Journal of Advertising Research, 51*(2), 417-426.

Popova, L. (2012). The extended parallel process model: Illuminating the gaps in research. *Health Education & Behavior, 39*(4), 455-473.

Popova, L. (2014). Scaring the snus out of smokers: Testing effects of fear, threat, and efficacy on smokers' acceptance of novel smokeless tobacco products. *Health Communication*, *29*(9), 924-936.

Richard, M.A., Martin, S., Gouvernet, J., Folchetti, G., Bonderandi, J.J., & Grob, J.J. (1999). Humour and alarmism in melanoma prevention: A randomized controlled study of three types of information leaflet. *Journal of Personality and Social Psychology, 140*(5), 909-914.

Roehm, H.A., & Roehm, M.L. (2005). Revisiting the effect of positive mood on variety seeking. *Journal of Consumer Research, 32*(2), 330-336.

Rogers, R.W. (1975). A protection motivation theory of fear appeals and attitude change. *The Journal of Psychology, 95*(1), 93-114.

Rogers, R.W. (1983). Cognitive and physiological processes in fear appeals and attitude change: A revised theory of protection motivation. In J. Cacioppo & R.E. Petty (Eds.), *Social psycho-physiology* (153-176). New York, NY: Guildford Press.

Roskos-Ewoldsen, D.R., Yu, J.H., & Rhodes, N. (2004). Fear appeal messages affect accessibility of attitudes toward the threat and adaptive behaviors. *Communication Monographs, 71*(1), 49-69.

Ruiter, R.A.C., Kok, G., Verplanken, B., & Burg, J. (2001). Evoked fear and effects of appeals on attitudes to performing breast self-examination: An information-processing perspective. *Health Education Research, 16*(3), 307-319.

Sabri, O. (2012). Taboo advertising: Can humor help to attract attention and enhance recall? *Journal of Marketing Theory and Practice, 20*(4), 407-422.

Shi, R., & Hazen, M.D. (2012). Applying the extended parallel process model to examine posters in the 2008 Chinese annual anti-drug campaign. *Journal of Asian Pacific Communication, 22*(1), 60-77.

Skalski, P., Tamborini, R., Glazer, E., & Smith, S. (2009). Effects of humor on presence and recall of persuasive messages. *Communication Quarterly, 57*(2), 136-153.

Speck, P.S. (1990). The humorous message taxonomy: A framework for the study of humorous ads. *Current Issues & Research in Advertising, 13*(1), 1-44.

Spotts, H.E., Weinberger, M.G., & Parsons, A.L. (1997). Assessing the use and impact of humor on advertising effectiveness: A contingency approach. *Journal of Advertising, 26*(3), 17-32.

Strick, M., Holland, R.W., Van Baaren, R.B., &Van Knippenberg, A. (2009). Finding comfort in a joke: Consolatory effects of humor through cognitive distraction. *Emotion*, *9*(4), 574-578.

Strick, M., Holland, R.W., Van Baaren, R.B., &Van Knippenberg, A. (2010). The puzzle of joking: Disentangling the cognitive and affective components of humorous distraction. *European Journal of Social Psychology, 40*(1)*,* 43-51.

Strick, M., Holland, R.W., Van Baaren, R.B., &Van Knippenberg, A. (2012). Those who laugh are defenseless: How humor breaks resistance to influence. *Journal of Experimental Psychology: Applied, 18*(2), 213-223.

Tabachnick, B.G., & Fidell, L.S. (2006). Using multivariate statistics (5th ed.). Boston, MA: Pearson Education.

Ventis, W.L., Higbee, G., & Murdock, S.A. (2001). Using humor in systematic desensitization to reduce fear. *The Journal of General Psychology, 128*(2), 241-253.

Voss, K.E. (2009). Using humor in conjunction with negative consequences in advertising. *Journal of Current Issues and Research in Advertising, 31*(2), 25-39.

Weinberger, M.G., & Gulas, C.S. (1992). The impact of humor in advertising: A review. *Journal of Advertising, 21*(4), 35-59.

Williams, K.C. (2012a). Improving fear appeal ethics. *Journal of Academic and Business Ethics, 5*, 1-24.

Williams, K.C. (2012b). Fear appeal theory. *Research in Business and Economics Journal*, *5*, 1-21.

Witte, K. (1992). Putting the fear back into fear appeals: The extended parallel process model. *Communication Monographs, 59*(4), 329-349.

Witte, K., & Allen, M. (2000). A meta-analysis of fear appeals: Implications for effective public health campaigns. *Health Education & Behavior, 27*(5), 591-615.

Witte, K., Cameron, K.A., McKeon, J.K., & Berkowitz, J.M. (1996). Predicting risk behaviors: Development and validation of a diagnostic scale. *Journal of Health Communication, 1*(4), 317-341.

Yoon, H.J., & Tinkham, S.F. (2013). Humorous threat persuasion in advertising: The effects of humor, threat intensity, and issue involvement. *Journal of Advertising, 42*(1), 30-41.

Appendix A

Example of an Advertising Campaign Emphasizing Humor to Communicate a Threat. (Retrieved from http://www.betheartist.co.nz/)

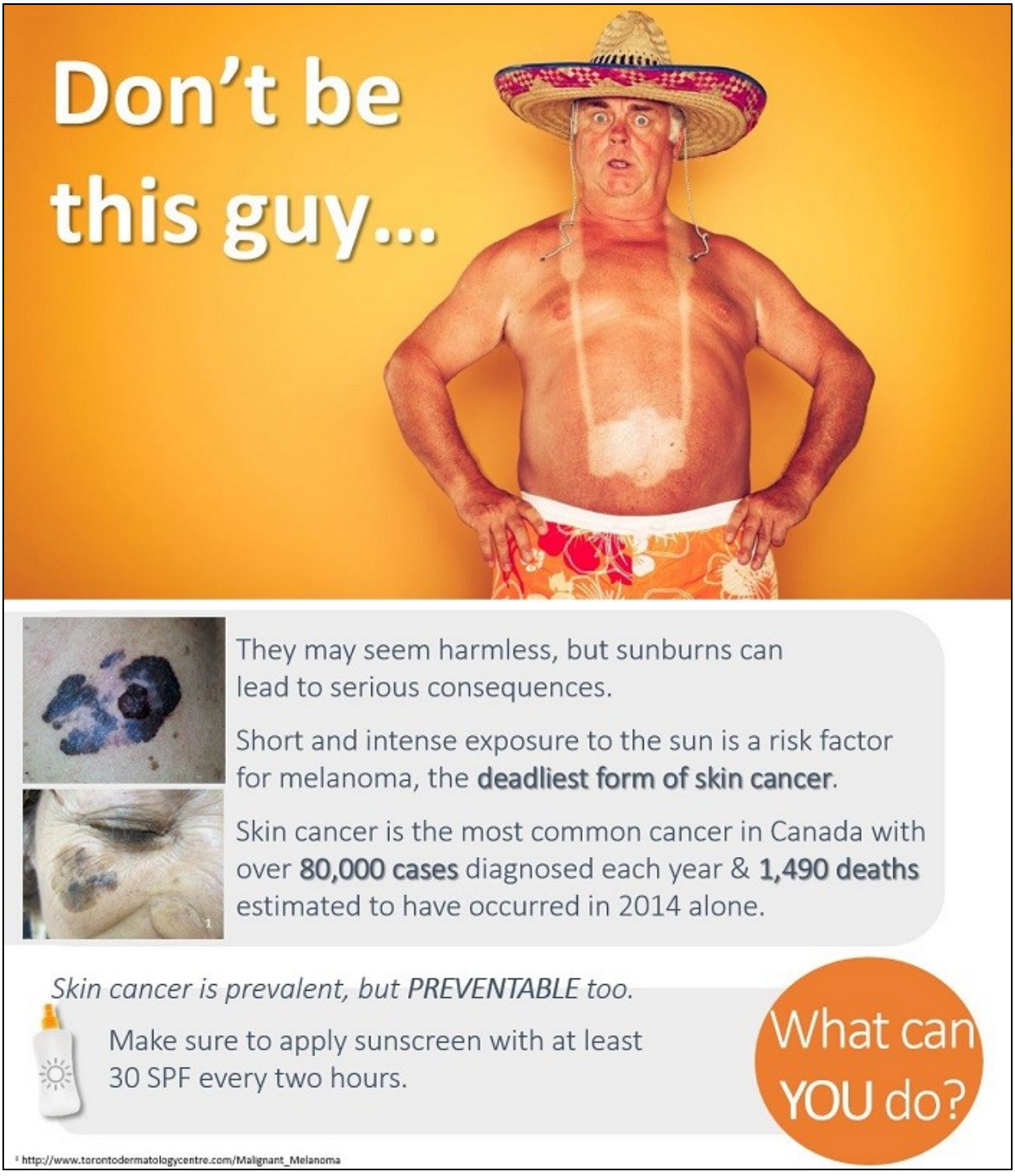
Appendix B

Example of an Advertising Campaign Emphasizing Fear to Communicate a Threat. (Retrieved from http://thechive.com/2009/03/18/clever-and-impactful-anti-smoking-ads-part-3-14-photos/)

Appendix C

Final Ad Stimuli Used for Main Experiment

Test Cell 1: High Fear * Humor Present * Simple Recommendation



Test Cell 2: High Fear * Humor Present * Complex Recommendation

Test Cell 3: High Fear * Humor Absent * Simple Recommendation

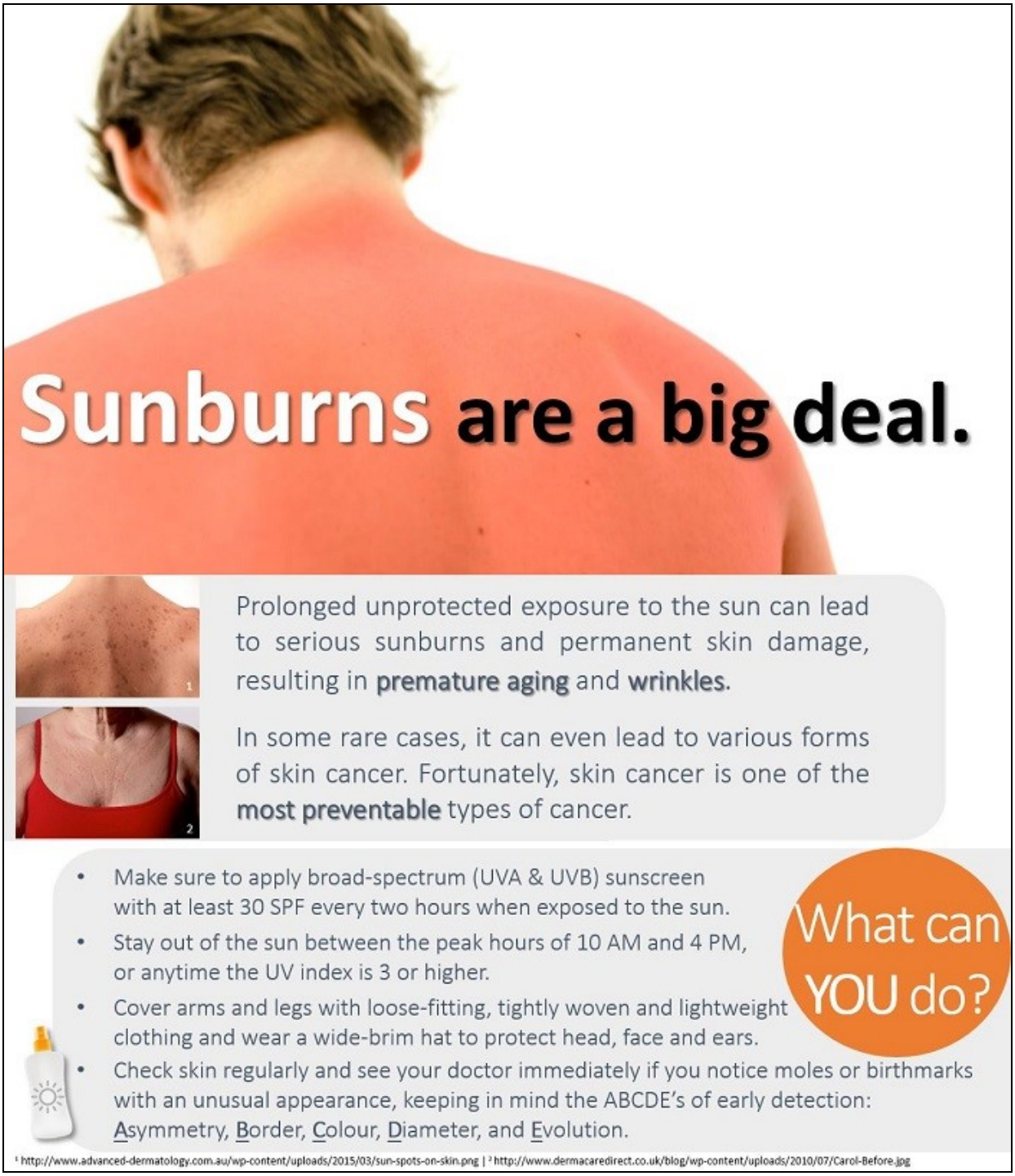
Test Cell 4: High Fear * Humor Absent * Complex Recommendation

Test Cell 5: Low Fear * Humor Present * Simple Recommendation

Test Cell 6: Low Fear * Humor Present * Complex Recommendation

Test Cell 7: Low Fear * Humor Absent * Simple Recommendation

Test Cell 8: Low Fear * Humor Absent * Complex Recommendation



Appendix D

Final Ads with Click Locations Superimposed

Note: Scale on graphs represents the vertical and horizontal pixel position of the click on the image.

Test Cell 1: High Fear * Humor Present * Simple Recommendation

Region of advertisement:	Humor	Fear	Recommendation
% of first clicks	51%	43%	6%
% of second clicks	22%	63%	15%
% of overall clicks	37%	53%	10%

Test Cell 2: High Fear * Humor Present * Complex Recommendation

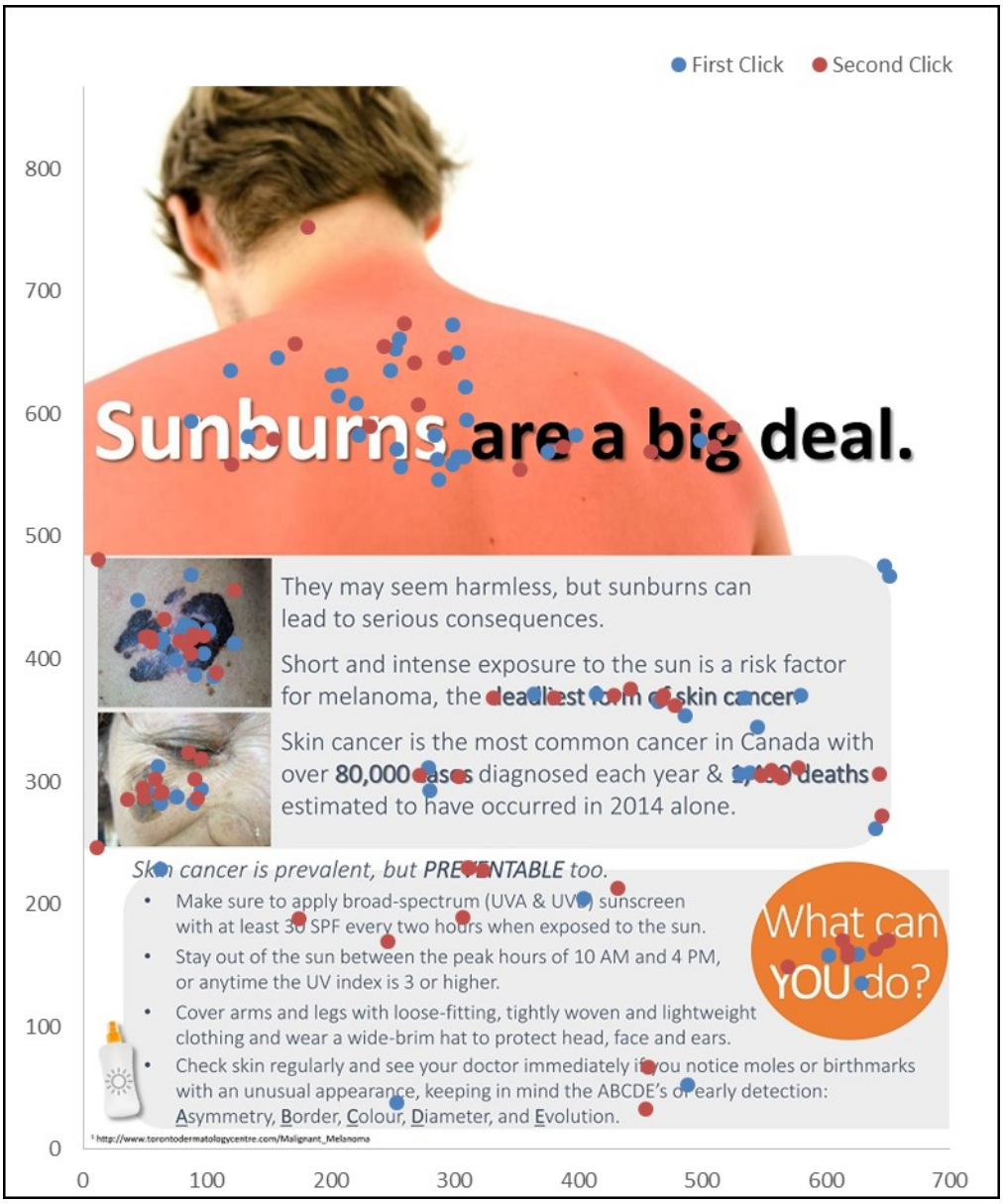
Region of advertisement:	Humor	Fear	Recommendation
% of first clicks	47%	46%	7%
% of second clicks	31%	64%	5%
% of overall clicks	39%	55%	6%

Test Cell 3: High Fear * Humor Absent * Simple Recommendation

Region of advertisement:	Humor	Fear	Recommendation
% of first clicks	41%	53%	6%
% of second clicks	18%	64%	18%
% of overall clicks	29%	58%	12%

Test Cell 4: High Fear * Humor Absent * Complex Recommendation

Region of advertisement:	Humor	Fear	Recommendation
% of first clicks	38%	52%	10%
% of second clicks	21%	56%	23%
% of overall clicks	30%	54%	16%



Test Cell 5: Low Fear * Humor Present * Simple Recommendation

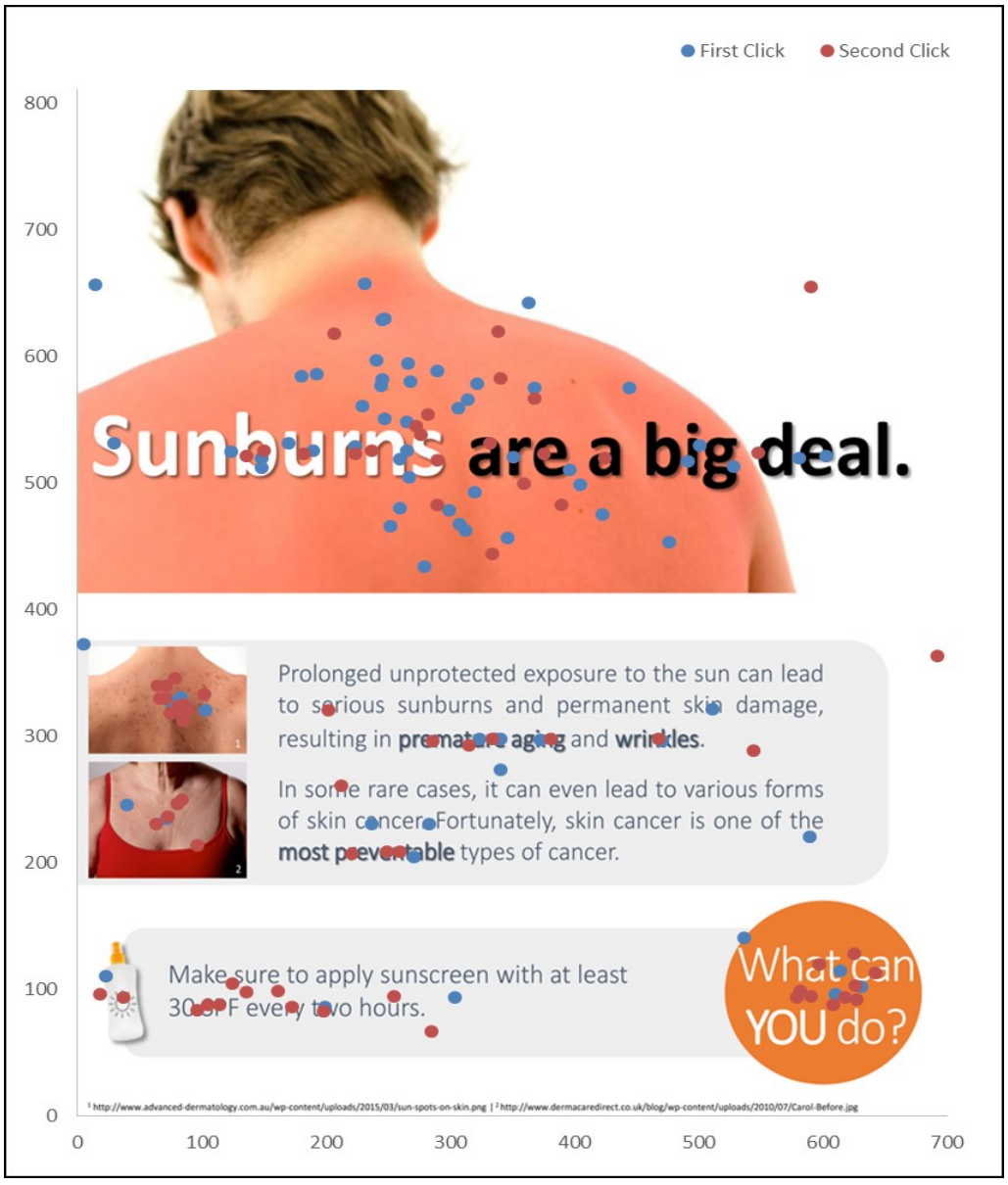
Region of advertisement:	Humor	Fear	Recommendation
% of first clicks	72%	19%	9%
% of second clicks	47%	24%	28%
% of overall clicks	59%	22%	19%

Test Cell 6: Low Fear * Humor Present * Complex Recommendation

Region of advertisement:	Humor	Fear	Recommendation
% of first clicks	71%	16%	13%
% of second clicks	32%	37%	32%
% of overall clicks	51%	26%	22%

Test Cell 7: Low Fear * Humor Absent * Simple Recommendation

Region of advertisement:	Humor	Fear	Recommendation
% of first clicks	67%	23%	10%
% of second clicks	30%	40%	30%
% of overall clicks	49%	32%	20%



Test Cell 8: Low Fear * Humor Absent * Complex Recommendation

Region of advertisement:	Humor	Fear	Recommendation
% of first clicks	76%	14%	9%
% of second clicks	24%	45%	32%
% of overall clicks	50%	30%	20%

Appendix E

Example of the Use of Ironic Humor in Fear Appeal Ads for Skin Cancer Awareness. (Retrieved from http://www.skincancer.org/healthy-lifestyle/go-with-your-own-glow/our-glow-ads)

Appendix F

Questionnaire

CONSENT FORM/ SCREENER QUESTIONS

CONSENT TO PARTICIPATE IN 'ADVERTISING IN THE HEALTH DOMAIN' STUDY

I understand that I have been asked to participate in a research project being conducted by Irina Susan-Resiga of the John Molson School of Business at Concordia University (*i_susan@jmsb.concordia.ca)* under the supervision of Dr. Bianca Grohmann of the John Molson School of Business Concordia University (*bgrohman@jmsb.concordia.ca).*

A. PURPOSE

The purpose of the current research is to gather participants' honest opinions and attitudes on advertisements in order for the researcher to evaluate their design and content.

B. PROCEDURES

I understand that I am voluntarily participating in a short survey that will take approximately 5-10 minutes to complete. I understand that no identifying information appears on the survey and that data will only be analyzed at the aggregate (group) level. I understand that the data gathered from participants' responses will be stored on the researcher's protected and secured personal computer. I understand that once the researcher no longer needs the individual-level data, she will destroy it.

C. RISKS AND BENEFITS

I understand that are there no anticipated risks associated with my participation in this survey. I understand that my participation will aid the researcher in completing her Master's thesis. I understand that the only compensation I will receive for participating in this questionnaire is from my agreement with the panel I am a part of (Research Now, or other), and that no compensation will be provided directly by the researcher.

D. CONDITIONS OF PARTICIPATION

- I understand that I am free to withdraw my consent and discontinue my participation at anytime (before the dissemination of results) without negative consequences. ***In order to discontinue the survey at any point, simply close the browser window.***
- I understand that my participation in this study is CONFIDENTIAL VIA PSEUDONYM (i.e., the researcher will be able to identify me via a unique code I'll be asked to create, but will not know or disclose my real identity).
- I understand that the data from this study may be published.

If at any time you have questions about the proposed research, please contact the study's Principal Investigator, Irina Susan-Resiga of the John Molson School of Business at Concordia University, 514.991.6387; *i_susan@jmsb.concordia.ca* or Dr. Bianca Grohmann of the John

Molson School of Business at Concordia University, 514.848.2424 ex. 4845, bgrohman@jmsb.concordia.ca.

If at any time you have questions about ethical issues in this research, please contact the Manager, Research Ethics, Concordia University, 514.848.2424 ex. 7481, oor.ethics@concordia.ca.

If you would like to print a copy of this consent form for your own records, please click the 'Print' button below.

I have carefully studied the above and understand this agreement. By clicking ">>" and continuing in the survey, I freely consent and voluntarily agree to participate in this study.

[NEXT PAGE]

1. Should you wish to withdraw from the study at any time after completing this survey, but before the results have been disseminated, it is necessary to be able to link you with your responses.

In order to create a unique identifying code, please enter the information below. If you contact the researcher at a later date, you will be asked to provide this same information.

PLEASE ENTER: First 3 characters of your postal code + First 3 letters of your FIRST name. [For example, H7X 3R3 + Ashley = H7XASH]

2. **Please indicate your age**:

3. **Have you, or someone in your immediate family, ever been diagnosed with any form of skin cancer?**
   - -Yes
   - -No

4. **Do you consider yourself to be fluent in English?**
   - -Yes
   - -No

MAIN QUESTIONNAIRE

Please indicate to what extent you feel this way right now, that is, at the present moment.

5.	Unpleasant	-	-	-	-	-	Pleasant
6.	Unhappy	-	-	-	-	-	Happy
7.	Bad	-	-	-	-	-	Good

8**. Now you will be shown an advertisement that could appear in a magazine. Please take a few moments to carefully study and read the information presented in this awareness advertisement.**

[NEXT PAGE]

[RANDOMLY INSERT 1 OF 8 AD IMAGES HERE]

-The quality of the image shown above is good enough for me to be able to evaluate its content
-The quality of the image shown above is NOT good enough for me to be able to evaluate its content
-I was not able to see any image on this page

9. **Please report your thoughts and feelings about the ad you just saw.**

On the following page, you will be shown the same advertisement you just saw earlier and you will be asked to click on the 2 areas of the ad that stand out the most to you.

[NEXT PAGE]

10. **Please click on the 2 areas that stand out the most to you. In other words, which 2 areas draw your attention the most?**

[INSERT SAME AD IMAGE HERE]

[NEXT PAGE]

Now you will be asked some additional questions in relation to the awareness advertisement you were shown. Please answer honestly, and note that there is no right or wrong answer.

[NEXT PAGE]

Please indicate the extent to which you agree or disagree with the following statements.

Strongly Disagree (1)	(2)	(3)	(4)	(5)	(6)	Strongly Agree (7)

11. I believe that skin cancer is severe
12. I believe that skin cancer is serious
13. I believe that skin cancer is significant

14. I am at risk for developing skin cancer
15. It is likely that I will develop skin cancer
16. It is possible that I will develop skin cancer

[IF COMPLEXITY CONDITION IS *SIMPLE*, DISPLAY FOLLOWING TEXT AT TOP OF PAGE:
"The questions on this page will refer to the recommendation presented in the ad you were shown. To refresh your memory, the recommended behavior is:
Make sure to apply sunscreen with at least 30 SPF every two hours."]

[IF COMPLEXITY CONDITION IS *COMPLEX*, DISPLAY FOLLOWING TEXT AT TOP OF PAGE:
"The questions on this page will refer to the recommendations presented in the ad you were shown. To refresh your memory, the recommended behaviours are:
-Make sure to apply broad-spectrum (UVA & UVB) sunscreen with at least 30 SPF every two hours when exposed to the sun.
-Stay out of the sun between the peak hours of 10 AM and 4 PM, or anytime the UV index is 3 or higher.
-Cover arms and legs with loose-fitting, tightly woven and lightweight clothing and wear a wide-brim hat to protect head, face and ears.
-Check skin regularly and see your doctor immediately if you notice moles or birthmarks with an unusual appearance, keeping in mind the ABCDE's of early detection: Asymmetry, Border, Colour, Diameter, and Evolution."]

Thinking about the recommended behaviour(s), please indicate the extent to which you agree or disagree with each of the following statements.

17. I am able to do what the ad suggests in order to prevent developing skin cancer
18. Doing what the ad suggests is easy to do in order to prevent skin cancer
19. Doing what the ad suggests in order to prevent skin cancer is convenient

20. Doing what the ad suggests works in preventing skin cancer
21. Doing what the ad suggests is effective in preventing skin cancer
22. If I do what the ad suggests, I am less likely to develop skin cancer

Thinking about actions you may take in the future, please indicate the extent to which you agree or disagree with each of the following statements.

23. I intend to do what the ad recommends in order to keep my skin healthy
24. I intend to do what the ad recommends in order to prevent skin cancer

I think the recommendation(s) described in the ad is(are) _____ :

25.	Unpleasant	-	-	-	-	-	Pleasant
26.	Unhappy	-	-	-	-	-	Happy
27.	Bad	-	-	-	-	-	Good

The recommended behaviour(s) mentioned in the ad is (are) _____ to perform.

28.	Not complex	-	-	-	-	-	Complex
29.	Not complicated	-	-	-	-	-	Complicated
30.	Not simple	-	-	-	-	-	Simple
31.	Not effortful	-	-	-	-	-	Effortful

The ad's message is _____.

		Strongly Disagree (1)	(2)	(3)	(4)	(5)	(6)	Strongly Agree (7)
32.	Overblown							
33.	Exaggerated							
34.	Overstated							
35.	Manipulative							
36.	Misleading							
37.	Distorted							

Please indicate the extent to which you agree or disagree with the following statements.

Strongly Disagree (1)	(2)	(3)	(4)	(5)	(6)	Strongly Agree (7)

38. I will try to ignore this ad
39. I would shut out this message
40. I would try not to think about this message

This ad makes me feel…

41.	Unafraid	-	-	-	-	-	Afraid
42.	Relaxed	-	-	-	-	-	Tense
43.	Calm	-	-	-	-	-	Agitated
44.	Restful	-	-	-	-	-	Excited

I find the ad to be…

45.	Not funny	-	-	-	-	-	Funny
46.	Not amusing	-	-	-	-	-	Amusing
47.	Not entertaining	-	-	-	-	-	Entertaining
48.	Not humorous	-	-	-	-	-	Humorous

The ad's message is _____.

		Not at all (1)	(2)	(3)	(4)	(5)	(6)	Extremely (7)
49.	Boring							
50.	Believable							
51.	Interesting							
52.	Accurate							
53.	Objective							

Thinking about skin cancer, please answer the following questions:

Not at all (1)	(2)	(3)	(4)	(5)	(6)	Very much (7)

54. How critical is this issue?
55. How personally relevant is this issue to you?
56. How involving is this issue?

57. **In your own words, please describe the recommended behaviour mentioned in the ad you were shown earlier. That is, what was the ad suggesting you could do in order to prevent skin cancer?**

DEMOGRAPHICS

Now you will be asked some general questions about yourself. Note that this information is for classification purposes only, and will not be linked to your identity.

58. **Which province/territory to you currently live in?**
- -Quebec
- -Ontario
- -Newfoundland & Labrador
- -New Brunswick
- -Prince Edward Island
- -Manitoba
- -Saskatchewan
- -British Columbia
- -Northwest Territories
- -Nunavut
- -Nova Scotia
- -Yukon

-Alberta

59. **Please indicate your gender**:
-Male
-Female

60. **Please indicate the highest level of education you have completed.**
-Some high school
-High school graduate/ GED
-Some CEGEP (Quebec only)
-CEGEP degree (Quebec)
-Some university
-University graduate (Bachelor's degree)
-Some post graduate (Master's, PhD, etc.)
-Postgraduate degree (Master's, PhD, etc.)
-Trade/technical/vocational training
-Prefer not to answer

61. **Please indicate your marital status.**
-Single
-Married
-Widowed
-Separated/Divorced
-Prefer not to answer

62. **Do you have any children (including biological, step-children, adopted children)?**
-Yes
-No
-Prefer not to answer

63. **Please indicate your gross (i.e. before taxes) annual household income.**
-Less than $10,000
-More than $10,000, but less than $20,000
-More than $20,000, but less than $40,000
-More than $40,000, but less than $60,000
-More than $60,000, but less than $80,000
-More than $80,000, but less than $100,000
-More than $100,000
-Prefer not to answer

64. **Please indicate your gross (i.e. before taxes) annual personal income.**
-Less than $10,000
-More than $10,000, but less than $20,000
-More than $20,000, but less than $40,000
-More than $40,000, but less than $60,000
-More than $60,000, but less than $80,000

-More than $80,000, but less than $100,000
-More than $100,000
-Prefer not to answer

65. **Would you describe yourself as:**
-First Nations/Aboriginal
-Asian
-Black/African American
-Hispanic/Latino(a)
-White/Caucasian
-Pacific Islander
-Bi-/Multi-racial
-Other (Please specify): _____
-Prefer not to answer

65. **Now thinking about your lifestyle (including hobbies, traveling, sports, employment, etc.), on <u>average</u>, <u>throughout the year</u> how many <u>hours per day</u> do you spend outside where you may be exposed to the sun?**

Keeping in mind hours spent outside vary depending on the season, please be mindful and take into consideration not just current activities, but activities during warmer seasons as well.

-Less than 1 hour per day
-Between 1 and 3 hours per day
-Between 5 and 5 hours per day
-More than 5 hours per day

66. **We really appreciate your participation in this study! Before we let you go, please let us know of any comments or feedback you have regarding the survey you've just completed.**

Please contact the principal researcher, Irina Susan-Resiga, at <i_susan@jmsb.concordia.ca> if you have any questions, concerns, or complaints about the research, would like to know more about this study, would like to withdraw from the study, or are interested in obtaining a copy of the research results.

We understand the topic of skin cancer can be an unpleasant and sensitive subject matter for many, and encourage you to please seek out more information at the website listed below. We also encourage you to reach out to your family doctor or dermatologist if you have any specific questions or concerns pertaining to your personal health.

Canadian Skin Cancer Foundation homepage:
www.canadianskincancerfoundation.com

Appendix G

Ethics Approval Certificate

CERTIFICATION OF ETHICAL ACCEPTABILITY FOR RESEARCH INVOLVING HUMAN SUBJECTS

Name of Applicant: Irina Susan-Resiga

Department: John Molson School of Business \ Marketing

Agency: N/A

Title of Project: Using Humour to Make Fear-Based Messages More Persuasive

Certification Number: 30004184

Valid From: February 12, 2015 to: February 11, 2016

The members of the University Human Research Ethics Committee have examined the application for a grant to support the above-named project, and consider the experimental procedures, as outlined by the applicant, to be acceptable on ethical grounds for research involving human subjects.

Dr. James Pfaus, Chair, University Human Research Ethics Committee