Studies have often observed the effects of threat persuasion strategies on attitudinal or behavioral changes in advertising. But seldom studied is the potential power of humor in increasing the persuasiveness of the threat persuasion strategies. Using humor to communicate the threatening issue may attenuate perceived threat and fear and increase the acceptance of the message. But furthermore, this research proposes that the success of using humor in threat persuasion will depend on the individual’s level of issue involvement, a trait and enduring involvement concerning the issue that is inherent in the individual. To test this proposition of involvement as a key factor, three experimental studies were conducted. First in Study 1, the responses to a non-humorous threat persuasion message and a humorous threat persuasion message were compared to understand how the underlying mechanisms that influence persuasion differ between the two message types. The stimuli used were Public Service Advertisements (PSAs) dealing with environmental issues. Next in Study 2, the proposition of a humor and involvement interaction in threat persuasion messages was tested and validated in an experiment with the same stimuli as in Study 1. Furthermore, because past threat persuasion literature considers the intensity levels of threat information as important in determining persuasion
effectiveness, a replication and extension of Study 2 was conducted in Study 3 with threat intensity levels varied. To increase the applicability of the findings, brand advertising for sunscreen was used. While the two previous studies focused on the buffering effects of humor, Study 3 discussed the varying roles of humor that were determined by the threat intensity and individual involvement levels.

The results provided evidence for the following propositions: 1) in Study 1, the valence of the responses was found to be more negative for the non-humor than for the humor message, 2) in Study 2, lower involvement individuals responded more positively to the humorous threat persuasion than to the non-humorous threat persuasion messages, 3) in Study 3, it was generally found that the message persuasiveness of the various threat intensity and humor combinations depended on the individual’s involvement with the issue. Theoretical as well as practical implications for future threat persuasion campaign planning are discussed.

INDEX WORDS: Threat Persuasion, Humor Persuasion, Issue Involvement, Past Threat Experiences, Public Service Advertisement (PSA), Brand Advertising
HUMOROUS REAPPRAISAL OF THREAT INFORMATION IN ADVERTISING: THE EFFECTS OF HUMOR AND INVOLVEMENT

by

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CHAPTER 1
INTRODUCTION

Threat persuasion, otherwise known as fear appeals in advertising, deals with critical issues that may have severe consequences for the consumer or the public (e.g., health issues, environmental issues, identity theft) (Freimuth et al. 1990). In the message, the threatening information is posed as the problem (e.g., sunburn increases risks of skin cancer) and attitudinal or behavioral suggestions are given as solutions to the problem (e.g., use sunscreen everyday). A diverse range of research can be found on threat persuasion: from research on fear appeal processing models (Witte 1992), measuring the emotional and cognitive responses of threat messages (Dillard et al. 1996), to testing the relative effectiveness of different threat types (Smith and Tutts 2003). However, this extensive body of literature has yielded inconsistent results as to the effectiveness of threat persuasion, which led to question whether these strategies are highly effective (Leventhal 1970; Lewis et al. 2007). The greatest challenge in threat persuasion is to increase perceived threat through the use of threatening information, which in theory, should motivate behavioral and attitudinal change in a positive way (i.e., adaptive behavior). However, the negativity and distress created by the threat may trigger motivation to protect oneself from the negativity, which could prompt individuals to react defensively to the message or to avoid it altogether (i.e., maladaptive behavior) (Witte 1992).

One way that might appease the intensity of the threat, thus increase acceptance of the problem and solution in the message without sacrificing the central message arguments, is to use humor in communicating the threat information. Humor is generally known as a buffer to
negativity (Piddington 1963), thus it may decrease the intensity of the perceived threat and the fear generated from the threat information, decreasing defensive avoidance and counterargument, which in turn, would increase acceptance of critical information given in the message. But just as the humor literature attests, humor can take on different roles (e.g., distraction from central arguments, attention grabber, and buffer to negativity) depending on the situation. And one of the factors that this study identifies that may determine what role humor plays in threat persuasion is an individual’s level of involvement with the issue, which has implications as to the type of message processing the person engages in. According to dual processing theories such as the Heuristic Systematic Model (HSM) (Eagly and Chaiken 1993), individuals highly involved with an issue engage in systematic processing of relevant information, which triggers the negativity bias and prompts them to give greater weight to highly negative information. Individuals who are low in issue involvement engage in heuristic processing, which prompts them to favor advertisements with positive surface cues. The negativity bias that emerges for systematic processing and the hedonic principle for heuristic processing are further discussed in the following chapters. Because the type of processing one engages in depends on their involvement, one would expect that audience responses to different combinations of humor and threat will differ. This idea of issue involvement as a moderator is explored in two of the three experimental studies that will be presented in this research.

As is organized in the overview of the research procedure in Table 1, in Study 1, a preliminary testing of the emotional and cognitive response differences between a non-humorous, straightforward threat message and a humorous threat message in the format of a public service advertisement dealing with an environmental issue was conducted. Environmental issues are a hot topic among the public and the media, including the college student population that has been
reported as having great concerns for the environment and sustainable growth (Robinson and Stewart 2010). Study 1 results documented that the presence of humor changes the dynamics of threat persuasion messages, which have mostly been discussed and tested in the past in the form of a non-humorous straightforward threat message. Specifically, the valence of emotions and cognitions was proposed to be more negative for the non-humor message and more positive for the humor message. This served as a premise for Studies 2 and 3, in that the involvement hypotheses were grounded on the proposition that the non-humor and humor threat messages would generate responses relatively discrepant in valence, negative and positive, depending on issue involvement. In Study 2, the individual’s issue involvement was added to Study 1’s experimental design, with the same stimuli, to test the involvement hypotheses. Across both process and outcome measures, it was predicted and found that, generally, individuals with lower issue involvement were more positive towards the humor condition than the non-humor condition, whereas the opposite was true for individuals with higher issue involvement. In Study 3, a new message type (i.e., brand advertising for sunscreen) and topic (i.e., risks of sunburn) were chosen to increase the areas of application of the involvement and humor threat persuasion interaction found in Study 2. Sunburn was chosen because it is a germane topic to a wide population, including college students who served as the study’s sample; in any given year, approximately one third of the U.S. adults and two thirds of children get sunburns, making sunburn a relevant topic for everyone (Maypole, 2010). As level of threat intensity has been recognized as a significant factor that determines threat persuasion effectiveness, Study 3 varied three different levels of threat intensity (i.e., low, medium, high) to increase the explanatory power of the involvement and humor interaction. In addition, as the problem of sunburn is an experiential issue, for which past experiences with the problem might significantly determine the
level of involvement one would have with the issue, level of past threat experiences were used as an indicator of the issue involvement variable. Thus, Study 3 observed differential responses of individuals varying in past threat to the combined influence of threat intensity and humor. In predicting the direction of message persuasion, the role of humor as a distraction, as an elaboration facilitator, or as a buffer to negativity is discussed under different situations of varying individual involvement and threat intensity.

A guide to the content of the subsequent chapters is as follows: 1) Chapter 2, the general literature section, looks at the threat persuasion literature to understand what it is and how it works by integrating different threat persuasion theories that have been discussed in the past literature. This integration of theories is presented in an Extended Model of Threat Persuasion, which discusses the elements and processes of threat persuasion. Also to have an understanding of the humor persuasion process, the fundamental theories that explain what humor is and how it works (i.e., theories of arousal-safety, incongruity-resolution, and humorous disparagement) is discussed followed by what humor can bring to advertising. The idea of issue involvement and how that will affect humor and threat message processing is discussed under the guidance of the Heuristic Systematic Model (HSM) (Eagly and Chaiken 1993). 2) Chapters 3 to 5, report respectively, the three studies mentioned previously, which will include theories and past findings that are needed to construct the hypotheses for each study. Methodology, results, and discussions pertaining to each study are also included in these chapters. 3) Finally, Chapter 6 provides an overall general discussion of the three studies as well as an acknowledgement of limitations and suggestions for future research. Theoretical as well as the practical implications of the studies are also presented in this last chapter.
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CHAPTER 2
GENERAL LITERATURE REVIEW

Threat Persuasion and Its Effects

Threat persuasion motivates people to change their behavior or attitude by communicating threatening information (Rogers 1983). The threatening consequences of a problem or issue are presented (e.g., smoking will increase your chances of getting lung cancer) and then recommendations are presented to reduce the risks of the threatening consequences occurring in the form of suggested attitudinal or behavior reform (e.g., quit smoking). In fact, to be effective, there are three important elements that a threat persuasion message should deliver: 1) the threat information to communicate the problem’s existence, 2) a sense of efficacy which instills a sense of self-confidence and control, and 3) the suggestion of an attitudinal or behavioral change, serving as the solution to reduce the risks of the problem presented (Pechmann 2001). In analyzing how these elements may be processed, the current research proposes an Extended Model of Threat Persuasion based on an integration of existing threat persuasion theories and models (Figure 1). Two levels of processing exist in this model: 1) the threat appraisal process (primary), during which responses of fear and perceived threat arise, serving as the motivators to seek out the solution to the problem; and 2) the coping appraisal process (secondary), during which in trying to cope with the previously perceived threat, one’s own ability to conform to the recommendation (i.e., self-efficacy) and the effectiveness of the recommendation in reducing the harmful threat (i.e., response efficacy) are assessed (Witte 1992). The appraisal processes are sequentially ordered; a certain level of threat perception needs
to be present for the motivation to seek out the solution to emerge (Lazarus 1968; Tanner, Hunt, and Eppright 1994).

Researchers have emphasized the importance of efficacy (both self and response efficacy) in determining the success or failure of the threat persuasion (e.g., Witte et al. 1996). When the perceived efficacy is high, people will be motivated to control the external danger and adopt the recommendation (danger control process); but when efficacy is low, people will be motivated to control the internal fear instead by defensively avoiding or counter-arguing the message (fear control process) (Witte et al. 1996). But even with efficacy information adequately given in messages, there have been accounts in the past that observed threat persuasion to result in fear control processes and counter-productive results. The explanation for this discrepancy seems to lie in the sequential ordering of the two appraisal processes; threat perception is much like a gatekeeper that motivates further processing of efficacy and solution information in the message. Although it has been said that a certain level of threat perception is necessary to instill the importance and graveness of the issue in people’s minds, which would further motivate them to consider the efficacy and solution information, what if the threat itself is too intense to handle, evoking negative thoughts and emotions of distress, unpleasantness, and anxiety? Literature suggests that in such instances, fear control process will prevail. That is, people would rather ignore or counter-argue the threat to protect themselves from being in the unpleasantly negative state than to further think about the harmful consequences, despite the efficacy associations (Janis and Feshbach 1953; Witte 1992). If the perceived threat and fear level is adequate for the individual, the ideal scenario will play out, in which the danger control process will take over and further processing of efficacy and solution will be governed by systematic processing (Witte 1992). The fear and danger control processes should not be seen as mutually exclusive routes,
but as processes that may simultaneously occur to a stronger or lesser degree (depicted by the
two-way vertical arrow between fear and danger control in Figure 1). Evidence for this
proposition is given in several studies which found simultaneous occurrence of both processes
from one message condition (Roskos-Ewoldsen, Yu, and Rhodes 2004; Witte and Allen 2000).
Naturally, greater persuasion will result when danger control processes are stronger and lower
levels of persuasion will result when fear control processes prevail.

With this model, it can be understood why even with strong efficacy information present,
high threat conditions may evoke maladaptive responses: 1) if defense mechanisms are prompted
during threat appraisal, individuals may avoid further elaboration on other information (i.e.,
efficacy or solution) and 2) even if one crosses the threat acceptance threshold and continues to
elaborate on efficacy information, the high intensity threat may, nevertheless, trigger some level
of the fear control process, decreasing the level of overall message persuasion. The higher the
threat intensity and perceived threat, the greater the chances are that the fear control process will
occur at a stronger level. Thus, the challenge of threat persuasion messages is to induce the
adequate level of fear and perceived threat or incorporate some kind of mechanism that can
facilitate the threat persuasion process so that people will be further motivated to process the
efficacy and solution information instead of avoiding or counter-arguing the perceived threat.
Humor Persuasion and Its Effects

*What is Humor?*

Humor has been studied for centuries (dating back to Plato and Aristotle), but is such a multifarious and multidimensional phenomenon that to this day, no single definitive explanation exists as to what is humor, how it’s created, and what its effects are. Out of the enigmatic stages that are proposed to constitute the humor process, greater consensus exists as to the outcome of humor: the overt and covert outcome effects of humor. As effects that occur overtly, laughter and smiling are physiological changes that are often observed in a person who experiences humor. Laughter would be a sharper physiological reflex compared to the quaint and relaxed form of smiling. The two may differentially surface depending on the intensity of the perceived humor by the humor recipient (Keith-Spiegel 1972). As for the underlying covert effects that occur, release of pent-up energy, pleasurable sensation, joy, and happiness have been recognized.
(Martin 2007). Although the above effects mentioned have been observed as responses that occur in most humor instances, the nuance in which those responses occur may differ across the different types of humor. The different processes in which humor may be created, and the distinctive effects each may deliver, are otherwise known as humor process theories, which are essential for understanding how humor is created.

_Humor Theories: How Humor is Created_

There have been numerous assumptions about what humor is and how it’s created. Any set of theories presented would be only one set of possibilities because the theorizing and operationlizing of humor is far from complete. But a set often listed (which has been constructed by observing the recurring and most basic themes existing in a larger set of humor theories) identifies three processes in which humor can be generated: 1) arousal-safety, 2) incongruity-resolution, and 3) humorous disparagement (e.g., Gulas and Weinberger 2006; Speck 1990). Common to all three processes is the most fundamental and basic structure of humor: a presentation of a play manipulation with elements that evoke arousal/tension, followed by some mechanism that allows one to reduce the tension and enjoy the arousal (Speck 1990). Here, “a play manipulation” is referred to as giving a play cue, to let the individual know that the message they are about to receive should not be interpreted seriously and should be processed outside of a realistic mode (McGhee 1979). Play cues can come from different elements; the source or teller of the humor can provide them (McGhee 1979) (e.g., “Let me tell you a funny joke”), the social context in which the humor is delivered may inherently carry the cues (Rothbart 1976) (e.g., watching a stand-up comedy on TV), or by others’ responses to the humor event (Chapman and
Foot 1976). This is a precondition for all humor stimuli, which allows the receivers to interpret the arousal, incongruity, and disparagement in a non-serious and non-critical way.

Each of the three processes explains a special case of humor with distinctive features that are layered on top of the fundamental structure explained above. First, the arousal-safety theory explains the process of the humor stimulus heightening one’s arousal, but at the same time or subsequently, the same stimulus being judged as safe or inconsequential (Rothbart 1973). According to Speck (1990), the process of arousal-safety involves “empathetic bonding with someone who narrowly avoids disaster.” Arousal is generated by presentation of a discomforting element, which generates affective and cognitive uncertainty. But a play signal is given and the situation is subsequently judged safe, which is a process of tension relief. The heightened arousal may accompany feelings of anxiety, surprise, fear, but recognizing it as playful and safe, a tension from the release, feelings of joy, amusement, and humorousness would be generated. An important factor in this process is that the humor receiver has to ultimately judge the initial arousal as safe and inconsequential. Even with playful cues, if the receiver doesn’t succumb to the safety judgment process, the arousal-safety process would be unsuccessful and the humor stimulation will not be perceived as funny. As an example of this humor process, we cringe at the sight of falling anvils on cartoon characters, but as soon as we come to terms that it’s not part of reality, we breathe a sigh of relief and enjoy the luxury of considering it as entertainment. Many of the videos shown on America’s Funniest Home Videos generate laughter in this form; people falling, crashing, and being hit by objects initially cause some level of surprise and anxiety, but as soon as the viewers come to terms that it’s part of a funny program and see that no life-threatening injuries have occurred, they let out a laughter of relief. As mentioned previously, the failure to view these arousals and violent situations as inconsequential and ‘just
for laughs’ would result in the failure of the humor process, thus resulting in low perceived humor and negative responses such as finding it cruel or inappropriate.

Next is the incongruity-resolution process. The first step of the process, incongruity, occurs when elements in the humor cannot be successfully assimilated with each other or they produce some level of discrepancy with what we have known and believed in the past (i.e., our pre-existing schema). Some theorists break down this incongruity process into yet another three parts: the sudden interruption (what is it?), the perceptual contrast of the incongruity (this is unexpected!), and playful confusion (what does it mean?) (Speck 1990). As with the fundamental process of humor, this arousal of incongruity isn’t sufficient to generate laughter. The playful confusion, the realization of an existence of a puzzle may be stimulating at first, but without an answer or a solution to the problem, the stimulation may turn into anxiety, discomfort, and frustration. This is precisely the reason why many theorists assert that there needs to be a successful resolution of the incongruity for the humor to be successful. The resolution occurs when the unexpected and surprising incongruity is successfully reassessed, reintegrated, or subtyped into our existing schema. The elements put forth in an incongruity may at first seem incompatible with our existing schema, but there exists some familiarity or overlap with what we are accustomed to, which is how we figure out the alternative meaning behind the incongruity. When a stand-up comedian starts to tell a joke including situations and behaviors of people that are not in the norm, we form a question mark in our minds because the overt meaning cannot be understood. But as soon as the comedian delivers the punch line of the joke, we are able to understand the reason for the incongruity and able to switch from the first nonsensical meaning to the hidden and alternative meaning of the second (Beard 2008). When the solution, the answer to our playful confusion, comes to us, we let out an ‘Ah ha!’ response of realization, which
generates pleasurable sensation and laughter. The challenge to our schema and the twist from the norm makes this humor process a highly cognitive one. But that is not to say that certain emotional responses occur; the feelings of surprise, excitation, and arousal would arise with the presentation of the incongruity and feeling of joy, content, and pleasure would arise with the findings of the resolution. An example of this process can be seen in an Ad Council PSA titled Father Involvement. We see a grown man in the beginning of the ad dancing and chanting by himself in the courtyard, “All those boys are much too much, those boys are much too much,” which is incongruous from what we consider as normal behavior for a grown man. As the camera zooms out, we see that he is actually with his daughter helping her practice her cheerleading. The initial arousal comes from the sight of a grown man doing a cheer and as we see the alternative explanation for the incongruity, the puzzlement turns into realization and pleasurable sensation, evoking perceived humor and laughter.

The third theory is humorous disparagement. Disparagement theories are also known as superiority theories. It is based on the proposition that as human beings we enjoy feeling superior to others. The process is fundamentally social in two ways: 1) the social context and relationships in which it is told is important and 2) it is often used as a tool for criticism, censure, and control among social relationships (Speck 1990). The underlying process is similar to all other humor processes in that there is arousal from a stimulus and subsequently some relief or reduction of the arousal. But what makes disparagement humor unique is the fact that the arousal comes from disparaging, attacking, or ridiculing someone or something else (Beard 2008). The nature of the arousal isn’t playful confusion, but more so of anxiety, discomfort, and maybe even guilt from knowing the fact that someone has fallen victim to the joke. How this arousal is resolved and would be considered as humorous is through the misattribution process (Zillman
and Cantor 1976). This is a justification process in which the receiver attributes his/her pleasure from the disparagement humor to anything other than one’s own tendency or personality. The disparagement may be justified with one or more of the following misattributions: “because everyone else is doing so,” “the ridicule was justly deserved,” “I am not the joke-teller, thus, I have no control over the victim being ridiculed,” “it is harmless fun,” or “I am only enjoying the wittiness of the humor and not the ridicule itself” (Speck 1990). Only with the misattribution, the joke-hearer would allow him/herself to enjoy the humor. Triadic relationships often form in disparagement humor where the joke-teller attacks a victim which would be interpreted by the joke-hearer as humorous. Speck (1990) identifies several types of disparagement humor; satiric humor as when the joke-teller intends to teach a lesson, put-down humor as when the joke-teller’s intention is to embarrass the victim, sarcasm as put-down humor but without caring whether or not the joke is perceived as humorous to others, and self-deprecating humor where the joke-teller makes fun of him/herself. Due to the attacks and ridicule, this form of humor has the highest risk in being received as offensive and inappropriate. Especially when the object of the ridicule is someone or something that is in a positive relationship with the joke-hearer. It would be safe to assert that the success of the disparagement humor depends on the relationship between the joke-hearer and the victim; if the relationship is positive, it is likely (but not always) that the joke-hearer would see the ridicule as offensive; if the relationship is negative or antagonistic, it is more likely that the joke-hearer would consider the put-down as deserving and funny.

Such humor processes can be utilized in messages and advertising to achieve a variety of different objectives. The following section discusses possible effects when humor is employed in advertising.
Humor Effects in Advertising

The three basic humor processes from above are also used to generate humor in advertising. The perceived humor would be an immediate outcome effect of the use of such humor in advertising, but because advertising is a form of communication with intent to persuade, the study of the effects of humor in advertising needs to go beyond the primary effects of perceived humor.

Due to the distinctive process of stimulation and resolution in humor, certain effects occur when consumers view humor advertisements. First, due to the incongruity/arousal/disparagement process, which evokes responses of surprise and stimulation to some degree, researchers agree that humor attracts initial attention to the advertisement (Sternthal and Craig 1973; Weinberger and Gulas 1992). The reason for this attraction to the unexpected comes from a sociological perspective; our efficiency-driven industrial societies demand that we function as productive members of the society, thus to engage in “a routinized world of everyday life.” This conditions us to live in a state of low attentiveness (Garfinke 1967), which is sustained until something interesting comes along, motivating people to engage their attention (Davis 1971). The unexpected and surprising provide this stimulation. Also, due to the increase in initial attention and greater elaboration in trying to understand the surprising element, memory for these ads could be considerably high. Studies have found that atypicality, which lies in the heart of humor stimulation, increases brand recall (Lange and Dahlén 2003) and product-oriented thoughts (Sujan, Bettman, and Sujan 1986). Even without the elements of relief/resolution/misattribution to appease the initial arousal (which are necessary in producing successful humor effects), incongruity and atypicality may result in higher recalls than congruity and typicality (Moore and Hutchinson 1985). This is explained by the Zeigarnik Effect.
(Baumeister and Bushman 2008), which contends that people form greater memory for unresolved tasks that create tension and arousal. This theory explains that it is human nature to desire to finish what has been started. When the task is incomplete, constant thoughts of the components are retained in our memory longer, thus, resulting in higher recall and recognition. Granted, if one cannot find the resolution, the memory might not be of a positive valence, but when considering memory effects alone, the presence of arousing and surprising elements would increase memorability of the advertisement.

Stimulation may be sufficient to attract attention and increase memory, but successful resolution and an appeasing of the stimulation may likely be needed for humor to be generated and thus positive attitudes to form. The return to safety and equilibrium during the safety stage of the arousal-safety process, the satisfaction and sense of closure from the resolution of the incongruity-resolution process, and the feelings of superiority supported by misattribution from the disparagement process are necessary processes for the humor to be successfully perceived as funny, which is known to transfer to advertising evaluations, source liking, and even purchase intentions (e.g., Peracchio and Meyers-Levy 1994; Phillips and McQuarrie 2002; Reece, Vanden Bergh, and Hairong Li 1994; Sternthal and Craig 1973; Weinberger and Gulas 1992). Greater memory and recall may benefit a brand to some degree, but achieving positive attitude is important for creating purchase intention and brand loyalty (MacKenzie, Lutz, and Belch 1986).

**The Effects of Humor in Threat Persuasion**

As discussed in previous sections, threat persuasion messages face a dilemma of having to create perceived threat and fear to motivate individuals to change, but not overly stimulate in a
negative fashion as to evoke distress and unpleasantness, prompting defensive reactions to the message (i.e., avoidance and counter-argument) (Witte 1992).

Without having to sacrifice the specifics of the threat information, one way to appease the perceived threat of the message would be to employ humor in communicating the threat (Conway and Dubé 2002). For those who do not wish to elaborate on the unpleasant and negative threat information, adding humorous elements to communicate the same threat may make it less intense in negativity and more approachable. This practice can be observed in actual threat persuasion advertisements; to warn about global warming, Greenpeace showed a snow globe with a liquefied snowman with the copy, “winter, you’ll miss it when it’s gone; to depict deforestation, WWF showed what used to be a forest with only one tree left standing with lumber workers resting under the shade of the tree; to deliver the threatening consequences of identity theft, Citi Identity Theft Solutions showed victims engaging in outlandish behavior unbecoming of them (an exaggerated way of showing what perpetrators could be doing with your identity). Such examples delivered threatening information, but with the use of humorous elements.

The proposition of humor appeasing the intensity of negativity in threatening situations has long been tested and supported in various disciplines. In studying the function of humor in reducing threat-induced anxiety, Yovetich, Dale, and Hudak (1990) found that subjects who were given humorous stimuli were less anxious and less stressed about an upcoming laboratory-induced threat. In testing the enhancing effects of sense of humor, Kuiper, McKenzie, and Belanger (1995) found that humorous individuals reported greater positive affect in stressful situations than less humorous individuals. Furthermore, people have been found to use humor to
cope with life stress and adversity (Lefcourt 2000), to reassess situations that threaten their well-being (Frankl 1960), and to find hope in the most devastating circumstances (Henman 2001).

In the case of threat persuasion messages, the appeasing function of humor can be explained in both the cognitive and emotional sense. The mere presence of a humorous element, however relevant to the message, presented on top of the threatening information would result in divided attention and processing between the humor and threat elements. Firstly, if limited elaboration is given to the message, there would be relatively less processing of the threatening information and secondly, any processing of the threatening information would be somewhat neutralized in negativity by the processing of humor. Consequently, the same information would be communicated, but the outcome would be a relatively less dire and less threatening perspective of the message. This cognitive reframing and buffering function has been recognized as a fundamental characteristic of humor (e.g., Abel 1998; Koestler 1990; Kuiper, Martin, and Olinger 1993) humor acts as a buffer to the effects of negative situations, allowing individuals to appraise the environment in a relatively positive perspective (Abel 1998). Emotionally, humor elicits positive feelings of what Martin (2007) termed as mirth: the feelings of pleasure, amusement, and cheerfulness. The presence of these feelings would in some degree neutralize the negative feelings caused by the threat, such as tension, stress, and fear. Overall, compared with the straightforward threat persuasion, humorous threat persuasion would be more positive in valence, both in terms of cognitive and emotional outcome.

Although humor may have such appeasing effects on threat information processing, when it comes to the overall message effectiveness, such appeasing of the threat may not be effective for everyone. The current paper proposes issue involvement to be an important factor that would
influence the effectiveness of humor in threat persuasion. The theoretical background for this proposition is explained next.

**The Importance of Issue Involvement in Humorous Threat Persuasion**

Issue involvement pertains to how critical, personally relevant, and personally involving the individual finds the issue (Leippe and Elkin 1987). The current research deals with problematic and critical issues that the public and consumers are familiar with (i.e., deforestation, sunburn) and thus would likely have preconceived notions and attitudes toward. Therefore, to increase the realistic value and the external validity of the research, the experiments focused on inherent and enduring involvement, which would more likely capture their natural state of involvement with the issue. Situational involvement, which is often manipulated in experiments, would be temporary and would not reflect the true involvement level an individual would have with problematic and engaging issues. An individual’s involvement with the issue should govern the type of processing one engages in, which in turn would be expected to influence the responses to humor in threat messages.

According to dual processing theories such as the Heuristic Systematic Model (HSM) (Eagly and Chaiken 1993), when faced with an issue that is considered as highly involving and relevant, individuals would likely engage in systematic processing. Systematic processing is high-motivated processing, where careful assessment and detailed scrutiny of message claims take place and judgments are based on the perceived diagnosticity of message data (Meyers-Levy and Malaviya 1999). During the integration of carefully assessed information, negative information is known to have greater weight and influence (Lau 1985; Taylor 1991). This is because negative information is more diagnostic than neutral or positive information; negative
information is known to be more potent, is more salient (Rozin and Royzman 2001), and is also more scarce and non-normative in our environment than positive information (Kanouse 1984), which makes it more differentiated, elaborate, and highly diagnostic than positive information. Due to this reason, it has even been suggested that processing of negative information requires more complex and elaborated cognitive efforts (e.g., Czapinski 1985). And because diagnosticity of data is important in attitude and judgment formation during systematic processing, negative information will be duly noted for its diagnosticity (Fiske 1980). This negativity bias does not occur when the individual is not very invested in the issue or the assessment of the issue relevant information (Wright 1981). Evidence for this proposition has been found in studies; Block and Keller (1995) found that individuals who received high risk information for the personally relevant issue of prevention of skin cancer showed greater positive attitude and intention to conform to the suggested behavior for negatively framed messages than positively framed messages; For intention to buy a low-cholesterol meat product, Meyers-Levy and Maheswaran (2004) found that when personal relevance is high (at risk group for coronary heart disease) and high risk information is given (high risk of choosing given brand), the negativity bias effect was observed in that negative framing of the message was judged more favorably than positively framed information. In the context of threat persuasion, the threat information given without the use of humor would be the kind of negative information that would be given weight during higher involvement systematic processing. Threatening consequences of a problematic issue given in an advertisement (e.g., smoking can lead to lung cancer, heart attacks, and even death) is negative in valence, is more scarce compared to neutral or positive information that surrounds us in everyday life, would be of a substantial impact if it were to come true, thus, is more diagnostic and would be given greater weight during integration of information. In the case of
threat information communicated through humor, humor would not only neutralize the negativity of the threat, but give a positive valence to the message. The presence of a humorous element (e.g., a humorous image) laid on top of the threatening message (e.g., threatening information delivered in copy) would lessen the graveness of the situation, rendering the message less negative and therefore, less non-normative and diagnostic. Consequently, for individuals high in issue involvement and thus prone to systematic processing of issue-relevant information, the non-humorous threat message should be more effective in outcome than the humorous threat message.

For those individuals that consider the issue to be less critical and low in personal relevance, they would engage in less motivated and less effortful heuristic processing of relevant information. Motivation to process and scrutinize substantive information and careful integration of message claims during the formation of overall attitude would be low for these individuals. Instead, attitude is formed based on surface cues and simple inferences such as the presence of humor, celebrities, and cartoon characters and whether the object of evaluation is associated with positive or negative cues (Cacioppo and Petty 1984). Also, when persuasion and judgment is based on heuristics such as surface message features, the hedonic principle is applicable in that people show a tendency to take an approach stance on positive information and an avoidance stance on negative information (Higgins 1998). Consistent with this proposition, framing studies have found the individuals who are low in involvement to exhibit more favorable attitudes and greater intention for compliance for the positively framed messages more so than the negatively framed messages (e.g., Maheswaran and Meyers-Levy 1990; Meyers-Levy and Maheswaran 2004; Rothman et al. 1993). Humor constitutes as such a surface message feature and because it is playful and positive in valence, positive evaluation of the message would result in humor’s
presence due to the hedonic principle taking effect. Thus, when issue involvement is low and heuristic processing would dominate, humorous threat messages would be evaluated more positively than non-humorous threat messages. With this background, we now continue with three experimental studies that explore and test the differences between a non-humor threat persuasion message and a humor threat persuasion message and how an individual’s involvement with the threatening issue moderates the relationship between humorous threat persuasion and message effectiveness.
CHAPTER 3

STUDY 1: PRELIMINARY STUDY

The presence of humor in threat persuasion is often observed in real world advertisements. Before conducting experimental studies to test for the persuasion effects, to better understand how the presence of humor may change the dynamics of threat message processing, a preliminary study was conducted to directly compare the emotional and cognitive responses between a non-humorous and a humorous threat persuasion message. This would allow us to see the humor effects in relation to the more widely known non-humor threat persuasion effects.

Some studies have observed emotional responses of different appeals in PSAs (e.g., Dillard and Peck 2000), but having conducted research with real-world ads, these studies could not make a direct comparison between the different appeals. For the preliminary study, messages that represent the non-humorous and humorous conditions were created by varying only the humorous element in the ad, with all other elements held constant. In doing so, the study could assure that the differences in responses came from the presence or absence of humor.

All else being equal, no strong evidence exists that would allow prediction of greater persuasion for one type of appeal over the other. But the emotional and cognitive responses influential in shaping overall persuasion of threat messages can be predicted to differ between the non-humorous and humorous threat messages. Evidence of this proposition is provided by observing the threat and humor message processing literature. Predictions were made on emotional responses that past literature has identified as pertinent to the persuasion of threat or
humor messages. For the cognitive responses, the elements from the Risk Behavior Diagnosis (RBD) Scale (Witte et al. 1996), a scale developed to measure thought responses for risk messages, were measured.

**Emotional Responses**

Emotions are mental feeling states that arise from specific referents or situations and are important elements in an individual’s decision-making process. Functional theorists (e.g., Frijda 1986; Lazarus 1991; Oatley 1992) argue that emotions exist as complex structures, for which distinct and separate identification is needed. Several taxonomies have been formed on emotions; Edell and Burke (1987) identified 169 emotions that could be elicited by advertising and grouped them into three clusters (upbeat, negative, and warm) and Shaver, Schwartz, Kirson, and O’Connor (1987) produced a taxonomy of emotions in 24 clusters (e.g., affection, cheerfulness, entrallment, and irritation). A more parsimonious categorization was developed by Oatley (1992), who identified the most basic emotions of happiness, fear, anger, sadness, and shame. In their study of emotional responses to PSAs, Dillard and Peck (2000), with the exception of anger, recognized Oatley’s emotions as pertinent to threat messages.

When individuals experience emotions, they are motivated to not only identify the source of the cause but also to take actions to cope with the felt emotions (Bagozzi, Gopinath, and Nyer 1999). These different emotions are known to lead to different coping strategies, hence, resulting in different action tendencies. For example, although both negative in valence, fear elicits a motivation to protect oneself whereas anger motivates an individual to attack the source of the anger. Neutral in valence, surprise triggers action tendencies to further engage and seek out information (Lazarus 1991). As situations are seldom so clear as to elicit a single interpretation,
multiple emotions are likely to arise simultaneously in any given situation (Plutchik 1980). These emotions in concert would influence the persuasive process and decision making.

For the observation of emotional responses between non-humorous versus humorous threat persuasion messages, the current research chose discrete emotions that were identified as influential to the persuasive process of the two message types. Surprise, fear, sadness, shame, and happiness were identified by past studies to be positively associated with the perceived effectiveness of risk messages (Dillard and Peck 2000) and surprise, happiness, playfulness were identified as significant generators of humor and subsequent positive ad evaluations (Alden, Mukherjee, and Hoyer 2000). These seven emotional responses could be put into three categories in terms of their valence: neutral (surprise), negative (fear, sadness, shame), and positive (happiness, playfulness). The neutral emotion of surprise may be associated with both message conditions in that it could be elicited from the threatening information in the non-humorous threat message condition, but it could also be elicited from the humorous incongruity in the humorous threat message condition. So as for the emotion of surprise, a significant difference between the conditions cannot be predicted. Based on the previous discussions on threat and humor message processing, it can be proposed that the presence of humor would significantly lower the intensity of the negative emotions of fear, sadness, and shame. This would result in higher ratings for these emotions for the non-humorous condition than the humorous condition. Due to the humorous element, happiness and playfulness can be predicted to be higher for the humorous condition than the non-humorous condition. The following hypotheses are set on the emotional responses that are predicted to differ between the message conditions:
*H1:* Levels of the negative emotions of fear, sadness, and shame will be significantly higher for the non-humorous than the humorous threat message.

*H2:* Levels of the positive emotions of happiness and playfulness will be significantly higher for the humorous than the non-humorous threat message.

**Cognitive Responses**

According to the Extended Parallel Process Model (EPPM), numerous cognitive responses shape the perceived effectiveness of threat persuasion messages. This is further developed in the Risk Behavior Diagnosis (RBD) Scale (Witte et al. 1996), which recognizes the following key constructs in threat persuasion message processing: perceived threat, perceived efficacy, fear control responses, and danger control responses. The definitions of the constructs are given, and how the responses may differ between the non-humorous and humorous conditions are discussed.

*Perceived Threat*

In order to be persuaded on risk-involved issues that have severe consequences, it has been known that people first need to have a certain level of threat perception and problem recognition (Lazarus 1968; Scherer 1984; Eppright, Tanner Jr., and Hunt 1994). Thus, perceived threat is proposed to be an important cognitive construct for risk messages and has been recognized as carrying two related dimensions: perceived severity and perceived susceptibility. When provided with threatening information, the individual would gauge the seriousness of the threat (perceived severity), but at the same time, assess the probability of the consequences
occurring (perceived susceptibility) (Witte et al. 1996). As discussed in the previous sections, humor allows reassessment of threat information in a less severe way. Hence, compared with the humorous threat message condition, perceived threat of the issue can proposed to be higher for the non-humorous condition.

Perceived Efficacy

It is not enough that an individual perceives threat and becomes motivated to take action; the individual needs to have a sense of efficacy towards the solution. Two dimensions of efficacy are identified by threat persuasion message researchers: response efficacy and self-efficacy. An individual needs to have a sense that the solution presented will have a significant effect on reducing the threat (response efficacy) and that he or she has the ability to carry out the solution (self-efficacy) (Witte et al. 1996). There exists some evidence that efficacy may be a stronger predictor of attitudinal or behavioral change than perceived threat (Mongeau 1998; Witte and Allen 2000). Thus, it is recommended that efficacy be instilled in the message by providing how-to information and the degree to which the performance will change the outcome (Pechmann 2001).

As long as the non-humor and humor appeal conditions portray the same efficacy information, there is no reason to predict that one condition will result in higher efficacy than the other. It could be argued that due to the difference of perceived threat, which could potentially have an impact on perceived efficacy (i.e., greater the perceived threat and fear, less optimistic an individual can be of the possible changes), difference in responses between the two message conditions for efficacy can be predicted. But efficacy may be shaped by various emotions and cognitive responses, which differ between the non-humorous and humorous conditions. For non-
humorous threat messages, high perceived threat and negative feelings may likely influence perceived efficacy, whereas, for humorous threat messages, efficacy is likely to be influenced by positive feelings elicited by the humor. Thus, having different influential factors, perceived efficacy would not likely show significant differences between conditions.

**Fear Control Responses**

Counterproductive responses emerge when either the perceived threat is too high or too low and/or the perceived efficacy is too low. In these cases, people are more motivated to quickly remove the unpleasant thoughts rather than seek out the solution to the problem. Hence, they may avoid further engagement with the message (i.e., defensive avoidance: “I don’t want to think about this anymore”), dismiss the credibility of the message (i.e., message derogation: “this is exaggerated information”), or perceive the message as being manipulative (i.e., perceived manipulation: “this message is distorted or exaggerated”). The higher the fear control responses, the lower the likelihood that danger control responses will occur.

If the threat persuasion message evokes an adequate level of fear and perceived threat, the motivation to further engage in the message will be present for the non-humorous threat message condition. As for the humorous threat message condition, although the fear and perceived threat levels may be lower than those for the non-humorous condition, the incongruous and unexpected humorous elements are likely to motivate further elaboration. Thus, there are no strong grounds to predict defensive avoidance to be significantly different between the non-humorous and humorous conditions.

The humor message-processing literature suggests that the link between the increased processing depth and the reduction in counterargument for humor messages may be explained by
the fact that people tend to partly discredit and discount the messages as being light and joke-like (Nabi, Moyer-Guseé, and Byrne 2007). For entertainment-based messages, such as humor messages, message discrediting may be one of the drivers of lower counterargument and subsequent compliance to the message. This is not true for non-entertainment messages: higher discrediting and derogation generally lead to counterargument and lower persuasion (Petty and Cacioppo 1983). All other information being equivalent, the presence of a humorous element, incongruous and exaggerated to elicit a humorous response, would lead to higher message derogation and perceived manipulation, a source of persuasion for entertainment-based messages.

Danger Control Responses

Danger control responses are cognitive responses eliciting motivation to protect oneself from the threat by actively engaging in changes. People think of ways to avert the threat and not their fear, which show in their attitudinal and behavioral intentions to comply to the message’s recommendations.

Danger control responses of attitude toward the behavior and behavioral intention represent the final persuasion outcome that is influenced by all other emotional and cognitive responses (Witte 1992). For the straightforward threat message condition, message persuasiveness may be driven by change-instigating negative emotions and perceived threat, which could affect motivation to conform to the message. For the humorous threat message condition, positive emotions, elaboration on humor, and message discrediting leading to low counterargument may be the drivers of message persuasion. As the two appeals elicit different emotional and cognitive responses, which would both influence overall message effectiveness,
strong predictions of the difference in danger control responses between the two conditions cannot be made.

Based on the above literature, the cognitive responses that are proposed to significantly differ between the two conditions are made:

*H3: Levels of perceived threat will be significantly higher for the non-humorous than the humorous threat message.*

*H4: Levels of message derogation and perceived manipulation will be higher for the humorous than the non-humorous threat message.*

**Method**

**Participants**

One hundred undergraduate students (38.05% male, 61.95% female) were recruited from mass communication courses in a Southeastern university. Subjects were randomly assigned to two conditions: non-humorous and humorous public service advertisements (PSAs). Cell sizes were 49 for the non-humorous condition and 51 for the humorous condition. Subjects were given course credit for participation.

**Procedure**

The study was conducted as a self-administered online experiment. A survey link was provided and a random link generator assigned the participants to one of the two conditions.
Each participant viewed one PSA and gave ratings to the emotional and cognitive responses followed by perceived humor for manipulation checks.

Stimuli

An existing print advertisement that had been professionally developed was modified for conducting the experiment. Two conditions were developed from the original to represent the levels of humor manipulation: humorous and non-humorous threat message conditions. For both conditions, consistent with design recommendations for threat messages (Pechmann 2001), the threat (“Nine square miles of forest disappear every minute”) with the consequences (“Deforestation is a significant cause of climate change”) were presented in the copy first, followed by the behavioral suggestion (“Help conserve trees by conserving paper. Don’t buy disposable paper cups or paper plates”). The behavioral suggestion elicits a certain level of efficacy information; complying with the suggestion of conserving trees would help conserve paper. The specific recommendations to conserve paper were pretested for their perceived efficacy and refraining from buying disposable paper cups and plates was chosen for its efficacy score closest to the median ($Mdn = 4.22$). This was done to control for any extreme effects that the behavioral suggestion itself would present, especially as to perceived efficacy. Humor was manipulated through image; both conditions showed a forest with half of the trees cut down and the sky filled with dark clouds, but the humor condition had a Tarzan-looking person swinging out of the trees, about to fall to the barren grounds while the non-humor condition had no Tarzan. A fictional organization (Green Project Council) was featured in small writing, which pretested low in familiarity and neutral in benefit, quality, and name liking (as was used by Baker 1999). The stimuli used are presented in Appendix A.
Measures

To assess the success of the humor manipulation, a four-item, seven-point semantic differential scale was employed to measure perceived humor (not funny/funny, not amusing/amusing, not entertaining/entertaining, not humorous/humorous) ($\alpha = .98$) (Nabi, Moyer-Guseé, and Byrne 2007).

For both the cognitive and emotional responses, all variables mentioned in the previous section were measured, including the ones that were not predicted to significantly differ between message conditions.

For emotional responses, a diverse range of emotions pertinent to risk messages, and humor messages was measured. Subjects were asked to indicate how the ad they just saw made them feel by rating on a seven-point Likert scale ranging from “not at all” to “very much.” The affects measured were surprise, fear, shame, sadness, happiness, and playfulness.

For cognitive responses, perceived threat was measured with seven-point Likert scales (strongly disagree/strongly agree) for severity (“I believe forest destructions described in the ad are very severe problems”) and vulnerability (“I feel that the forest destructions described in the ad are likely to happen”) (Brouwers and Sorrentino 1993). With also seven-point Likert scales (strongly disagree/strongly agree), measures of self-efficacy (“The ad’s suggestion of not buying paper cups or paper plates will reduce the likelihood of the forest destructions”) and response efficacy (“I feel confident that I will be able to refrain from buying paper cups or paper plates”) represented perceived efficacy measures (Brouwers and Sorrentino 1993). For danger control responses, attitude toward the behavior was measured with a three-item, seven-point semantic differential scale (bad/good, undesirable/desirable, unfavorable/favorable) ($\alpha = .87$) (Witte et al. 1996) by asking the question, “What did you think about not buying disposable paper cups or
Behavioral intention was also a three-item, seven-point semantic differential scale with the questions, “How likely is it that you will refrain from buying disposable paper cups or paper plates in the near future?” “How likely is it that you will refrain from buying disposable paper cups or paper plates every time?” and “How interested are you in learning more about the different ways you can conserve paper?” ($\alpha = .81$) (Passyn and Sujan 2006). For fear control responses, defensive avoidance was measured with a two-item, seven-point semantic differential scale to assess to what extent subjects engaged in cognitive elaborations of the elements in the message. The statement, “When I first read about deforestations in the ad, my first instinct was to…” was given and subjects were asked to rate on two bipolar items representing problem elaboration (not think further about deforestations/think further about deforestations) and solution elaboration (not think about the ways that can prevent deforestations/think about ways that can prevent deforestations) ($\alpha = .85$) (Witte et al., 1996). The lower the rating, the greater the defensive avoidance was of the message. For message derogation, a three-item, seven-point Likert scale (not at all/very much) was used. The items asked the extent to which the participants thought the ad was overblown, exaggerated, and overstated ($\alpha = .93$) (Witte et al. 1996). Lastly, for perceived manipulation, a three-item, seven-point Likert scale ranging from “not at all” to “very much” was used to assess the extent to which the subjects felt that the ad was misleading, manipulative, and distorted ($\alpha = .92$) (Witte et al. 1996).
Results

Manipulation Checks

As intended, the humorous condition was rated higher in perceived humor \((M = 3.62, SD = 1.74)\) than the non-humorous condition \((M = 1.56, SD = .96)\), \(t(98) = 7.39, p < .001\), meaning that the humor manipulation was successful between conditions.

Hypothesis Testing

To test the difference in emotional responses between the non-humorous and humorous conditions, independent samples T-tests were conducted. T-tests should be performed under the assumption of variable normality. All variables analyzed conformed to the normality assumption \((-1.96 < \text{Skewness} < 1.96, -1.96 < \text{Kurtosis} < 1.96)\). The results shown in Table 2 indicate that for the neutral arousal response of surprise, the non-humorous condition \((M = 3.69, SD = 1.39)\) did not significantly differ from the humorous condition \((M = 3.69, SD = 1.50)\), \(t(98) = .03, p = .98\). Hypothesis 1 was supported as the measures of all negative emotional responses were significantly higher for the non-humorous condition than for the humorous condition. Fear responses were significantly higher for the non-humorous condition \((M = 4.27, SD = 1.67)\) than for the humorous condition \((M = 3.39, SD = 1.46)\), \(t(98) = 2.77, p = .05\), and this was also the case for sadness [non-humor: \(M = 5.16, SD = 1.30\); humor: \(M = 4.45, SD = 1.46, t(98) = 2.58, p < .05\)] and shame [non-humor: \(M = 4.41, SD = 1.49\); humor: \(M = 3.80, SD = 1.58, t(98) = 1.97, p = .05\)].

For positive emotional responses, both happiness and playfulness were significantly higher for the humorous than for the non-humorous condition, supporting hypothesis 2: the feeling happiness was significantly higher for the humorous condition \((M = 2.08, SD = 1.21)\)
than for the non-humorous condition \((M = 1.53, \ SD = .96)\), \(t(98) = 2.51, p < .05\), and this was also true for the feeling of playfulness [humor: \(M = 2.63, \ SD = 1.23\); non-humor: \(M = 1.39, \ SD = .79\), \(t(98) = 5.35, p < .001\)].

**TABLE 2**

*Emotional Responses to Non-Humorous and Humorous PSAs*

<table>
<thead>
<tr>
<th>Hypothesis</th>
<th>Emotional Responses</th>
<th>Non-Humor</th>
<th>Humor</th>
<th>(t) (df)</th>
<th>Sig.</th>
<th>Hypothesis Supported</th>
</tr>
</thead>
<tbody>
<tr>
<td>Neutral</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Surprise</td>
<td>3.69 (1.39)</td>
<td>3.69 (1.50)</td>
<td>.03 (98)</td>
<td>(p = .979)</td>
<td></td>
</tr>
<tr>
<td>Negative</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>H1</td>
<td>Fear</td>
<td>4.27 (1.67)</td>
<td>3.39 (1.46)</td>
<td>2.77 (98)</td>
<td>(p &lt; .05)</td>
<td>Supported</td>
</tr>
<tr>
<td></td>
<td>Sadness</td>
<td>5.16 (1.30)</td>
<td>4.45 (1.46)</td>
<td>2.58 (98)</td>
<td>(p &lt; .05)</td>
<td>Supported</td>
</tr>
<tr>
<td></td>
<td>Shame</td>
<td>4.41 (1.49)</td>
<td>3.80 (1.58)</td>
<td>1.97 (98)</td>
<td>(p = .05)</td>
<td>Supported</td>
</tr>
<tr>
<td>Positive</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>H2</td>
<td>Happiness</td>
<td>1.53 (.96)</td>
<td>2.08 (1.21)</td>
<td>2.51 (98)</td>
<td>(p &lt; .05)</td>
<td>Supported</td>
</tr>
<tr>
<td></td>
<td>Playfulness</td>
<td>1.39 (.79)</td>
<td>2.63 (1.23)</td>
<td>5.35 (98)</td>
<td>(p &lt; .001)</td>
<td>Supported</td>
</tr>
</tbody>
</table>

The key cognitive constructs that the Risk Behavior Diagnosis (RBD) Scale identified as influencing the perceived effectiveness of PSAs were measured for cognitive responses. As can be seen in Table 3, all hypotheses pertaining to cognitive responses were supported. As was predicted by hypothesis 3, the non-humorous condition had significantly higher measures than the humorous condition on perceived severity [non-humor: \(M = 5.67, \ SD = 1.07\); humor: \(M = 5.02, \ SD = 1.42, \ t(98) = 2.59, p < .05\)] and perceived susceptibility [non-humor: \(M = 5.41, \ SD = 1.19\); humor: \(M = 4.39, \ SD = 1.46, \ t(98) = 3.81, p < .01\)]. The measures did not show any significant difference between the non-humorous and humorous conditions for both of the
perceived efficacy measures of self-efficacy [non-humor: \( M = 3.84, SD = 1.39 \); humor: \( M = 3.76, SD = 1.70, t(98) = .23, p = .82 \)] and response efficacy [non-humor: \( M = 4.31, SD = 1.34 \); humor: \( M = 3.98, SD = 1.27, t(98) = 1.25, p = .22 \)].

For fear control responses, no significant differences between the conditions were found for defensive avoidance [non-humor: \( M = 4.94, SD = .98 \); humor: \( M = 4.53, SD = 1.35, t(98) = 1.73, p = .09 \)]. Hypothesis 4 was supported in that the measures were higher for the humorous condition than for the non-humorous condition for message derogation [humor: \( M = 3.18, SD = 1.63 \); non-humor: \( M = 2.56, SD = 1.24, t(98) = 2.13, p < .05 \)] and perceived manipulation [humor: \( M = 3.48, SD = 1.52 \); non-humor: \( M = 2.58, SD = 1.28, t(98) = 3.21, p < .01 \)].

For the danger control responses, no differences between conditions were found. Responses were not significantly different between the non-humorous and humorous conditions for attitude toward the behavior [non-humor: \( M = 4.56, SD = 1.55 \); humor: \( M = 4.81, SD = 1.27, t(98) = .87, p = .39 \)] or behavioral intention [non-humor: \( M = 4.29, SD = .96 \); humor: \( M = 4.05, SD = 1.39, t(98) = 1.01, p = .32 \)].


<table>
<thead>
<tr>
<th>Hypothesis</th>
<th>Cognitive Responses</th>
<th>Non-Humor</th>
<th>Humor</th>
<th>t (df)</th>
<th>p value</th>
<th>Hypothesis Supported</th>
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<tr>
<td><strong>Perceived Threat</strong></td>
<td></td>
<td></td>
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<tr>
<td>Perceived severity</td>
<td>5.67 (1.07)</td>
<td>5.02 (1.42)</td>
<td>2.59 (98)</td>
<td>p &lt; .05</td>
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<td></td>
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<tr>
<td>Perceived susceptibility</td>
<td>5.41 (1.19)</td>
<td>4.39 (1.46)</td>
<td>3.81 (98)</td>
<td>p &lt; .01</td>
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<tr>
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<tr>
<td>Self-efficacy</td>
<td>3.84 (1.39)</td>
<td>3.76 (1.70)</td>
<td>.23 (98)</td>
<td>p = .82</td>
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<td></td>
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<tr>
<td>Response efficacy</td>
<td>4.31 (1.34)</td>
<td>3.98 (1.27)</td>
<td>1.25 (98)</td>
<td>p = .22</td>
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<td></td>
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<tr>
<td><strong>Fear Control Responses</strong></td>
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<td>Defensive avoidance</td>
<td>4.94 (.98)</td>
<td>4.53 (1.35)</td>
<td>1.73 (98)</td>
<td>p = 0.9</td>
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<td>Message derogation</td>
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<td>3.18 (1.63)</td>
<td>2.13 (98)</td>
<td>p &lt; .05</td>
<td>Supported</td>
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<tr>
<td>Perceived manipulation</td>
<td>2.58 (1.28)</td>
<td>3.48 (1.52)</td>
<td>3.21 (98)</td>
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<tr>
<td><strong>Danger Control Responses</strong></td>
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<td>Attitude toward the behavior</td>
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<td>4.81 (1.27)</td>
<td>.87 (98)</td>
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<tr>
<td>Behavioral intention</td>
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<td>4.05 (1.39)</td>
<td>1.01 (98)</td>
<td>p = .32</td>
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</tbody>
</table>

**Discussion**

As can be seen in recent Ad Council ads, utilization of humor in communicating threatening information can be commonly found in threat persuasion messages. But our understanding of humor processes in threat persuasion messages is limited due to the scarcity of research on this topic. On the other hand, a divergence of theories and models exist on pure threat persuasion messages, otherwise known as fear appeals. In Study 1, a direct cross-
comparison between the pure threat persuasion (i.e., non-humorous condition) and the humorous threat persuasion (i.e., humorous condition) was conducted to see how emotional and cognitive processing responses may differ between the two message types. This expands our knowledge of how the specific message processing and overall persuasion for humorous threat persuasion messages may differ from non-humorous, straightforward threat persuasion messages. And by altering only the element of humor between the conditions, the results allowed observation of how the presence of humor can change the dynamics of threat persuasion message processing.

These results show that the emotional and cognitive responses recognized as influential to threat persuasion differ between the more conventional straightforward threat message and the message in which the threat information is communicated through humor. As significant differences between the two conditions for the final persuasion measures of attitude toward the behavior and behavioral intention could not be detected, it can be inferred that the difference in emotional and cognitive responses between the conditions influenced overall persuasion in different but similarly effective ways. For the non-humorous condition, negative emotions (fear, sadness, and shame) and perceived threat, identified in past research as influential in threat persuasion messages, seemed to be significantly higher compared to the humorous condition. For the humorous condition, the positive emotions (happiness and playfulness), message derogation, and perceived manipulation, identified as influential in humor persuasion messages, seemed to be significantly higher than the non-humorous condition. The responses of surprise, perceived efficacy, and defensive avoidance did not significantly differ between the conditions as the presence or absence of humor could not predict significant consequences on these responses.

First and foremost, these results imply that the presence of a humorous element in a PSA could change the emotional and cognitive responses in a significant manner; the message-
induced emotions and cognitions are distinctly different between the non-humorous and humorous conditions. Furthermore, the results seem to show that the higher rated responses for each condition align with the emotions and cognitions recognized in the literature as substantial in increasing effectiveness for either the threat or humor persuasion messages. The negative emotions of fear, sadness, and shame and perceived threat have been recognized as drivers of persuasion for fear appeal messages and were higher for the non-humorous condition. The positive emotions and message derogation have been recognized as influential factors in increasing acceptance and shaping persuasion for humor messages, which were higher for the humorous condition in this research. The difference in responses between the conditions for these important determinants of persuasion implies that they may have helped shape persuasion for the different message types in unique ways. This proposition may be supported by the fact that the attitude toward the behavior and behavioral intention, which represent overall persuasion, were not significantly different between the conditions. Thus it can be implied that the overall effectiveness of the messages was similar, but the emotional and cognitive responses underlying the process were significantly different.

The findings also give support to the functional theories of the emotions approach, which recognizes the merit of investigating distinct emotions that may have separable influences on persuasion. Although Study 1 did not test the influence of the emotions on persuasion, it does give evidence to the fact that multiple emotions may arise simultaneously and the degree to which these emotions are felt may differ significantly between message conditions. As tested by past studies, the distinct emotions will influence message evaluation and persuasion in unique ways: for example, fear will motivate the individual to protect oneself against danger, and happiness elicited by the message will increase source liking and message acceptance. Future
research should also include measures of distinct emotions not only to observe the multiple affective outcomes but also to test which may increase or inhibit message acceptance.

These findings present some implications for campaign planners. Advertisers should understand that all things held constant, the presence or absence of humor would not significantly change the degree of successful message persuasion. Rather, fear and humor appeal messages may work in unique ways to increase message acceptance. Thus, the decision should not be made on assessing whether or not humor may lead to successful persuasions, but should be based on the assessment of the question, “through which processing route does the message want to persuade?” For example, past research documents that eliciting negative feelings resulted in positive correlations with message effectiveness, but an inverse relationship was found between fear and the liking of the PSA (Dillard and Peck 2000). This implies that although successful in instigating change, if the objective of the campaign is to also increase positive awareness and attitude of the message or the organization, strategies that elicit positive emotions such as humor may be more suitable than purely fear-based strategies. On the other hand, humorous risk messages may also instigate change, but may decrease the perceived seriousness of the issue or the message. If the campaign objective includes instilling a sense of urgency and severity of the situation, a humorous approach may not be suitable. The decision to employ fear-based or humor-based strategies should depend on the various objectives of a campaign.

Although the effectiveness of the message did not show significant differences between the humor and the non-humor condition, when individual differences are taken into account, a differential pattern of the overall message effectiveness could emerge. Because the current research deals with problematic and threatening issues, it would be highly likely that the degree to which an individual feels that the issue is highly critical and personally relevant would
significantly influence their processing and attitude towards the humor and threat elements presented in threat persuasion messages. As discussed in Chapter 2, the importance of issue involvement has been recognized as a significant factor in message processing and persuasion for not only general message processing (e.g., Eagly and Chaiken 1993; Cacioppo and Petty 1984; Meyers-Levy and Malaviya 1999), but also for negatively or positively framed messages (e.g., Block and Keller 1995; Maheswaran and Meyers-Levy 1990; Meyers-Levy and Maheswaran 2004; Rothman et al. 1993).

Now that it has been established that the emotional and cognitive responses differ between the non-humor and humor threat message conditions, the factor of issue involvement is considered in Study 2 to test the differences in overall persuasion of the non-humor and humor threat messages between individuals with different involvement levels.
CHAPTER 4

STUDY 2: THE EFFECTS OF HUMOR AND INVOLVEMENT

Threat persuasion messages communicate threatening information to motivate people to conform to a suggested behavior (e.g., “High levels of energy consumption lead to global warming, start conserving energy now”) (Rogers 1983). Without any perceived threat, individuals may feel little need for change, and thus, disregard all attitudinal or behavioral suggestions given in the message. However, communicating a threat has been proven to be a challenging task; distress and unpleasantness created by the threatening information may trigger the motivation to protect oneself from further being in the negative state, prompting the individual to react defensively to the message (i.e., avoidance, counter-argument) (Witte 1992). One way that could appease the intensity of the threat is to use humor in communicating the threat (e.g., showing Eskimos in swimsuits as a consequence of snow melting from global warming), which has been scarcely observed in the literature (Conway and Dubé 2002). In general, humor is known to lower the intensity of negative events and help replace distressing emotions with pleasant feelings (Piddington 1963). In threat persuasion messages, as observed in Study 1, humor, as a buffer, may decrease the intensity of the perceived threat and fear and render the message more approachable. But just as humor effects in advertising are not always universal, it is proposed that the humor effects on threat persuasion are contingent on a person’s level of involvement with the threatening issue. As was discussed in Chapter 2 (in the section titled, “The Importance of Issue Involvement in Humorous Threat Persuasion”), individuals that consider the issue to be highly critical and involving would engage in systematic processing of
the relevant message, during which negative information would be given greater weight and influence due to the occurrence of the negativity bias; individuals that consider the issue to be less critical and involving would process relevant information in a heuristic fashion, for which they would show a tendency to approach positive information and positive surface cues and avoid negative or unpleasant information due to the effects of the hedonic principle. The non-humor threat message would represent the negative condition whereas the humor threat message would represent the condition that delivers positive surface cues. Thus, it could be hypothesized that the non-humor threat message would be more effective for individuals that are higher in issue involvement and the humor threat message would be more effective for lower involvement individuals.

This proposition was tested with the same threat persuasion message used in Study 1: the PSA that posed deforestation and its consequence as threat information. All information was equivalent between conditions except how the threat was presented; it was communicated with humor in one condition and without humor in the other. The effectiveness of a message can be broadly measured in terms of process (e.g., Lee and Mason 1999, Nabi, Moyer-Guseé, and Byrne 2007) and persuasion measures (Hale, Lemieux, and Mongeau 1995; Passyn and Sujan 2006). The various measures that were often used in past research to represent each category were adopted for the current research: processing depth and processing valence were used for message processing measures and attitude toward the behavior, maladaptive response, and behavioral intention were used for message persuasion measures. The higher the rating on all measures except maladaptive response would be indicative of a certain level of successful persuasion. The findings provide important implications: in delivering threat information, employing humor may
be effective for low issue involvement individuals whereas a straightforward threat persuasion may be more effective for high issue involvement individuals.

**Process Measures**

Although not a direct indication of persuasion, one of the important signs that may be indicative of message acceptance is message processing depth. Message processing has been positively correlated with the establishment of strong cognitive structures, which would lead to strong beliefs, evaluations, and attitudes (Griffin et al. 2002). In their studies of threat persuasion, researchers have found evidence of greater elaboration as being indicative of an approach process whereas lower processing levels correlated with an avoidance response (Nabi, Moyer-Guseé, and Byrne 2007; Witte 1992; Witte et al. 1996). As a more conservative measure, the level of supportive message processing serves as evidence of the processing valence (e.g., Conway and Dubé 2002; Lee and Mason 1999; Nabi, Moyer-Guseé, and Byrne 2007). Higher supportive processing would be signs of positive outcome, whereas lower supportive processing would indicate negative outcome.

Low issue involvement individuals, likely to engage in heuristic processing, would be drawn to the presence of the surface humor cue and the positive aspects of humor, and would likely show a positive bias in processing depth and supportive processing for the humor condition compared to the non-humor condition. In contrast, high issue involvement individuals, likely to process information systematically, will find the negatively valenced non-humor condition more impactful, therefore, show greater levels of engagement and agreement for the non-humor condition than the humor condition. The following hypotheses on message processing are proposed.
**H5:** For low issue involvement individuals, message processing depth and supportive message processing will be higher for the humorous condition than the non-humorous condition.

**H6:** For high issue involvement individuals, message processing depth and supportive message processing will be higher for the non-humorous condition than the humorous condition.

**Persuasion Measures**

As often employed to assess message effectiveness in advertising, attitude and behavioral intention was measured (e.g., Hale, Lemieux, and Mongeau 1995; Keller and Block 1996; Passyn and Sujan 2006). To also directly capture the occurrence of negative responses, the maladaptive response scale, often used in threat persuasion research, was incorporated (Brouwers and Sorrentino 1993; Witte et al. 1996). For attitude toward the behavior and behavioral intent, higher scores would indicate greater message effectiveness. It would be the opposite for maladaptive responses; higher scores would indicate low message effectiveness.

In accordance with the previous hypotheses on message processing outcomes, low issue involvement individuals are predicted to show higher levels of persuasion for the humorous condition than the non-humorous condition, whereas, the high issue involvement individuals are predicted to show greater persuasion toward the non-humorous than the humorous condition.
**H7:** For low issue involvement individuals, attitude toward the behavior and behavioral intention will be higher, and maladaptive responses will be lower, for the humorous condition than the non-humorous condition.

**H8:** For high issue involvement individuals, attitude toward the behavior and behavioral intention will be higher, and maladaptive responses will be lower, for the non-humorous condition than the humorous condition.

**Method**

**Subjects**

To test for the hypothesis that an individual’s issue involvement will moderate the humor effects on threat message persuasion, a 2 (humor versus no humor) x 2 (low issue involvement versus high issue involvement) between-subjects design was employed. Eighty-eight undergraduate students were recruited from undergraduate courses at a Southeastern university. Course credit was offered as an incentive to participate. Female participants were 64% of the sample and males were 36%. A median split ($Mdn = 4.00$) was conducted on issue involvement and 45.5% of the sample was found to be low issue involvement whereas 55.5% found the issue to be highly involving.

**Procedure**

The survey was conducted online. A link was provided and upon entering the survey site by clicking on the link, a random link generator randomly assigned the participants to one of the two message conditions (49.8% for non-humor and 50.2% for humor).
Participants were first asked to rate their involvement level with the issue as a background measure, then were shown the advertisement, followed by tasks to rate the dependent variables, and were asked to rate several measures for manipulation checks. Gender was measured as a potential covariate, but was found to be non-significant, thus was dropped from further analyses.

Stimuli

The same two print ads created for Study 1 was used in Study 2. According to the design recommendations for threat messages (Pechmann 2001), the message contained the threat information, the negative consequences of the threat, efficacy information, and behavioral suggestions to reduce the risks of threat. The non-humor and humor conditions were identical except for the presence of the humor element in the humor condition: a Tarzan-looking person swinging out of the trees, about to fall to the barren grounds.

Measures

Independent Measures. As was employed in Study 1, issue involvement was a pre-stimulus measure using a three-item seven-point Likert scale. The items asked how critical the respondents’ thoughts were toward the issue of deforestation (not at all critical/very critical), whether or not the issue of deforestation has personal relevance (not at all/very much), and how involving they find the issue of deforestation (not at all/very much) (Leippe and Elkin 1987). The items were summed and averaged ($\alpha = .83$) and low ($M = 2.63, SD = .76$) and high groups ($M = 4.65, SD = .66$) were formed via the median split ($Mdn = 4.00$). The mean difference of issue involvement between the two groups were significant; $t (86) = 13.30, p < .01$. 

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Dependent Measures. For message processing depth, participants were asked to write down everything that went through their minds while viewing the advertisement. Three minutes were given to finish the task. The total number of message-relevant thoughts was taken as an indication of processing depth (Nabi, Moyer-Guseé, and Byrne 2007).

For supportive message processing, each of the thoughts from the thought eliciting task was coded into supportive or unsupportive thoughts by two trained coders. After a brief training session with the researcher, the judges coded a practice set of 20 responses. Disagreements were discussed until a consensus was reached. After the practice and training sessions, the judges separately coded the main sample. Krippendorff’s $\alpha$ is a strict measure of intercoder reliability, which allows a reliability calculation of dichotomous data with two observers. The calculated $\alpha$ was .91, which is above the acceptable level of .80 (Krippendorff 1980). Any disagreements in the main coding were resolved by discussion with the researcher. The number of supportive thoughts was used as the dependent variable for supportive message processing.

Attitude toward the behavior of “not buying disposable paper cups or paper plates” was a three-item seven-point semantic differential scale (bad/good, undesirable/desirable, unfavorable/favorable) ($\alpha = .88$) (Witte et al. 1996).

Maladaptive responses were a four-item seven-point Likert scale (strongly disagree/strongly agree). The items measured avoidance (“I try not to think about the possibility of deforestation happening”), wishful thinking (“I believe the problem of forest destruction will go away eventually”), fatalism (“If we are destined to face deforestations, there is really nothing we can do about it”), and hopelessness (“Given what I now know about deforestation, I think it may be useless to try to save it”) after viewing the ad ($\alpha = .76$) (Brouwers and Sorrentino 1993).
Behavioral intention was a three-item seven-point semantic differential scale which asked the questions, “How likely is it that you will refrain from buying disposable paper cups or paper plates in the near future?” “How likely is it that you will refrain from buying disposable paper cups or paper plates every time?” and “How interested are you in learning more about the different ways you can conserve paper?” ($\alpha = .78$) (Passyn and Sujan 2006).

**Manipulation Check and Other Measures.** Perceived humor was measured to conduct a humor manipulation check with a four-item, seven-point semantic differential scale (not funny/funny, not amusing/amusing, not entertaining/entertaining, not humorous/humorous) ($\alpha = .98$) (Nabi, Moyer-Guseé, and Byrne 2007).

The premises from which all hypotheses were established in Study 2 need to be validated before hypotheses testing: 1) high issue involvement individuals should find the issue to be critical and relevant, thus, would be more likely to show greater perceived threat and fear concerning the issue and 2) the presence of humor would decrease perceived threat and fear, making the message more positive in valence. Thus, perceived threat and fear were also measured. Perceived threat was measured with a pooled measure of severity (“I believe forest destructions described in the ad are very severe problems”) and vulnerability (“I feel that the forest destructions described in the ad are likely to happen”) ($\alpha = .76$) (Brouwers and Sorrentino 1993). For perceived fear, subjects were asked to indicate how the ad they just saw made them feel by rating on a seven-point Likert scale ranging from “not at all” to “very much.” The three items that represented perceived fear were fearful, afraid, and scared ($\alpha = .90$) (Dillard and Peck 2000).

Lastly, as the current study deals with environmental issues, an individual’s global environmentalism was measured as a likely covariate. Representative items relevant to the
current study were chosen from the Ecocentric and Anthropocentric Attitude Scale (Thompson and Barton 1994): three items from the ecocentric scale (“Nature is valuable for its own sake,” “It makes me sad to see natural environments destroyed,” “One of the worst things about overpopulation is that many natural areas are getting destroyed for development”) (α = .78) and three items from the environmental apathy scale (“Too much emphasis has been placed on conservation,” “I do not think the problem of depletion of natural resources is as bad as many people make it out to be,” “I find it hard to get too concerned about environmental issues”) (α = .84). The apathy scale was reversed to calculate the average of all the items for the global environmentalism measure (α = .75).

Results

Manipulation and Background Assumption Checks

Perceived Humor. A manipulation check showed that the participants viewed the humor condition (M = 4.02, SD = 1.54) as significantly more humorous than the non-humor condition (M = 1.35, SD = .54), F (1, 84) = 117.59, p < .01, η² = .58. This shows that the humor manipulation was successful and that the results of all analyses could be attributed to the presence or absence of humor.

Perceived Threat. A 2 x 2 ANOVA with issue involvement and humor revealed a main effect of issue involvement where perceived threat was generally higher for the high issue involvement individuals (M = 5.45, SD = 1.01) than the low issue involvement individuals (M = 4.91, SD = 1.13), F (1, 84) = 6.69, p < .05, η² = .07 across message conditions. This gives support to the proposition that there exists an inherent difference between low and high issue involvement individuals in their cognitive responses to the issue; due to their different involvement levels
with the problematic issue, given the same information, high involvement individuals would
generally perceive the situation to be more severe than the low issue involvement individuals.
Also, the results indicated that perceived threat was significantly lower for the humorous \((M = 4.81, SD = 1.23)\) than the non-humorous condition \((M = 5.58, SD = .93)\), \(F(1, 84) = 13.23, p < .01, \eta^2 = .14\). This supports the assumption that all things equal, humor appeases the perceived
vulnerability and severity of the threat information, creating a more alleviated and relatively
positive setting than the non-humorous condition.

**Perceived Fear.** A \(2 \times 2\) ANOVA with issue involvement and humor showed a main effect of
issue involvement where perceived fear was higher for the high issue involvement individuals
\((M = 4.12, SD = 1.44)\) than the low issue involvement individuals \((M = 3.32, SD = 1.59)\) across
conditions, \(F(1, 84) = 7.12, p < .01, \eta^2 = .08\). This supports the proposition that high issue
involvement individuals inherently have more negative emotions towards the issue than low
issue involvement individuals. Also, a main effect of humor emerged, where perceived fear was
higher for the non-humorous condition \((M = 4.24, SD = 1.51)\) than the humorous condition \((M = 3.26, SD = 1.45)\), \(F(1, 84) = 10.31, p < .01, \eta^2 = .11\). This indicates that humor appeases negative
emotional responses to the threat persuasion.

**Hypothesis Testing**

A multivariate analysis of covariance (MANCOVA) was first conducted to test the
interaction effect between humorousness of the ad and issue involvement on multiple dependent
variables of processing depth, supportive processing, attitude toward the behavior, maladaptive
responses, and behavioral intention with global environmentalism as the covariate. As
hypothesized, the MANCOVA revealed a statistically significant interaction between humor and
issue involvement ($F = 2.59, p < .05, \eta^2 = .14$). A main effect of issue involvement ($F = 2.45, p < .05, \eta^2 = .13$) was revealed but the humor main effect was not significant ($F = .97, p = .44$). To test each hypothesis, separate analyses of covariance (ANCOVA) were conducted for each dependent variable with the same covariate. The MANCOVA and ANCOVA results are summarized in Table 4.

**TABLE 4**

<table>
<thead>
<tr>
<th>Source</th>
<th>MANCOVA</th>
<th>Processing Depth</th>
<th>Supportive Processing</th>
<th>ABehavior</th>
<th>Maladaptive Responses</th>
<th>Behavioral Intention</th>
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<td>GE</td>
<td>5.75**</td>
<td>.33</td>
<td>.44</td>
<td>4.76*</td>
<td>16.31**</td>
<td>9.85**</td>
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<td>.02</td>
<td>.04</td>
<td>10.02**</td>
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<td>H X I</td>
<td>2.59*</td>
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<td>1.85</td>
<td>.69</td>
<td>.96</td>
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</table>

*Note: $N = 88$, *$p < .05$, **$p < .01$*

*Process Measures.* The ANCOVA for message processing depth revealed that the humor by issue involvement interaction was significant ($F = 4.48, p < .05, \eta^2 = .05$) (Figure 2-A). To understand the nature of the interaction, simple effects of humor at each level of issue involvement were conducted. For low issue involvement participants, the humor resulted in higher processing depth ($M = 3.45$) than the non-humor ad ($M = 2.98$), but with no statistical significance ($F = 1.07, p > .30$). For high issue involvement participants, the non-humor condition ($M = 3.49$) received significantly greater processing than the humor condition ($M = 52$).
2.61) \((F = 4.03, p < .05)\). No significant main effects emerged for message processing depth. Thus, in the case of processing depth, H6 is supported, but not H5.

The ANCOVA for supportive message processing showed a significant interaction between humor and issue involvement \((F = 4.18, p < .05, \eta^2 = .05)\) (Figure 2-B). Simple effects of humor at each involvement level showed that for low issue involvement participants, while not statistically significant \((F < 1)\), humor \((M = 2.94)\) had higher supportive processing than non-humor \((M = 2.59)\), but for high issue involvement participants, the non-humor condition received significantly greater supportive processing \((M = 3.12)\) than the humor condition \((M = 2.20)\) \((F = 4.85, p < .05)\). No other significant effects emerged. Similar to the results of processing depth, results for supportive processing supported H6, but not H5.

**Persuasion Measures.** With ANCOVA, a significant interaction between humor and issue involvement emerged for attitude toward the behavior \((F = 4.95, p < .05, \eta^2 = .06)\) (Figure 2-C). No main effects were observed. The simple effect of humor at each level of issue involvement revealed that low involvement participants had a significantly higher attitude toward the behavior \((M = 5.19)\) when exposed to the humor condition than the non-humor condition \((M = 4.16; F = 5.66, p < .05)\). Conversely, high involvement participants had a higher attitude for the non-humorous ad \((M = 4.76)\) than the humorous ad \((M = 4.50)\), without statistical significance \((F < 1)\). This gives support for H7, but not H8 in the case of attitude toward the behavior.

The ANCOVA results also show an interaction between humor and issue involvement for maladaptive responses \((F = 4.18, p < .05, \eta^2 = .05)\), without any significant main effects (Figure 2-D). Examining the nature of the interaction with simple effects, low involvement participants had lower maladaptive responses for the humor condition \((M = 2.33)\) than the non-humor condition \((M = 2.66)\), but with no statistical significance \((F < 1)\). For the high involvement
participants, the non-humor condition received statistically lower maladaptive responses ($M = 2.09$) than the humor condition ($M = 2.66; F = 5.63, p < .05$). For maladaptive responses, this gives support for H7, but not H8. The ANCOVA for behavioral intention only revealed a significant main effect for issue involvement ($F = 10.02, p < .05, \eta^2 = .11$).

For behavioral intention, the interaction hypothesis between humor and involvement was not supported ($F < 1$) (Figure 2-E). The marginal means for issue involvement showed that low involvement participants had a lower behavioral intention ($M = 3.80$) than the high involvement participants ($M = 4.50$) across conditions ($F = 10.73, p < .01, \eta^2 = .11$). Thus, for behavioral intention, neither H7 nor H8 were supported.

Taken together, the results showed that issue involvement does have an effect on the relationship between humor persuasion messages and its process and persuasion outcomes. Low issue involvement individuals were likely to be positively influenced by humor as evidenced by partial support for H7, which showed higher attitude toward the behavior for the humor condition than the non-humor condition. In contrast, high issue involvement individuals were more likely to show positive responses for the non-humor condition as evidenced by support of H6 and partial support of H8, which showed higher levels of processing depth and supportive processing and lower levels of maladaptive responses for the non-humor condition. However, behavioral intention only showed issue involvement effects and no message effects. Discussion of the results is given in the following section.
FIGURE 2
Effects of Humor and Issue Involvement on Process and Persuasion Measures
Discussion

As humorous threat persuasion is often used in real-world practices and may be more persuasive than threat persuasion under certain circumstances, there is a need to test its effects and the boundary conditions in which those effects may appear. With the scarcity of empirical research that deals with this topic, Study 2 sought to instigate the discussion by examining the effects of humor in threat messages moderated by issue involvement. Theories of both humor processing and threat information processing have been applied in the process, a combination that has rarely been observed in the communication literature (Conway and Dubé 2002).

By allowing reassessment of the threatening information and appeasing the intensity of the threat, humor may lessen the perceived threat and fear during the threat appraisal process of the message. But the effectiveness of this humor effect on message persuasion may be moderated by the individual’s level of issue involvement. Individuals high in issue involvement would give greater weight to negatively valenced information during their systematic processing, therefore, responding more positively to the non-humor threat message condition. On the other hand, for individuals low in issue involvement, the hedonic principle would take effect and the humor threat message condition would be more effective. This differential humor effect was tested on different process and persuasion measures, which provide some level of evidence as to the message effectiveness.

Manipulation and assumption checks showed that 1) humor was successfully manipulated between conditions, 2) high involvement individuals indeed viewed the issue as more threatening and fearful than the low involvement individuals across message conditions, and 3) the manipulated humor in the stimulus significantly lowered participants’ perceived threat and fear. These findings give support to the fact that the difference in message effectiveness between
stimuli is due to the difference in the humor generated between the conditions. Also, they support the assumption that the low and high issue involvement individuals do have inherent differences in their cognitive and emotional responses concerning the issue. And lastly, it shows that the humor was successful in lowering negative responses towards the threat message.

The results of the main study showed that for process measures (i.e., processing depth and supportive message processing), the proposition that high issue involvement individuals would show significantly more positive responses for the non-humor than the humor condition were supported. The opposite prediction for low issue involvement individuals, greater process results for the humor than the non-humor condition, was not supported. The reason that significant results for process measures showed only for high issue involvement individuals may be explained by the fact that process measures are a type of cognitive elaboration task (the task read: “Write down everything that went through your mind”). As evidenced by past studies, high involvement individuals have a propensity to engage in messages systematically and cognitively (e.g., Maheswaran and Meyers-Levy 1990; Petty and Cacioppo 1983), which would make them better equipped to respond to cognitive tasks on the issue. On the other hand, for low involvement individuals who have less motivation concerning the issue, such cognitively taxing tasks may not be suitable for gauging differential message effects.

Partial support was found for two out of three of the persuasion measures: attitude toward the behavior and maladaptive responses. For low issue involvement individuals, attitude toward the behavior was significantly higher for the humor condition than the non-humor condition, but the difference was not significant for maladaptive responses. For high issue involvement individuals, maladaptive responses were significantly higher for the humor condition than the non-humor condition, but the differences were not significant for attitude toward the behavior.
Although partial, these findings give support to the differential humor effects between low and high issue involvement individuals for persuasion measures. More specifically, the higher attitude toward the behavior for the humor condition among low issue involvement individuals provides some evidence that humor may bring positive results when communicating threat information to this group. However, for high issue involvement individuals, humor should not be employed because it has risks of eliciting negative responses such as message derogation and perceived manipulation from the viewer, which could potentially have a negative influence on attitude or behavior. For behavioral intention, only issue involvement differences were found in that high issue involvement individuals had a higher propensity to say they would take action than the low issue involvement subjects across conditions. The reason for the absence of message effects for behavioral intention might be due to the fact that behavior is the last stage in a persuasion process and often the hardest to achieve (Palda 1966). Thus, prior conviction could likely be the strongest predictor of this outcome, which could be unaffected by short-term external influences, such as a single exposure to a threat message. This is especially true when some of the items on the behavior measure asked intentions towards strong commitments (e.g., “How likely is it that you will refrain from buying disposable paper cups or paper plates every time to lower deforestation rates?”), which could have prompted the low involvement individuals to respond negatively. If more moderate measures were employed and long-term effects were examined with message repetition, message effects could also emerge for behavioral intent.

Although limited, the results of the study provide evidence as to the differential effects of humor in threat persuasion between low and high issue involvement groups. This provides several managerial implications for campaign planners. First, the results attest to the fact that, as in other communication formats, using humor in threat persuasion does not guarantee increase in
message effectiveness (Chattopadhyay and Basu 1990). Thus, the decision to employ humor should not be made on whether or not humor may bring successful results, but on whether the target group would be receptive to humorous strategies in threat persuasion. The current study identified issue involvement as a significant factor that influences responses to humor threat persuasion. Practitioners and researchers alike should actively seek out what other factors would significantly influence the process so that they may be considered in future threat persuasion campaign planning. Second, the results suggest that humor may be best suited for audiences who consider the threat to be less critical and imminent. Exploratory research should be done to assess the level of issue involvement of the target group before implementing humor strategies. Certain group characteristics such as age, gender, education level, and income level could have significant correlations with the level of involvement pertaining to an issue. Also, issue involvement would likely be higher among media consumers who choose specialty media vehicles that deal with the issue (e.g., E: The Environment Magazine for environmental issues and Natural Health for health-related issues) compared to the general public. If your main target is highly involved with the issue, they would respond more positively to messages that exude a similar mannerism; messages that acknowledge and preserve the seriousness of the issue. Bringing humor into the discussion in such cases could not only be ineffective, but also counterproductive in the fact that adverse reactions could occur, as was shown in the increase in maladaptive responses. When looking to employ humorous threat persuasion strategies, taking into consideration the characteristics of the target audience and the choice of media vehicles that would have an influence on issue involvement would significantly increase the success of the message campaign.
Study 1 and 2 were conducted with a PSA featuring deforestation as the issue of focus. In order to increase the areas of application of the findings, especially as to the relationship between humor threat messages and issue involvement, Study 3 was conducted with a sunscreen brand advertisement featuring sunburn as the threat and endorsing the use of a sunscreen brand as the solution. This way, results may be generalized across message types (PSA and brand advertisement) and different issues (environmental issue and health issue). In addition to these changes, Study 3 will include an additional moderator: threat intensity. Threat intensity has been recognized as a significant predictor of threat message persuasiveness (e.g., Conway and Dubé 2002; Janis and Fechbach 1953; Hale, Lemieux, and Mongeau 1995). It was reported that the greater the threat intensity, the greater the likelihood that maladaptive responses would occur. The threat intensity was held constant between the humor and non-humor conditions in Study 1 and 2, but the pattern of responses to humor between issue involvement groups may differ depending on the threat intensity presented in the message.
CHAPTER 5

STUDY 3: THE EFFECTS OF THREAT INTENSITY, HUMOR, AND INVOLVEMENT

In Study 1, the difference in emotional and cognitive responses between non-humor and humor threat persuasion messages was measured to understand how people differentially respond to the two types of threat messages. Overall, it was found that positive emotions (e.g., happiness, playfulness) were higher for the humor than the non-humor condition and negative emotions (e.g., fear, sadness, shame) and thoughts (e.g., perceived threat) were higher for the non-humor than the humor condition. In Study 2, responses to the non-humor and humor conditions were measured between people of different involvement levels with the issue. The results gave support to the directions hypothesized; humor was accepted more positively among low issue involvement individuals whereas the non-humor condition was more positively received by the high issue involvement individuals. In Study 3, the research design of Study 2 was taken one step further to incorporate different levels of threat intensity. Referring back to The Extended Model of Threat Persuasion (Figure 1), it was argued that as a person’s perceived threat and fear rises, which would rise with the increase in threat intensity, the chances of fear control processes (e.g., avoidance, counter-argument) rather than danger control processes (e.g., conform to suggestion, attitudinal and behavioral change) occurring would become greater. Thus, it can be argued that threat intensity of the message would influence how people process information during both threat appraisal and coping appraisal processes; greater unpleasantness and negativity would arise during threat appraisal, thus would increase the chances of people turning altogether away from further processing. But even for those who are willing to go onto
the sequential process of coping appraisal, their optimism for efficacy of the solution of the problem would be foreshadowed by the highly intense negativity they felt and thought during the threat appraisal process.

The argument for the importance of threat intensity in threat persuasion messages as an influential element that may change the outcome can also be supported by past studies. In their study of measuring responses to the messages portraying harmful consequences of poor dental hygiene, Janis and Feshbach (1953) found that the low and medium fear appeal generated some level of conformity, whereas the high fear appeal was ineffective in increasing conformity. Also, Janis and Terwilliger (1962) found that when high levels of fear were evoked by the message, there were greater counterarguments and lesser recall of the consequences of smoking. Although these two examples depict a similar relationship as to the threat intensity and the success of the threat persuasion message (i.e., greater the threat intensity, the lesser the message effectiveness), the cumulative findings of past research are found to be contradictory as to the direction of the relationship. And as with Study 2, Study 3 suggests that an answer that could explain for the discrepancy in findings is the level of involvement an individual has with the issue. Individuals who are highly involved with the issue would engage in systematic processing of relevant information, which would bias them to give greater value to negative information (Taylor 1991). For these individuals, the higher the threat intensity (e.g., skin cancer and death from sunburn), the greater it would be valued as non-normative and scarce data in an everyday setting compared to less negative information (e.g., itching and flaking of the skin). Thus, more positive attitudes and greater conformity could occur as threat intensity increases. On the other hand, individuals who are less involved with the issue would process relevant information in a heuristic way, which would prompt them to be more receptive to positive information and cues. Thus, for these
individuals, the greater the intensity of the negativity in the information, the lesser they will appreciate the message.

As mentioned in the previous paragraphs, the different degrees of threat intensity should evoke a different level of perceived threat and fear among individuals. But the level of threat intensity also has implications for the quality of arguments presented. Higher threat intensity information would present more dire and critical consequences, which provide a more compelling reason for the conformity of suggestions given. Comparatively, low threat intensity information need to be more neutral and less critical to maintain the level of low perceived threat and fear in people. Thus, the information presented has to be mediocre in its severity and significance at best, which would make a less compelling argument for attitudinal or behavioral change. This was true for past studies that varied threat intensity; in communicating dangers of smoking, Keller and Block (1996) used coughing, wheezing, fever, and weight loss for the low-fear message and lung cancer, heart attacks, and death for the high-fear message. To communicate the dangers of sunburn, Hale, Lemieux, and Mongeau (1995) listed minor pain and irritation, social embarrassment, and flaking and itching of the skin for the low-fear message and presented consequences of increased risks of melanoma and nonmelanoma cancers that would lead to permanent damage and disfigurement for the high-fear message. In these two studies, consequences of coughing/wheezing from smoking and flaking/itching from sunburn were less dire and critical than the results of heart attacks/death and cancer/disfigurement. If people are willing to process and embrace the information given in the high-fear message, it would serve as a more compelling argument for complying with the suggestions given in the message. And this willingness to process negative information would differ among people of different involvement levels. For those who have greater tolerance for negativity, the high involvement individuals,
increasing the intensity of threat which presents more compelling arguments could be effective. But for those who have lower tolerance for negativity, those who would be prone to avoid or counter-argue highly negative information, the challenge would be to find ways to make the message more approachable without sacrificing the content of the message.

One way of increasing the threat message acceptance could be through the use of humor. When humor is presented in the message, a positive and surface cue would have been introduced into the mix. As have been predicted previously in Study 2, individuals with different involvement levels would react differently to the humor element; low issue involvement individuals would value such positive surface cues due to the hedonic principle of heuristic processing while high issue involvement individuals would be unfavorable to the presence of humor due to the negativity bias created by systematic processing. Especially when humor is met with threat information, for low involvement individuals, humor would act as a buffer and a positive cue that would increase acceptance of the threat information. Thus, the presence of humor facilitates the process of intensely negative information, which would have otherwise been neglected by this group. On the contrary, for high involvement individuals, the presence of humor amidst threat information could be perceived as desensitizing the salience and criticalness of the threat information. Thus, the presence of humor, especially amidst threatening information that the group considers as critical and personally involving, could increase counter-argument and repress any support for the message.

For Study 3, the individuals’ past experience with the problematic issue is used as the involvement variable. The issue that was used in Study 3, sunburn and its consequences, is a health problem that people may or may not have had experiences with in the past. Also, the consequences of sunburn are more immediate, personal, experiential, and grounded compared to
environmental problems. Environmental problems are long-running, are associated with less-immediate consequences, and are an all-encompassing, macro issue, thus, may be generally considered as more abstract and impalpable. For these reasons, environmental problems could be considered as issues that “one might take a stance on,” instead of a more personal and experiential problem. Thus, for sunburn, past experience with the issue would be a more appropriate variable to measure the person’s involvement level with the issue. Also, when asked for a stance on a health-related issue, people may be more prone to respond that they are highly involved, because health issues, especially something as inclusive as sunburn, concern everyone on a direct and personal level. Thus, their answer might not be reflective of their true involvement or commitment level; it may be more reflective of the level of consideration they give to the issue. In this regard, past experience is a more conservative and direct measure of involvement, which would likely capture the true variance of involvement among the individuals.

Past experience is intricately related to a person’s involvement level in that when people have not had experiences with the problem occurring in the past, they will be optimistic that the problem will also not occur in the future. This phenomenon occurs because people predict their future based on their past (Weinstein 1987). This optimism is what prompts them to regard the issue as being not very critical or serious. Thus, lower levels of past encounters with the problem, the lower their involvement with the issue would be. On the other hand, past experience with negative issues decreases optimism; having been a victim of a problem makes people sensitive to the possible dangers of the problem (Janoff-Bulman 1989). Thus, the greater the level of past experience one has had with the issue, the greater their involvement, sensitivity, and negative assessment will be. As was found in the relationship between one’s involvement with the issue and the level of negative assessment of messages regarding the issue in Study 2 (i.e., greater the
involvement, the higher the perceived fear and threat from processing a relevant message), studies on individuals with different levels of past experience and their tendencies have found similar relationships between past experience and perception; Higgins, Amand, and Poole (1997) found that the more negative life experiences the person had, the more negative possibilities s/he imagined would happen in the future and Kantrowitz et al. (1987) and Tanner, Hunt, and Eppright (1991) found that individuals who had a significant number of sexual encounters without contracting sexually transmitted diseases (STDs) tend to perceive less vulnerability and fear concerning the issue. Consequently, past experience was used as a variable to gauge a person’s involvement with the issue in Study 3.

From the above discussion of relevant literature, the relationship between threat intensity, humor, and past experience with threat could be predicted. The low past threat group, who would have low involvement with the issue due to their lack of problems from the past, would have lower levels of elaboration and motivation to process the messages relevant to the issue. As have been supported by the Heuristic Systematic Model (HSM) (Eagly and Chaiken 1993), those engaging in low involvement and heuristic processing would be attracted to surface and positive cues. But this does not mean that the mere presence of humor would increase message persuasion for this group. The role of humor would be different depending on the existence of other elements in the message, especially as to the threat intensity information in the current case. When the threat intensity is low (i.e., mere mention of the word ‘sunburn’), the message contains no real imminent and crucial information to instill the significance of the problem and solution. When the low threat intensity information and attitudinal or behavioral suggestions is given in the message alongside the humorous element, the low past threat individuals would be drawn to the humor. With limited cognitive elaboration, the focus on humor would draw elaboration away
from any non-significant message elements mediocre in impact: the threat information and the solution to choose the brand of sunscreen advertised, which would have been needed for any significant level of persuasion to have taken place. Focusing on the positive cue of humor with limited elaboration, persuasion of the message with non-significant information (i.e., low threat intensity) would be low. On the other hand, when no humor exists to take elaboration away from this low past threat group, they would have the chance to focus on the low threat information and the brand information as the problem and solution. Thus, the appropriate elements needed for persuasion would be processed, resulting in higher persuasion than had it been with the presence of humor. Consequently, for low past threat individuals, when threat intensity is low, the no humor message would result in greater persuasion than the humor message.

When threat intensity is high (i.e., severe disfigurement, seizures, and death from sunburns) for the low past threat group, the information would be considered as significantly impactful, but the severe negativity of the information would likely drive this group away from further processing the message or conforming to its suggestions. When humor is present, the playfulness and positivity of the humor reduces the perceived fear and negativity of the high threat intensity information, making it more approachable. Although elaboration would be limited, because the high intensity information is significant in its value for protecting one’s own well-being, it will not be completely ignored, especially with the buffering effect of humor. But when humor is not present, the highly intense negativity would be too much to process, given that this group has greater optimism and lower invested interest in the matter. Any motivation to process the message would be turned off, leading to greater message avoidance. Thus, when threat intensity is high for low past threat individuals, the humor message will have greater persuasive power than the non-humor message.
In terms of the role of humor for low involvement individuals mentioned previously, it can be concluded from the above discussion that when humor is presented along the low threat intensity information, it acts as a distraction from the main elements of persuasion, but when threat intensity is high, it becomes a buffer in which the unpleasantness and negativity of the threat information is lowered and the message becomes more approachable.

For the high past threat group, the pattern opposite that of the low past threat group can be predicted. Having had problems with the issue in the past, this group would consider the problem critical and themselves as a vulnerable population, thus having high involvement with the issue. This would prompt them to have high levels of motivation to elaborate on issue relevant messages. Because of the negativity bias that comes with systematic and critical processing of high involvement, this group of individuals would be drawn to negative cues and information. But in the low threat condition, the mere mention of sunburn would not necessarily qualify as negative, significant, and non-normative information. With much elaboration to exhaust, without any other intriguing information present (especially as to those negative and non-normative), the high past threat individuals would not be impacted much by the message. But when humor is present in the low threat condition, this group may consider the humor as an intriguing piece of information to elaborate on. This is supported by the fact that humor has been recognized as a cognitive puzzle, an interesting piece of information that grabs attention and facilitates elaboration (Speck 1990). With high motivation and elaboration, the humor element will be processed along with other information given in the message such as the mention of sunburn (problem) and the suggestion to use the advertised sunscreen (solution). The fact that information is more comprehensively perceived and greater pieces of information is integrated to form attitudes and opinions during high involvement and systematic processing attests to this
(Petty and Cacioppo 1983); for high past threat individuals, humor may be an initial attention grabber, but will not be a distracter that takes elaboration away from the central information in that all information will be fully comprehended and integrated. Thus, with the absence of a strong negative cue, the presence of humor may actually increase persuasion among the high involvement group. Thus, for the high past threat group, when threat intensity is low, the humor more so than the non-humor message will be persuasive.

In the high threat intensity conditions, the significantly negative and non-normative information would be present, therefore would intrigue and increase motivation for elaboration of the message for the high past threat group. The piece of negative information would be considered as informative and the suggestions given in the message would be appreciated as solutions to the problem. But when the positive cue of humor is present, it would be considered that the graveness and severity of the non-normative information have been devalued and the problem and solution given in the message would be depreciated. Thus, when the threat intensity is high for the high past threat group, the non-humor condition would have greater persuasive power than the humor condition.

Discussing the role of humor for high involvement individuals; when humor is presented along the low threat intensity information, it provides interest and intrigue among information of mediocre impact, but when it is presented among high threat intensity information, it becomes a distraction that depreciates the value of non-normative negative information.

For both groups, when the threat intensity is medium (i.e., flaking and itching from sunburns), the differences between the non-humor and humor conditions cannot be as decisively predicted. For the low involvement group, the threat intensity could be adequate in instilling a sense of purpose for complying with given suggestions, evoking enough stimulation to grab
attention even with the presence of a positive cue of humor. Thus, the presence of humor may not be a big factor of distraction, which would make it hard to predict a significant difference between the humor and non-humor conditions. From the other side of the argument, the medium threat intensity may not be too frightening as to push away the low involvement individuals from further processing. Thus, the humor’s role as a buffer may not come into effect, which would also make it hard to predict any significant differences between the humor and non-humor conditions. For the high involvement group, the medium threat level may not be as insignificant as the low threat intensity information, thus, even without the interesting aspect of humor, they could develop enough motivation to process the message. On the other hand, the medium threat intensity may not be significantly severe enough to trigger the high past threat individuals’ negativity bias. Thus, the role of humor in diffusing the seriousness of the message may not take its full effect, rendering the difference between humor and non-humor non-significant.

Thus, excluding any predictions as to the medium level threat, the following hypotheses among threat intensity, humor, and past experience can be proposed:

**H9:** For low past threat individuals, when the threat intensity is low, the non-humorous message will be more effective than the humorous message, but when the threat intensity is high, the humorous message will be more effective than the non-humorous message (effectiveness measured by Aad, Ab, and PI).

**H10:** For high past threat individuals, when the threat intensity is low, the humorous message will be more effective than the non-humorous message, but when the threat
The intensity is high, the non-humorous message will be more effective than the humorous message (effectiveness measured by Aad, Ab, and PI).

**Method**

**Subjects**

Two hundred seventy-eight undergraduate students were recruited from introductory courses at a Southeastern university. Extra course credit was offered as an incentive to participate. Gender of the participants was 58% female and 42% male. The participants were split into low (47.1% of the sample, $M = 2.92$, $SD = .96$) and high past threat groups (52.9% of the sample, $M = 5.52$, $SD = .78$) via the median split ($Mdn = 4.50$). The measured past threat differences between the two groups were statistically significant; $t(276) = 25.60$, $p < .01$.

**Procedure**

The subjects participated online. The survey link was provided which randomly lead the subjects into one of six different message conditions, 2 (humor: humor or non-humor) x 3 (threat level: low, medium, or high threat), through a random link generator. For the humor factor, 48.9% was assigned to the humor condition whereas the 51.1% was assigned to the non-humor condition. For the threat level, 32.7%, 33.8%, and 33.5% of the participants were assigned to the low, medium, and high threat level conditions, respectively. Level of past threat was measured first, then subjects were shown the advertisement, after which they were asked to rate the dependent and manipulation check measures. As in Study 2, gender was measured, but found to be non-significant as a covariate, thus was excluded from further analyses.
Stimuli

In Study 3, a brand advertisement for a sunscreen was used. A fictional sunscreen brand name (Bio Sunscreen) was used that pretested low in familiarity and neutral in benefit, quality, and name liking (e.g., Baker 1999). The verbal copy of the advertisement contained the following elements: threat information given on top of the page, followed by the negative consequences of the threat, and the behavioral suggestions to buy the sunscreen to reduce the risks of the threat on the bottom. The threat information and the negative consequences that would follow differed for the three threat levels; for the low threat level condition, there was a mere mention of “sunburn” in the advertisement copy; for the medium threat level condition the ad copy read, “Exposure to ultraviolet radiation can cause sunburns, which cause flaking and itching”; for the high threat condition the copy said, “Exposure to ultraviolet radiation can lead to increased rates of skin cancers, which cause severe disfigurement, seizures, and death.” The behavioral suggestion read, “Protect yourself from sun damage with Bio Sunscreen,” which was the same across all conditions. Humor was created with verbal copy and image; the non-humor condition read, “Simply use Bio Sunscreen before going outside,” with an image of a bottle of sunscreen with a check mark on the frame; the humor condition read, “You don’t have to go to extremes to protect your skin (like wearing body suits). Simply use Bio Sunscreen before going outside,” followed by a framed image of a person in a full body suit and a framed image of the same sunscreen bottle from the non-humor condition with the check mark on it. The humor comes from showing an extreme case of protection against sun damage, a person in a body suit, and how easy it would be to avoid being in such a silly situation by simply using Bio Sunscreen. The actual stimuli used are shown in Appendix B.
Measures

Independent Measures. Past threat was a pre-stimulus measure using a two-item seven-point Likert Scale. The items asked to indicate to what extent the statement was true for the individual ranging from 1, “never or almost never true to” 7, “always or almost always true.” The statements were, “I have suffered from sun damage before,” and “people around me have suffered from sun damage before” (Keller and Block 1996), $r (276) = .66, p < .01$.

Dependent Measures. Attitude toward the ad was measured on a four-item, seven-point Semantic Differential Scale (bad/good, dislike/like, uninteresting/interesting, irritating/not irritating) ($\alpha = .88$) (Schlosser 2005). Attitude toward the brand was a three-item, seven-point Semantic Differential Scale (looks like a bad brand/looks like a good brand, don’t like the brand/like the brand, the brand is undesirable/the brand is desirable) ($\alpha = .95$) (Simons and Carey 1998). Purchase intention was measured on a three-item, seven-point Semantic Differential Scale (unlikely/likely, improbable/probable, uncertain/certain) ($\alpha = .89$) (Sabbane, Lowrey, and Chebat 2009).

Manipulation Check and Other Measures. To assess the success of the humor manipulation, a three-item, seven-point Semantic Differential scale was employed to measure perceived humor (not funny/funny, not amusing/amusing, not entertaining/entertaining, not humorous/humorous) ($\alpha = .98$) (Nabi, Moyer-Guseé, and Byrne 2007). To assess the success of the threat manipulation, emotional responses of fear (fearful, afraid, scared) ($\alpha = .97$) and happy (happy, cheerful, joyful) ($\alpha = .97$) was measured on seven-point Likert scales, ranging from “not at all” to “very much” (Dillard and Peck 2000). Also, cognitive responses of perceived threat was measured with seven-point Likert scales (strongly disagree/strongly agree) with the statements, “I believe sun damage
to the skin is a very severe problem,” “I feel that sun damage to the skin is likely to happen” (Brouwers and Sorrentino, 1993), \( r (276) = .76, p < .01 \). Lastly, participants’ gender was asked.

**Results**

Data was analyzed as a 2 (humor or non-humor) x 3 (low, medium, or high threat level) x 2 (low or high past threat) between-subjects factorial. All means for manipulation check and hypotheses testing measures are provided in Table 5.

**Manipulation Checks**

*Threat Intensity Level.* The greater the threat intensity, the greater the advertisement should be perceived as negative in valence compared to the lower intensity conditions. Emotional responses of fear and happy were used to test this proposition as they would indicate the respondents’ perceived valence of the advertisement. Only a main effect of threat level emerged for perceived fear; \( F (2, 278) = 6.10, p < .05, \eta^2 = .04 \). As predicted, Fisher’s LSD post hoc analyses indicated that for the perceived fear, the high threat level condition \((M = 2.51)\) had the highest scores followed by the medium threat level \((M = 2.16)\) and the low threat level \((M = 1.64)\) \((ps < .05)\). Also for happiness, only the main effect of threat level emerged; \( F (2, 278) = 4.88, p < .05, \eta^2 = .04 \). Fisher’s LSD post hoc analyses revealed significant differences between the three threat level conditions; the positive response of happy was highest for the low threat level condition \((M = 2.56)\) followed by the medium \((M = 2.15)\) and high threat levels \((M = 1.75)\) \((ps < .05)\). In addition, perceived threat, a more cognitive measure, was tested to see the difference in responses among the threat level conditions, but main threat level effects on perceived threat was not found \((p = .09)\). In Study 1 and 2, the focus was environmental issues, for which the verdict
on its severity and importance is considered to be ‘still out’ for some members of the public. Thus, the difference in cognitive perceptions of the issue could have been strong between individuals with different involvement levels. Compared to that, more immediate and personal issues such as health issues in Study 3 are considered by the majority as substantial, even if one might not feel highly vulnerable to the situation. Thus, when measured rationally and cognitively, the difference between the two involvement level groups might be less prominent. This may be true especially due to the wording of the perceived threat measures, “I believe sun damage to the skin is a very severe problem,” for severity and “I feel that sun damage to the skin is likely to happen,” for vulnerability. Due to the issue being considered as substantial, the mere mention of sun damage in advertisements may be enough to instill a cognitive sense of threat in people. Although the differences did not show for perceived threat, the significant differences for the emotional responses of fear and happy shows that the perceived message valence was indeed more positive for the lower threat level conditions and more negative for the higher threat level conditions.

_Humor Condition._ Only the main effect for humor emerged for the perceived humor index; $F (1, 278) = 70.75, p < .01, \eta^2 = .21$. Consistent with expectations, the humor condition had significantly higher levels of perceived humor ($M = 3.13$) than the non-humor condition ($M = 1.65$). This shows that the humor manipulation was successful.

_Hypotheses Testing_

A multivariate analysis of variance (MANOVA) was first conducted to test the interaction effect between humor, threat level, and past threat experiences on multiple dependent variables indicating message persuasion: attitude toward the ad, attitude toward the brand, and
purchase intention. The results revealed a three-way interaction between humor, threat, and past threat experiences; Wilks’ lambda = .91; \( F(2, 278) = 4.45, p < .01, \eta^2 = .05. \) To better understand the nature of the interaction, separate univariate analyses of variance (ANOVA) were conducted on each of the dependent variables.

For attitude toward the ad (Aad), the ANOVA only revealed a statistically marginal three-way interaction \( (p < .10) \). One significant finding for Aad was the difference between no-humor \( (M = 2.87) \) and humor \( (M = 3.99) \) conditions for the low threat level for the high past threat experience group \( (F(2, 278) = 7.42, p < .01, \eta^2 = .03) \). No other statistically significant main or interaction effects were observed (Figure 3).

The ANOVA for attitude toward the brand (Ab) shows a significant three-way interaction for humor, threat level, and past threat; \( F(2, 278) = 10.06, p < .01, \eta^2 = .07 \), depicted in Figure 4. Observing the three-way interaction more closely, the results showed that the interaction of humor and threat level was significant in both the low \( (F(2, 278) = 5.18, p < .01, \eta^2 = .08) \) and high \( (F(2, 278) = 4.852, p < .01, \eta^2 = .06) \) past threat groups. No other significant main or interaction effects were observed.

For the low past threat individuals, when the message threat level was low, Ab was significantly higher in the no humor condition \( (M = 3.80) \) than the humor condition \( (M = 2.93) \) \( (F(2, 278) = 4.23, p < .05, \eta^2 = .02) \) and when the message threat level was high, the opposite was true; Ab was significantly higher in the humor condition \( (M = 4.13) \) than the non-humor condition \( (M = 2.99) \) \( (F(2, 278) = 7.01, p < .01, \eta^2 = .03) \). For the high past threat individuals, a pattern of humor and threat interaction that was opposite from the low past threat individuals was observed; when the message threat level was low, the humor condition \( (M = 3.97) \) had significantly higher Ab than the non-humor condition \( (M = 3.07) \) \( (F(2, 278) = 4.56, p < .05, \eta^2 \)
and when the message threat level was high, the non-humor condition had significantly higher Ab ($M = 3.95$) than the humor condition ($M = 3.08$) ($F (2, 278) = 4.48, p < .05, \eta^2 = .02$). For either of the past threat groups, significant differences between humor and non-humor conditions did not emerge for the medium threat level condition ($F < 1$).

In addition, for the low past threat group, when the message conditions were humorous, the difference between low and high threat level conditions was significant; the high threat level message ($M = 4.13$) had significantly higher Ab than the low threat level message ($M = 2.93$) ($F (2, 278) = 3.88, p < .05, \eta^2 = .03$).

The ANOVA for purchase intention (PI) also shows a significant three-way interaction between humor, threat level, and past threat; $F (2, 278) = 3.85, p < .05, \eta^2 = .03$. The two-way interaction between humor and threat level on PI was not significant for the low past threat group ($F < 1$) but was significant for the high past threat group ($F (2, 278) = 3.355, p < .05, \eta^2 = .05$). No other main or interaction effects were detected. Upon closer observation, it was found that the two-way interaction for the high past threat group came from the significant difference between the no humor and humor conditions for high threat level message; the non-humor condition ($M = 3.40$) had significantly higher PI than the humor condition ($M = 2.38$) ($F (2, 278) = 5.84, p < .05, \eta^2 = .02$). When comparing PI scores across threat levels for the high past threat group, it showed that when it was the non-humor condition, PI was significantly higher for the high threat level ($M = 3.40$) than the low threat level ($M = 2.32$) ($F (2, 278) = 3.27, p < .05, \eta^2 = .02$). No other mean differences were significant ($p > 1$). This is depicted in Figure 5.

Overall, the results gave partial support for H9, which predicted significant differences between the humor and non-humor messages for low and high threat intensity conditions for low past threat individuals; the differences were significant and the directions were as predicted for
both low and high intensity conditions for Ab. H10 was also partially supported, which predicted significant differences between the humor and non-humor messages for low and high threat intensity conditions for high past threat individuals; the differences were significant and the directions were as predicted for the low threat intensity condition for Aad, both low and high threat intensity conditions for Ab, and for the high threat intensity condition for PI.

Discussion

Study 3 incorporated different levels of threat intensity to examine the relationship between threat, humor, and involvement. Threat intensity was recognized in past studies as a significant element that would influence message outcome. Unlike Study 1 and 2, Study 3 used levels of past threat experience as the involvement variable due to the fact that sunburn and its consequences was a health problem for which past level of experience would highly impact current and future involvement with the issue. As predicted, the combination of threat intensity with humor was found to have differential impact on low and high past threat groups. Although partially supportive results were found for Aad and PI, the general findings of the results for Aad, Ab, and PI all taken together supported the proposition that for the low past threat group, when threat intensity is low, the non-humor condition than the humor condition would be more persuasive, whereas when the threat intensity was high, the humor condition more than the non-humor condition would be persuasive. The opposite would be true for the high past threat group; when threat intensity is low, the humor condition would be judged as more positive than the non-humor condition, whereas for the high threat intensity condition, the non-humor condition would work better than the humor condition. For Aad, only the difference between the humor and non-humor messages in the low threat condition for the high past threat group was found. For Ab, full
support for the differences predicted between the humor vs. non-humor messages for both low and high intensity threat among both the low and high past threat groups were found. For PI, partial support also emerged, the difference between non-humor and humor conditions showed only in the high threat intensity condition for the high past threat group. As was discussed in the literature for Study 3, no significant differences were detected between the no-humor and humor messages of medium threat intensity for either the low or high past threat experience groups.

When looking at the results separately, partial support for Aad and PI was found, with both showing non-significance in humor and threat level interaction for the low past threat group. One explanation for the absence of significant results for Aad may be that the low threat individuals generally do not have much interest in the topic and its relevant messages and as the quality of the advertisements was fairly generic in order to control for any confounding effects (see Appendix B), the advertisements may not have been attractive enough to have any immediate effects on the Aad for this group. Had the advertisement quality been at a professional level, significant advertising effects might have emerged. For the lack of significance among the low past threat group for PI, it would have been hard to motivate as strong a conviction as purchasing behavior with one message exposure for individuals with generally low levels of vested interest. Nonetheless, the emergence of the significant results for the brand for the low past threat group could have been due to the fact that the brand information have been repeatedly emphasized in the messages, thus even if attitude toward the advertisement may not have formed, persuasion on the brand level may have taken place. Also, forming an attitude toward the brand is a conviction of a significantly lesser degree than purchase intention.

The results have implications for practitioners. For some issues, the level of past threat may be high among the key target demographic, such as sun damage and dental problems, which
are highly likely to occur. For other issues, such as permanently losing one’s luggage or becoming a victim of identity theft, the likelihood of occurrence may be low. If campaign planners could gauge the level of past threat among their target population through research, the effective combination of threat and humor levels could be suggested. When the group has low levels of past threat, the combinations of low threat and no humor or high threat and humor would work effectively. When the group has high levels of past threat, the combination of low threat and humor or high threat information without the use of humor would be effective. But furthermore looking at the results overall, if one recommendation had to be made for each threat level group, for the low past threat group, a combination of high threat and humor seems to be most effective, and for the high past threat group, a combination of high threat without the use of humor seems to generally produce the most effective results. The reason for both groups to respond positively to the high threat intensity information would be because it carries information of a greater importance, significance, and argument strength than the lower threat intensity information. For the low threat experience group, having had the strong argument communicated through humor would have made the information more approachable, making the combination of high threat intensity and humor most effective. For the high threat experience group, high threat intensity without the use of humor would have preserved the seriousness of the issue, qualifying as highly negative and non-normative information. Learning which level of past problems with the issue your audience is, which have indications for the individuals’ level of involvement with the issue, would help design a campaign with the most effective combination of threat intensity and humor.
# TABLE 5
Multivariate and Univariate F-Values of Study 3

<table>
<thead>
<tr>
<th>Source</th>
<th>MANOVA</th>
<th>Aad</th>
<th>Ab</th>
<th>PI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Humor</td>
<td>2.95*</td>
<td>1.79</td>
<td>.28</td>
<td>1.33</td>
</tr>
<tr>
<td>Threat</td>
<td>.73</td>
<td>.61</td>
<td>.33</td>
<td>1.28</td>
</tr>
<tr>
<td>Past Threat</td>
<td>.51</td>
<td>.45</td>
<td>1.13</td>
<td>.15</td>
</tr>
<tr>
<td>T x H</td>
<td>.90</td>
<td>.55</td>
<td>.052</td>
<td>.38</td>
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<tr>
<td>T x PT</td>
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<td>.14</td>
<td>.654</td>
<td>.05</td>
</tr>
<tr>
<td>H x PT</td>
<td>.50</td>
<td>.43</td>
<td>.052</td>
<td>.01</td>
</tr>
<tr>
<td>T x H x PT</td>
<td>4.45**</td>
<td>2.88</td>
<td>10.06**</td>
<td>3.85**</td>
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<tr>
<td>Error</td>
<td>1.96</td>
<td>2.04</td>
<td>2.20</td>
<td></td>
</tr>
</tbody>
</table>

*Note: N = 278, * p < .05, ** p < .01*
FIGURE 3

Three-Way Interaction of Past Threat by Humor and Threat Intensity Levels on Attitude toward the Ad
FIGURE 4
Three-Way Interaction of Past Threat by Humor and Threat Intensity Levels on Attitude toward the Brand
FIGURE 5
Three-Way Interaction of Past Threat by Humor and Threat Intensity Levels on Purchase Intention
CHAPTER 6

GENERAL DISCUSSION

The current research looked at the combination of humor and threat in advertising, which has seldom been studied in the literature. The effects of using humor to communicate threatening information and the boundary conditions in which the effects may appear were explored in three experimental studies. Study 1 was a preliminary study that sought to understand the differences in the underlying cognitive and emotional responses between a straightforward threat persuasion message and a humorous threat persuasion message. As the humor and fear appeal literature contends (e.g., Conway and Dubé 2002; Martin 2007; Tanner, hunt, and Eppright 1994; Witte 1992), Study 1 results showed that emotions and cognitions negative in valence were greater in respondents who were exposed to the straightforward threat persuasion message compared to respondents who were exposed to the humorous threat persuasion message. On the other hand, responses of a more positive nature were greater for the humorous threat persuasion message compared to the non-humorous threat persuasion message. This attested to the fact that how people respond to the two different message types were indeed different, especially in terms of the valence of emotions and thoughts they evoke; the non-humor threat persuasion evokes responses more negative in valence and the humorous threat persuasion evokes responses more positive in valence. This served as grounds for Study 2 and Study 3, which hypothesized that individuals with different involvement levels would respond to the humor and non-humor threat message differently, due to the difference in valence that they evoke. In Study 2, an individual’s involvement with the issue was considered as a boundary condition in which the difference in
message effectiveness would arise between the non-humor and humor messages. It could be inferred by the Heuristic Systematic Model (HSM) that an individual’s involvement with the issue would influence the type of processing one would engage in when faced with messages relevant to the issue; such that the highly involved individuals would engage in systematic processing, which would prompt them to be more attentive and appreciative of negatively valenced information, also known as the negativity bias of systematic processing (Kanouse 1984; Meyers-Levy and Maheswaran 2004). In contrast, the low involvement individuals tend to engage in heuristic processing, which would prompt them to be more receptive to positively valenced messages and positive surface cues that grab attention, otherwise known as the hedonic principle of heuristic processing (Higgins 1998). Thus, it was hypothesized and generally found that across process and persuasion measures, individuals who were low in issue involvement responded more positively to the humorous threat persuasion than the straightforward threat persuasion, whereas those who were high in issue involvement rated the non-humor version as more effective. It was found through Study 2 that an individual’s involvement level was indeed a significant factor that moderated one’s responses to non-humorous or humorous threat persuasion messages. This gives evidence to the contention that the question to be asked in studying or implementing humorous threat persuasion messages is not whether or not humor would increase effectiveness of threat messages, but to whom (i.e., low or high issue involvement individuals) or under which circumstances (i.e., circumstances allowing for greater or lesser elaboration of the message) would humor increase threat persuasion effectiveness. In Study 3, a different topic (i.e., sunburn and its consequences), a different advertising format (i.e., brand advertising), and an involvement variable more appropriate to the topic at hand (i.e., past experiences with sunburn) were used to see if the findings from Study 2 (in terms of the
relationship between involvement and humorous threat persuasion) could be replicated. In addition, as the level of threat intensity has been recognized as an important variable in past threat persuasion studies, the intensity of threat information was varied in Study 3 to observe the combined influence of threat intensity, humor, and involvement levels on message effectiveness. Similar to Study 2, the key to understanding the difference in responses for the different combinations of humor and threat intensity was predicted to be a person’s involvement with the issue, measured with level of past threat experiences. Individuals that had low threat experiences in the past would have low levels of involvement with the issue, thus would tend to engage in heuristic processing for relevant information. When the threat intensity is low, which implies that the threat information would have relatively low substantive value, the presence of humor would take elaboration away from the central arguments of the message, that being threat information as the problem and attitudinal or behavioral change as the solution to reducing the risks of the problem. But when the low intensity threat is communicated without the use of humor, the limited elaboration would be concentrated on the problem and solution, resulting in greater persuasion for the non-humor message. When the threat intensity is high, for the non-humor message, the negativity of the message would be high, driving the low involvement individuals away from further processing. But when the high threat intensity is communicated with the use of humor, it should serve as a positive and surface cue that would drive down the negativity of the message, increasing elaboration of central elements of the message. Thus, when threat intensity is high, the humor message would be more effective than the non-humor message for this group. For the individuals who have had greater levels of threat experiences in the past, having higher levels of involvement with the issue, when the threat information is non-substantive and not highly negative (i.e., low threat intensity), the humor would serve as a
cognitive puzzle and a challenge that will intrigue interest in processing the message. With greater elaboration to exhaust, the high involvement individuals would have the ability to not only process the humor, but to integrate it with the other core elements in the message to form an attitude. When the low threat intensity information is communicated without the use of humor, the message would be considered as not intriguing or worthy of further elaboration. Thus, for the high involvement individuals, when threat intensity is low, the utilization of humor would bring more positive effects. When the threat intensity is high, the negativity bias of systematic processing for the high involvement individuals would kick in, which would result in greater positive responses for the non-humor message than the humor message. Study 3 gave additional support as to the importance of considering one’s involvement level with the issue when gauging effectiveness of humorous threat persuasion messages. In addition, it showed threat intensity to be an important message variant, which, combined with humor, would be differentially received by individuals of different involvement levels. Depending on the level of threat intensity, which has implications for the importance and substantiveness of the message, and also depending on the individuals’ level of involvement, the role of humor would change, as a distraction, an attention grabber, or a buffer, resulting in different message effectiveness levels. With study results such as this, the most effective combination of threat intensity and humor could be chosen for audiences of different involvement levels with the issue.

Across the three studies it was found that 1) the straightforward threat persuasion evoked greater negative responses of perceived threat and fear than the humorous threat persuasion, whereas the humorous threat persuasion evoked greater positive responses and perceived humor than the non-humor message, 2) an individuals’ issue involvement is significantly important in understanding responses to humorous threat messages, and 3) the level of threat intensity in the
message likely determines the role of humor as either a distraction, elaboration facilitator, or a buffer for individuals of different involvement levels.

From a theoretical standpoint, this research looked at the combination of threat and humor information in advertising, integrating theories of both threat persuasion and humor processes in the extant literature. Although there have been studies that compared responses between threat appeal or humor appeal messages (Dillard and Peck 2000), not having controlled for all other message elements in the advertising or audience factors, a direct comparison between the two treatments could not be made. Focusing on a comparison between a straightforward threat message and a threat message communicated through the use of humor, both of which are often employed in real-world practices, across the three studies, the current study allowed direct comparison between a threat-based message and a humorous threat-based message by varying only the presence or absence of a humorous element. Thus, direct comparisons of the underlying emotional and cognitive responses were made between the two message types, which were unprecedented in either the threat or humor literature. This direct comparison allowed for greater understanding of how a humorous threat message differs in emotional and cognitive responses compared to the straightforward threat message.

Furthermore, a person’s involvement level with the issue, which has ramifications of the type of processing an individual would engage in, was found to be a significant factor that influences how the individual would respond to the combination of threat intensity and humor. The HSM and the theory of involvement have been tested in both the humor (e.g., Chung and Zhao 2003; Nabi, Moyer-Guseé, and Byrne 2007) and fear appeal research (e.g., Keller and Block 1996), but through this study, it was found that the theory of involvement is also applicable to the context of the combination of humor and threat. In addition, the various roles of
humor that have been listed in humor research (as distraction from central message elements, intriguing element that facilitates message processing, and as a buffer of threatening information) has been differentially hypothesized depending on the involvement level and the intensity of threat information given. In the cases when involvement level and threat intensity are low and when involvement level and threat intensity are high, humor would act as distraction from central elements of the message. When involvement level is low but threat intensity is high, humor would act as a buffer to the threatening information. When involvement level is high but threat intensity is low, humor would act as an intriguing piece of information that increases message elaboration. These propositions were grounded on humor theories along with the discussion of involvement, and the greater ratings of the message effectiveness predicted for each situation served as evidence for the theoretical propositions in Study 3.

In addition, in terms of threat persuasion, it was proposed in the literature that the substantiveness of the information is lower for the low threat intensity message and higher for the high threat intensity message. The proposition that if people can indeed be receptive to the higher threat intensity information, which is more substantive and of greater importance, the greater attitudinal or behavioral change would take place was given evidence by the greater message effectiveness detected for the combination of high intensity threat and humor for the low involvement individuals and high intensity and no-humor for the high involvement individuals. When considered from the perspectives of “what worked best” (i.e., with humor for low involvement individuals and without humor for high involvement individuals), the high threat intensity condition generated the greatest message persuasion. Thus, for threat persuasion, whether with humor, no-humor, or any other message elements, the challenge would be to find
ways to increase elaboration and acceptance of high intensity threat, in that high intensity threats arguably provide the greatest rationale for conforming to suggestions given in the message.

From a practical perspective, the studies give suggestions as to the combination of humor and threat intensity for audiences of different involvement levels. For some target audiences, their involvement with certain issues may be inherently low (e.g., younger audiences may be indifferent to the risks of cholesterol) or inherently high (e.g., older female audiences may consider the risks of osteoporosis as a critical issue). Individuals who consume certain media vehicles may be of low or high involvement with certain issues. For example, readers of environmental magazines are likely to be highly invested in environmental issues and readers of health magazines tend to consider health issues to be critical. For certain problematic issues that the general public has had greater exposure to (e.g., dental problems and sunburn), there would be a greater number of individuals who would consider the issue to be highly important, whereas for issues that may be lower in occurrence or low in its immediacy (e.g., becoming ill during traveling or global warming), greater numbers of the general public are likely to be low in involvement. Through research, if the involvement levels of the target audience or the audiences of the media vehicles in consideration can be gauged, campaign planners could determine the combination of humor and threat intensity that would result in optimal message effectiveness.

In the case of issues relevant to PSAs, those who consider the issue to be highly critical and personally relevant may already be complying with the suggestions given in the advertisement. In that sense, it would be efficient and most impactful to target the individuals who are low in issue involvement and low in attitudinal or behavioral convictions related to the issue. Through Study 2 and 3, it was found that a low threat intensity message through a non-humorous approach increases persuasion and does not distract from central arguments for this
group. However, what may bring the greatest results for low involvement individuals is to integrate humor with high intensity threat, where the buffer effects of humor can increase acceptance of the substantive threat information.

This is not to say that high involvement individuals should be neglected in the process. There will be individuals who are high in issue involvement but who do not have the knowledge or have not had the chance to take action. These individuals can certainly benefit from information given in PSAs. For this group, a combination of low threat and humor or high threat information without humor is likely to bring positive results, with the latter being more effective. In the case of brand advertising as in Study 3, if the product is a general consumer product, all individuals, including both the low and high involvement individuals, will be potential consumers to target. Knowing where your key target stands on the issue would help planners in deciding which route to take in terms of humor and threat information. In terms of special interest products that may be pertinent to a more limited number of people (e.g., medication for asthma), consumers’ involvement with the issue will be high. Therefore, portraying the gravity of the situation with high threat intensity information without the use of humor to preserve the seriousness should be effective and appropriate. A more general consumer product that can be applicable to everyone but is not considered by all to be a highly critical issue (e.g., travel insurance) would benefit more from providing lower levels of threat intensity without the distraction of humor or increasing threat intensity but with the buffering effect of humor.

This research contributed to both the threat and humor persuasion literature in that it observed the responses and boundary conditions in which persuasion effects were examined for humorous threat persuasion messages. Variables representing indicators of trait involvement (i.e., issue involvement and past experience) were recognized as an important factor in interpreting
humorous threat persuasion results. It also yielded practical implications as to which combination of threat intensity and humor may work best for audiences of different involvement levels.

**Limitations and Future Recommendations**

There are some limitations in the current research that could lead to opportunities for future research. From Study 1, first, the emotional and cognitive responses most often recognized as significant determinants of risk and humor persuasion messages were measured and compared between the message conditions. A further step to take would be to determine the extent to which these responses influence message persuasion through regression, path analysis, or structural equation models. This would allow assessment of the relative impact of the emotional and cognitive determinants on message persuasion between message conditions. Second, the current research compared the results between the non-humorous and humorous conditions of threat persuasion messages. Thus, although the non-humorous condition could be labeled as a pure threat appeal message, the humorous condition could not represent a pure humor appeal condition. Rather, the humor condition measured the effects of a *humorous reappraisal* of threat information. The effects of humor in the presence of threat would be different than the effects of humor as a stand-alone message strategy. Employing a pure humor strategy could increase the difference in responses between the non-humorous and humorous conditions, but also would elicit different types of responses during the process (e.g., perceived threat, fear, sadness responses would be next to non-existent for the pure humor condition). The effects and processing of pure humor appeals in PSAs have not been investigated to date and should be the topic of future inquiry. Especially, as the pure humor message will lack substantive content when
communicating threat-associated issues, comparing the effectiveness between a pure humor message and a humorous threat message will present useful findings as to which should be utilized in practice. Third, there may be individual differences in the receptivity to threat or humor appeals. Need for humor (NFH) (Cline, Altsech, and Kellaris 2003), need for cognition (NFC) (Zhang 1996), and the degree to which an individual uses humor to cope with stress have been recognized as individual trait factors that may influence persuasion of humorous messages. Traits such as intolerance for uncertainty (Carleton, Norton, and Asmundson 2007) and personal relevance to the threatening topic may have effects on the individual’s processing of risk messages. Incorporating these individual traits in further research designs could bring about mean difference patterns between non-humorous and humorous threat messages that are similar or different than the ones found in the current research.

Study 2 also has several limitations that need to be considered before generalizing the findings. First, out of the combination of factors that were discussed to build the premise for the differential humor responses between the involvement groups (i.e., difference of valence in cognitions and emotions), only perceived threat and fear were observed and tested. Future studies should incorporate other possible cognitive and emotional factors that may inherently differ between the low and high issue involvement groups (e.g., tolerance for threat, appreciation for humor, anger, contentment). Second, Study 2 found global environmentalism as a significant covariate. Since attitude and behavior toward environmental issues are likely to be shaped by diverse factors (e.g., social norms, personal norms, environmental knowledge, locus of control), other covariates may exist, which may enrich the results when incorporated. Third, people’s inclinations to conform to socially desirable behaviors do not form overnight. Thus, in observing message effects, especially for behavioral intentions, stronger differential humor effects between
involvement groups could surface if responses are measured some time after exposure or multiple exposures are given over time. In fact, studies have observed sleeper effects of humor in the past, where positive humor effects on message persuasion increased over time (Nabi, Moyer-Gusée, and Byrne 2007). The memorable nature of the humor condition was posited to instigate more elaboration as time passes, increasing the message’s persuasive effect. These effects could be observed especially for low involvement individuals, whom are more likely to be persuaded by the humorous elements.

The limitations and the future research ideas that stem from those limitations for Study 3 also need to be acknowledged. First, hypotheses were made on the proposition that depending on the situations, the role of humor could vary from a distraction, a buffer, or an intriguing puzzle. Future studies could incorporate measures of distraction, buffer, and intrigue to directly test for these propositions. Incorporating them in a mediation analysis or a path analysis would allow us to see their significance as mediators between humorous threat persuasion and message persuasiveness for individuals with different involvement levels. Second, as with Study 2, involvement was measured. Future studies could manipulate involvement through either referencing or priming to control for all other confounding variables. Also, other variables that would be highly correlated with involvement, such as knowledge of problem and solution, awareness of threat, past behavioral convictions, and past purchase of product could be used as involvement variables. If current results could be replicated with these other involvement variables, it would give greater evidence to the proposition that involvement is an important factor in explaining responses to humorous threat persuasion.

Across all three studies, student populations were used as samples. There is no reason to believe that the responses to the current issues tested (i.e., environmental issues and risks of
sunburn) would differ between the student population and the general population. But to increase generalizability of the findings, replication of the current study should be done with a general population sample. Also, the current studies focused on environmental issues and risks of sunburn. As long as the situation is not deemed inappropriate for using humor (e.g., making light of the situation to cancer patients, joking in the midst of an occurrence of a natural disaster), similar results could be observed for using humor across other threatening issues (e.g., drunk driving, identity theft, etc.). Finally, media formats other than print that was used in the current studies can be considered in future research. For example, humor and entertainment facets of messages play a significant role in the success of viral marketing efforts online. The effects of using humor in online threat persuasion campaigns would be a novel and timely research area to pursue. Further investigation on this topic with these issues in mind would not only help us better understand the humor effects in threat persuasion and for whom such strategies may be most effective, but also bring about important findings to theorists and advertising campaign managers alike.
REFERENCES


9 square miles of forest disappears every minute. Deforestation is a significant cause of climate change.

Help conserve trees by conserving paper. Never buy disposable paper cups or paper plates.

Project Green Council
9 square miles of forest disappears every minute. Deforestation is a significant cause of climate change.

Help conserve trees by conserving paper. Never buy disposable paper cups or paper plates.

FIGURE 7
Humor Threat Persuasion PSA
You don’t have to go to extremes to protect your skin.
Simply use **Bio Sunscreen** before going outside.

**Bio Sunscreen** for Sun Protection

Protect yourself from sun damage with **Bio Suncreen**.

FIGURE 8
Non-Humor and Low Threat Intensity Brand Ad
Exposure to ultraviolet radiation can cause sunburns, which cause flaking and itching.

You don’t have to go to extremes to protect your skin.

Simply use **Bio Sunscreen** before going outside.

**Bio Sunscreen** for Sun Protection

Protect yourself from sun damage with **Bio Sunscreen**.
Exposure to ultraviolet radiation leads to increased rates of skin cancers, which cause severe disfigurement, seizures, and death.

You don’t have to go to extremes to protect your skin. Simply use **Bio Sunscreen** before going outside.

![Bio Sunscreen](image)

**Bio Sunscreen** for Sun Protection

Protect yourself from sun damage with **Bio Sunscreen**.
FIGURE 11
Humor and Low Threat Intensity Brand Ad

You don’t have to go to extremes to protect your skin. (Like wearing body suits)

Simply use **Bio Sunscreen** before going outside.

Body Suit for Sun Protection  Bio Sunscreen for Sun Protection

Protect yourself from sun damage with **Bio Sunscreen**.
Exposure to ultraviolet radiation can cause sunburns, which cause flaking and itching.

You don’t have to go to extremes to protect your skin. (Like wearing body suits)

Simply use **Bio Sunscreen** before going outside.

[Image of body suit and Bio Sunscreen bottle]

Body Suit for Sun Protection  
**Bio Sunscreen** for Sun Protection

Protect yourself from sun damage with **Bio Sunscreen**.
Exposure to ultraviolet radiation leads to increased rates of skin cancers, which cause severe disfigurement, seizures, and death.

You don’t have to go to extremes to protect your skin. (Like wearing body suits)

Simply use **Bio Sunscreen** before going outside.

Body Suit for Sun Protection

**Bio Sunscreen** for Sun Protection

Protect yourself from sun damage with **Bio Sunscreen**.

**FIGURE 13**
*Humor and High Threat Intensity Brand Ad*
APPENDIX C: STUDY 1 QUESTIONNAIRE

Welcome to a study conducted by Hye Jin Yoon and Spencer Tinkham, at the Grady College of Journalism and Mass Communication. The purpose of this study is to examine the effects of a given advertising.

Please take a look at the public service advertisement below. Go onto the next page once you are done.

Threat Persuasion Stimulus Placed Here

Now answer the following questions based on the public service advertisement you just saw.

1. Please indicate the extent to which you agree with the following statements with the ratings given.

The advertisement that I just saw was…

<table>
<thead>
<tr>
<th>Not funny</th>
<th>Funny</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not amusing</td>
<td>Amusing</td>
</tr>
<tr>
<td>Not entertaining</td>
<td>Entertaining</td>
</tr>
<tr>
<td>Not humorous</td>
<td>Humorous</td>
</tr>
</tbody>
</table>

2. Please indicate how the ad you just saw made you feel by rating the statements given below.

a. I felt surprised while reading the message.
   Not at all _____:_____:_____:_____:_____:_____:_____:____: Very much

b. I felt fear while reading the message.
   Not at all _____:_____:_____:_____:_____:_____:_____:____: Very much

c. I felt shameful while reading the message.
   Not at all _____:_____:_____:_____:_____:_____:_____:____: Very much

d. I felt sad while reading the message.
   Not at all _____:_____:_____:_____:_____:_____:_____:____: Very much

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e. I felt happy while reading the message.
Not at all  ______:_____:_____:_____:_____:_____:_____: Very much
f. I felt playful while reading the message.
Not at all  ______:_____:_____:_____:_____:_____:_____: Very much

3. Please indicate the extent to which you agree with the following statements with the ratings given.

I believe forest destructions described in the ad are very severe problems.
Strongly disagree  ______:_____:_____:_____:_____:_____:_____: Strongly agree
I feel that the forest destructions described in the ad are likely to happen.
Strongly disagree  ______:_____:_____:_____:_____:_____:_____: Strongly agree
The ad’s suggestion of not buying paper cups or paper plates will reduce the likelihood of the forest destructions.
Strongly disagree  ______:_____:_____:_____:_____:_____:_____: Strongly agree
I feel confident that I will be able to refrain from buying paper cups or paper plates.
Strongly disagree  ______:_____:_____:_____:_____:_____:_____: Strongly agree

4. With the given scales, please tell us what you thought about not buying disposable paper cups or paper plates?

Bad  ______:_____:_____:_____:_____:_____:_____: Good
Undesirable  ______:_____:_____:_____:_____:_____:_____: Desirable
Unfavorable  ______:_____:_____:_____:_____:_____:_____: Favorable

5. How likely would you be doing the following?

How likely is it that you will refrain from buying disposable paper cups or paper plates in the near future?
Very unlikely  ______:_____:_____:_____:_____:_____:_____: Very likely
How likely is it that you will refrain from buying disposable paper cups or paper plates every time?
Very unlikely  ______:_____:_____:_____:_____:_____:_____: Very likely
How interested are you in learning more about the different ways you can conserve paper?
Not at all  ______:_____:_____:_____:_____:_____:_____: Very much
6. When I first read about forest destructions, my first instinct was to...

- Not think further about deforestations: _____:_____:_____:_____:_____:_____:_____  
  - Think further about forest deforestations: _____:_____:_____:_____:_____:_____:_____  
- Not think about the ways that can prevent deforestations: _____:_____:_____:_____:_____:_____:_____  
  - Think about ways that can prevent deforestations: _____:_____:_____:_____:_____:_____:_____  

7. What is the extent to which you thought the message was...

- Overblown in any way? Not at all: _____:_____:_____:_____:_____:_____:_____ Very much:  
- Exaggerated in any way? Not at all: _____:_____:_____:_____:_____:_____:_____ Very much:  
- Overstated in any way? Not at all: _____:_____:_____:_____:_____:_____:_____ Very much:  

8. Did you feel that the message was...

- Misleading in any way? Not at all: _____:_____:_____:_____:_____:_____:_____ Very much:  
- Manipulative in any way? Not at all: _____:_____:_____:_____:_____:_____:_____ Very much:  
- Distorted in any way? Not at all: _____:_____:_____:_____:_____:_____:_____ Very much:  

9. What is your gender?  
- Male:  
- Female:
Welcome to a study conducted by Hye Jin Yoon and Spencer Tinkham, at the Grady College of Journalism and Mass Communication. The purpose of this study is to examine the effects of a given advertising.

We would like to ask your opinion about some issues. Please read the instructions below and answer the questions.

1. Please indicate your opinion on the issue of deforestation (forest destructions) by rating the statements below.

How critical are your thoughts toward the issue of deforestation?
Not at all critical _____:_____:_____:_____:_____:_____:_____ Very critical

Does the issue of deforestation have personal relevance for you?
Not at all _____:_____:_____:_____:_____:_____:_____ Very much

How personally involving do you find the issue of deforestation?
Not at all _____:_____:_____:_____:_____:_____:_____ Very much

Please take a look at the public service advertisement below. Go onto the next page once you are done.

Threat Persuasion Stimulus Placed Here

Now answer the following questions based on the public service advertisement you just saw.

2. Please write down as completely as possible, everything that went through your mind as you were viewing the advertisement. Please give yourself three minutes to finish this task.
3. With the given scales, please tell us what you thought about not buying disposable paper cups or paper plates?

<table>
<thead>
<tr>
<th>Rating</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bad</td>
<td></td>
</tr>
<tr>
<td>Undesirable</td>
<td></td>
</tr>
<tr>
<td>Unfavorable</td>
<td></td>
</tr>
<tr>
<td>Good</td>
<td></td>
</tr>
<tr>
<td>Desirable</td>
<td></td>
</tr>
<tr>
<td>Favorable</td>
<td></td>
</tr>
</tbody>
</table>

4. Please indicate the extent to which you agree with the following statements with the ratings given.

I tried not to think about the possibility of the destruction of forests happening
Strongly disagree       _____:_____:_____:_____:_____:_____:_____       Strongly agree

I believe the problem of forest destructions will go away eventually
Strongly disagree       _____:_____:_____:_____:_____:_____:_____       Strongly agree

If we are destined to face forest destructions, there is really nothing we can do about it
Strongly disagree       _____:_____:_____:_____:_____:_____:_____       Strongly agree

Given what I now know about forest destructions, I think it may be useless to try to save it
Strongly disagree       _____:_____:_____:_____:_____:_____:_____       Strongly agree

5. How likely would you be doing the following?

How likely is it that you will refrain from buying disposable paper cups or paper plates in the near future?
Very unlikely       _____:_____:_____:_____:_____:_____:_____       Very likely

How likely is it that you will refrain from buying disposable paper cups or paper plates every time?
Very unlikely       _____:_____:_____:_____:_____:_____:_____       Very likely

How interested are you in learning more about the different ways you can conserve paper?
Not at all       _____:_____:_____:_____:_____:_____:_____       Very much

6. Please indicate the extent to which you agree with the following statements with the ratings given.

The advertisement that I just saw was…
Not funny       _____:_____:_____:_____:_____:_____:_____       Funny
Not amusing     _____:_____:_____:_____:_____:_____:_____       Amusing
Not entertaining _____:_____:_____:_____:_____:_____:_____       Entertaining
Not humorous   _____:_____:_____:_____:_____:_____:_____       Humorous
7. Please indicate the extent to which you agree with the following statements with the ratings given.

I believe forest destructions described in the ad are very severe problems.
Strongly disagree   _____:_____:_____:_____:_____:_____:_____   Strongly agree

I feel that the forest destructions described in the ad are likely to happen.
Strongly disagree   _____:_____:_____:_____:_____:_____:_____   Strongly agree

8. Please indicate how the ad you just saw made you feel by rating the statements given below.

a. I felt fearful while reading the message.
Not at all   _____:_____:_____:_____:_____:_____:_____   Very much

b. I felt afraid while reading the message.
Not at all   _____:_____:_____:_____:_____:_____:_____   Very much

c. I felt scared while reading the message.
Not at all   _____:_____:_____:_____:_____:_____:_____   Very much

9. Please indicate the extent to which you agree with the following statements with the ratings given.

a. Nature is valuable for its own sake.
Strongly disagree   _____:_____:_____:_____:_____:_____:_____   Strongly agree

b. It makes me sad to see natural environments destroyed.
Strongly disagree   _____:_____:_____:_____:_____:_____:_____   Strongly agree

c. One of the worst things about overpopulation is that many natural areas are getting destroyed for development.
Strongly disagree   _____:_____:_____:_____:_____:_____:_____   Strongly agree

d. Too much emphasis has been placed on conservation.
Strongly disagree   _____:_____:_____:_____:_____:_____:_____   Strongly agree

e. I do not think the problem of depletion of natural resources is as bad as many people make it out to be.
Strongly disagree   _____:_____:_____:_____:_____:_____:_____   Strongly agree

f. I find it hard to get too concerned about environmental issues.
Strongly disagree   _____:_____:_____:_____:_____:_____:_____   Strongly agree
10. What is your gender?

Male  _____
Female _____
APPENDIX E: STUDY 3 QUESTIONNAIRE

Welcome to a study conducted by Hye Jin Yoon and Spencer Tinkham, at the Grady College of Journalism and Mass Communication. The purpose of this study is to examine the effects of a given advertising.

We would like to ask your opinion about the following issue. Please read the instructions below and answer the questions.

1. For each of the statements below, please indicate to what extent the statement is characteristic of you.

I have suffered from sun damage before.

<table>
<thead>
<tr>
<th>Never or almost never true</th>
<th>Always or almost always true</th>
</tr>
</thead>
</table>

People around me have suffered from sun damage before.

<table>
<thead>
<tr>
<th>Never or almost never true</th>
<th>Always or almost always true</th>
</tr>
</thead>
</table>

Please take a look at the public service advertisement below. Go onto the next page once you are done.

Threat Persuasion Stimulus Placed Here

Now answer the following questions based on the public service advertisement you just saw.

2. Please indicate your feelings about the advertisement you just saw by rating the scales below.

<table>
<thead>
<tr>
<th>Bad</th>
<th>Dislike</th>
<th>Uninteresting</th>
<th>Irritating</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Good</th>
<th>Like</th>
<th>Interesting</th>
<th>Not irritating</th>
</tr>
</thead>
</table>
3. Please indicate your feelings about the brand in the advertisement by rating the scales below.

Bio Sunscreen looks like a bad brand to me
I don’t like Bio Sunscreen
The brand Bio Sunscreen is undesirable

Bio Sunscreen looks like a good brand to me
I like Bio Sunscreen
The brand Bio Sunscreen is desirable

4. How likely would you purchase Bio Sunscreen featured in the advertisement?

Unlikely
Improbable
Uncertain

Likely
Probable
Certain

5. Please indicate the extent to which you agree with the following statements with the ratings given.

The advertisement that I just saw was…

Not funny
Not amusing
Not entertaining
Not humorous

Funny
Amusing
Entertaining
Humorous

6. Please indicate how the ad you just saw made you feel by rating the statements given below.

a. I felt fearful while reading the message.
Not at all

Very much

b. I felt afraid while reading the message.
Not at all

Very much

c. I felt scared while reading the message.
Not at all

Very much
7. Please indicate how the ad you just saw made you feel by rating the statements given below.

a. I felt happy while reading the message.
   Not at all _____:_____:_____:_____:_____:_____:_____ Very much

b. I felt cheerful while reading the message.
   Not at all _____:_____:_____:_____:_____:_____:_____ Very much

c. I felt joyful while reading the message.
   Not at all _____:_____:_____:_____:_____:_____:_____ Very much

8. Please indicate the extent to which you agree with the following statements with the ratings given.

I believe sun damage to the skin is a very severe problem.
   Strongly disagree _____:_____:_____:_____:_____:_____:_____ Strongly agree

I feel that sun damage to the skin is likely to happen.
   Strongly disagree _____:_____:_____:_____:_____:_____:_____ Strongly agree