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COMBATING THE DEVELOPMENT OF NONCOMMUNICABLE DISEASE BY ADDRESSING HEALTH-NUTRITION RELATED COMMERCIAL ADVERTISING CLAIMS: INVESTIGATING THE IMPACT OF REGULATORY FIT ON THE INOCULATION PROCESS

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A DISSERTATION APPROVED FOR THE
DEPARTMENT OF COMMUNICATION

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Dedication

This manuscript is dedicated to my grandfather James Arnold Mason and grandmother, Savannah Lou Mason, whom I love so dearly.

James & Savannah, never forget, we did this together.

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Abstract

Currently, non-communicable diseases (NCDs) such as cardiovascular diseases, cancers, diabetes and chronic respiratory diseases are a primary threat to human health and development. International and domestic health organizations have called attention to this emerging health care crisis within the United States. This research suggests a systemic, message-based inoculation strategy presents empirically demonstrable techniques useful in stemming the rising rates of NCDs in the U.S. population, by helping to confer a more *healthy resistance* to puffed up health and nutrition related (HNR**)** advertising content claims. This research advances inoculation theory by bolstering the force of refutational preemption through good regulatory fit (Higgins, 1997; 1998).

Chapter 1

Non-communicable Diseases and Commercial HNR Advertising

Our modern era faces enormous challenges related to public health infrastructures resulting from an increased population density, worldwide technological threats, antimicrobial resistance and emerging infectous diseases. Due to a growing interdependence and enmeshment among global publics and organizations we now see industrial, human made and various other health risks and crises accumulating in shorter spans with larger impacts. The U.S. health domain today currently reveals not only an emerging risk, but a crisis in the national healthcare system resulting from the rising rates of non-communicable diseases in the U.S. population (McClaughlyn, 2010).

Currently, non-communicable diseases (NCDs) such as cardiovascular diseases, cancers, diabetes and chronic respiratory diseases are a primary threat to human health and development. Lopez et al. (2006) argue these diseases are reaching epidemic proportions worldwide, and the assistant director general for the non-communicable diseases and mental health division of the World Health Organization asserts these four diseases are the world's biggest killers, causing an estimated 35 million deaths, 60% of all deaths globally (Alwan, 2008).

NCDs affect people of all ages, from all social classes and all nationalities. Comparative cross-cultural studies have found that people around the world are concerned about health risks (Rohrmann & Renn, 2000). Within the U.S., individuals with one or more chronic conditions account for 72% of physician visits, 76% of hospital admissions, 80% of total hospital stays, 88% of prescriptions and 96% of home healthcare visits (Wilkenson & Lynn, 2006). What is most troubling is these diseases are preventable. Up to 80% of heart

disease, stroke and type-2 diabetes, along with over a third of cancers could be prevented by eliminating risk factors such as tobacco use, unhealthy diet, physical inactivity and the harmful use of alcohol (Alwan, 2008).

International and domestic agencies have invested time, money and research attention toward identifying the contributable causes and developing intervention methods to prevent this rising NCD epidemic. In 2008, the World Health Organization (WHO) developed an action plan designed to prevent the advancement of NCDs, as well as assist those already affected by the lifelong illnesses. The action plan sets out objectives designed for implementation between the six-year period of 2008-2013 and provides the international community with a roadmap to "establish and strengthen initiatives for the surveillance, prevention and management of NCDs" (Alwan, 2008, p.5).

When confronting the development of NCDs, it is necessary to accept that the problem is broader than the preventative solutions of literacy and education can alone address. NCDs do not result from a one-time only impulse decision, but rather from the progressive adoption of lifestyle practices. The WHO Action Plan Objective 2 seeks to "establish new, or strengthen existing, policies, and plans for the prevention and control of non-communicable diseases" (p. 15). One way to impede the rising rates of NCDs in the U.S. is to counter the false and unsubstantiated claims of U.S. commercial food advertisers that may be leading to a host of unhealthy behaviors associated with a range of NCDs.

Federal regulatory agencies have essentially neglected this problem. Established 1914, the Federal Trade Commission (FTC) is one of the longest held agencies of the federal government. Congress in 1938 granted the FTC the power to prohibit deceptive acts or practices. This legislation empowers the FTC to regulate food advertising. Benforado, Hanson,

and Yosifon (2004) report that in response to congressional inquiry, the FTC in 1983, produced a "Policy Statement on Deception." This statement deemed that for deception to occur there had to be a representation, omission or practice that is more, rather than less, likely to mislead a consumer. Additionally, such an assertion must represent a material likelihood that would affect a consumers' conduct or decision in relation to a product or service.

To avoid possible deception violations from regulatory agencies, food marketers have responded through product labeling and advertising claims meant to resemble full disclosure of relevant information, ranging from a product's fat content to claims that consumption may reduce likelihood for disease. Lohmann and Kant's (1998) review of commercial food advertising found many products promoted were in fact *energy-dense, nutrition-poor* foods of questionable benefits. Furthermore, Liebman (1999) acknowledges some of these health messages are designed to deceive because they do not provide a full disclosure of the scientific evidence.

Despite the level of disclosure, additional research recognizes the difficulty for consumers to process health-nutrition related (HNR) information (Ford et al., 1996; Jacoby, Chesnut, & Silberman, 1977; Moorman, 1999). Much of the marketing research into health and nutrition content claims has focused on labels and packaging (Mitra et al., 1999; Roe, Levy, & Derby, 1999). Herein lies the problem, as Benforado, Hanson and Yosifon (2004) maintain, the advertising industry has evaded responsibility for the growing obesity epidemic by maintaining to regulators and consumers that consumer behavior is driving the food market, not the advertising representations of food items. As a result, the industry claims to be merely satisfying consumer desires.

This policy illuminates the conundrum found in characterizing responsibility and/or blame at either the individual or collective level, when considering the exponential rise in non-communicable diseases. The proposed research seeks to examine the communicated content of commercial food advertisers to explore the efficacy of certain inoculation techniques that may be useful in countering the rising rates of preventable, non-communicable disease.

Background

Guidelines for governing HNR claims have undergone several transitions since the 1970's. Prior to 1983, diet-disease claims were banned by the FTC from labels and advertisements. However, between 1983-1990, diet-disease claims were permitted when given additional consideration based on the Policy Statement on Deception (Ippolito & Mathios, 1994). Nevertheless, contemporary advertisers frequently persist in using both absolute and comparative terms within their HNR claims. Comparative terminology shows the inferiority of the competition while building value in the advertised brand. Absolute nutrition content claims include terms such as *fat free, reduced sodium, high in fiber*, and an *excellent source of calcium*. Another type of HNR claim, referred to as a general nutrition claim, uses nonspecific terms such as *wholesome* and *nutritious* to imply that consumption is good for the consumer.

In 1994 the Dietary Supplement Health and Education Act recognized a new category of advertising referred to as a structure-function claim. Structure-function claims indicate how a product may impact the structure or function of the body, but they do not mention or imply a relationship with disease (e.g., *calcium builds strong bones*) (FDA, 2001). Because food marketers can forego the federal health claim approval process required for standard health claims, Heller (2001) asserted structure-function claims may represent the largest loophole in the U.S. regulatory scheme. However, Yosifon (2006) argues the problems existing today do

not originate at the regulatory level, but rather at the interpretative level of what is or is not likely to affect consumer conduct.

Yosifon (2006) believes an unregulated, so-called, *doctrine of puffery* may be plaguing the regulatory efforts meant to prohibit false or deceptive advertising even though such puffery may not constitute what might normally be recognized technically as deception. Puffery is legally defined as "advertising or sales representations which praise the item to be sold with subjective opinions, superlatives or exaggerations, vaguely and generally with no specific facts" (Kamins & Marks, 1987, p. 6). Puffery may avoid being characterized as deception because of its transparent nature—that is, it generally contains information upon which "no reasonable consumer" would rely. Examples of such statements are *America's Favorite Pasta* or *Better Ingredients. Better Pizza*. Puffery encapsulates an exaggerated form of advertising which promotes the product with external affective issues such as vitality, fun and excitement (Hoffman, 2006). Because of the exclusionary acceptance of puffery as outside of the deception policy, many marketing agencies have begun to rely heavily on nothing but puffery. The equation of concepts such as fun, vitality and magic with unhealthy food may contribute to skewing the perceptions of the public toward the nutritional quality of the food, as well as minimize potentially negative outcomes resulting from consumption.

Beyond the absolute, general, structure/function content claims, as well as the ubiquitous use of puffery throughout food marketing practices, the term *healthy* remains a reserved, special HNR claim that has merited additional scrutiny from the FDA, because as Golonder (1993) notes, *healthy* is a very useful advertising term. For a product to be classified as healthy, FDA guidelines require it to have a low total fat content, as well as low levels of saturated fat, sodium, and cholesterol. On face value, products such as multigrain breads, fat-

free yogurts, and all-natural granolas appear to be healthy, but as Zinczenko and Goulding (2009) report, these products may not in fact be all that low in saturated fat, sodium, or cholesterol.

The present proposal holds the use of a message-based inoculation strategy that may present empirically demonstrable techniques useful in stemming the rising rates of NCDs in the U.S., by helping to confer a more *healthy resistance* to puffed up HNR advertising content claims. Forty years of inoculation research in the field of communication provides ample evidence for the effectiveness of such a strategy in addressing the most common NCD contributors—smoking (Pfau, Van Bockern & Kang, 1992) and alcohol abuse (Godbold, 1998). While early inoculation research focused on validating the construct, contemporary research provides overwhelming evidence the inoculation process works in a variety of applied areas including: commercial advertising (Pfau, 1992), political campaign communication (Pfau & Burgoon, 1998; Pfau, Kenski, Nitz & Sorenson, 1990), and of particular importance to the present research, health risk behaviors such as adolescent alcohol consumption (Godbold, 1998) and smoking prevention (Pfau & Van Bockern, 1994; Pfau, Van Bockern & Kang, 1992).

The Emerging Adult Population

Understanding the relationship between emerging adult (18-25 year old, Arnett, 2004; 2007) college students and nutrition is a complex issue. Within this population, ACHA-NCHA (2006) found only 7.3% reported eating the recommended five or more servings of fruits and vegetables each day. Given that entrance into college is an unstable and transitory period, stress, anxiety, homesickness, and sadness can trigger unhealthy food choices. Furthermore, one or all of these can encourage the development of poor food selection practices (Arnett, 2007; Schulenberg & Zarrett, 2006; Tanner et al., 2007).

Nicklas et al. (2003) found poor dietary choices including sweets, snacks and take-away foods have been associated with higher body mass index (BMI) rates in adults, children and adolescents. Missing breakfast and poor nutritional quality of breakfasts have also been associated with high BMI rates (Ruxton & Kirk,1997; Gibson, 1995). McIntyre (1993) found links between higher BMI rates and obesity, a known contributor to the development of NCDs, particularly among emerging adults. Driskell, Kim and Goebel (2005) found the top predictors of college students' food selections are convenience, taste and cost. They suggest these modes of satisfying immediate needs are likely related to unhealthy food intake. Pollard et al. (1998) support this conclusion, identifying price concerns as a leading predictor of food selection practices. Based upon the above summation of the public health crisis currently impacting emerging adult populations, the lack of enforcement at the regulatory level, and arguably deceptive advertising practices concerning HNR claims impacting the food selection practices of this population, the below is a synthesized overview of the guiding theoretical framework of risk communication meant to clarify the role of the message strategy applied in this research.

Risk Communication in the Health Context

Risks, in general, are evaluated based on their likelihood of occurance and the magnitude of their damage. Renn (2009) conceptualized and segmented the functionality of effective risk communication into four widely-accepted, categories which include: enlightenment, trust-building, participative and behavioral change functions. The enlightenment function includes risks which relate to human health and development, and attempt to foster greater understanding of the risk among different stakeholder groups and affiliations. The trust-building function of risk communication focuses on promoting trust and credibility toward the institutions which are charged with managing the risk, while the

participative function focuses on facilitating a dialogue characterized by the democratic, shared management and regulation of the risk. Finally, the behavioral change function of risk communication pinpoints specific behaviors which, if altered, may reduce the negative consequences upon life and personal health, as a result of an individual's behavior. This research integrates a behavioral change perspective of risk functionality as a public health threat reduction strategy.

Palenchar (2009) notes, "It has been nearly 20 years since risk communication was identified as a new and emerging area of public health communication research and considered to be one of the fastest growing parts of public health literature" (p.35). Evolving somewhat organically, from both risk assessment and risk perception lines of research from management and cognitive psychology, risk communication, at its inception, began with a linear approach to understanding the overall role of source and expert credibility. This initial source-message-content-receiver (SMCR) focus posited that *if* publics received credible and clear information regarding the likelihood of a risk, they would in turn alter their behaviors to avoid such risks.

The influence of this paradigm of risk communication is evident in contemporary efforts by the public health arena and demonstrated by a continued reliance on education and literacy campaign efforts directed toward behaviorally changing of a variety of life-style practices (i.e., anti-smoking, safe-sex, recycling, and drug abuse). Yet, the challenge posed to risk communicators is how to appropriately express concern and realistic understandings of risks at early stages, without "producing unnecessary fear or inappropriate responses" (Seeger, Reynolds, & Sellnow, 2009, p. 502). The continued progression of NCD development in the U.S. population, against the backdrop of decades of these types of message strategies, supports the inappropriateness of education and literacy alone, to address this public health threat.

Ideally, rather than engaging in reactive public health awareness campaigns, commonly associated with public health education and literacy efforts, to address the rising rates of non-communicable disease in the U.S. population, a proactive strategy deployed in advance, as a risk prevention measure, geared at reducing the likelihood of risk occurrence should be considered. The present investigation holds that inoculation is a viable strategy which can impact common life-style choices related to food selection. As a result, this investigation will focus on applying inoculation as a risk-reduction strategy to address the public health threat posed by the emergence of NCD's through the preservation of health-conscious attitudes held by the U.S. emerging adult population.

The present investigation is particularly warranted, given the international interest in NCD prevention strategies, and current persuasive commercial advertising practices focused on a population exhibiting rising rates of BMI, a known contributor to NCD development. There remains a goal for inoculation researchers to explore methods to enhance treatment effectiveness and provide insight for the good of public health through resistance to the ubiquitous nature of commercial food advertising claims. The research reported below was designed to determine the efficacy of inoculation in this specific health context concerning HNR advertising claims, with the ultimate goal of boosting the efficacy of the refutational preemption component of the inoculation process through the beneficial effects of good regulatory fit (Higgins, 1997; 1998).

Chapter 2

The Resistance Paradigm

The roots of inoculation research are grounded in Lumsdaine and Janis' (1953) work on message-sidedness in the early 1950's, which concluded greater resistance is conferred against counter-attitudinal messages when both sides of an issue are presented (i.e., both pro-attitudinal and counter-attitudinal)—and particularly when counter-attitudinal arguments are accompanied by refutations.

Drawing from the conclusions of this early work, McGuire (1961a; 1961b; McGuire & Papageorgis, 1961; 1962) began developing a formal theory to explain and test the above concepts. The resulting product is inoculation theory. The biological analogy of inoculation theory asserts that, like a medical inoculation treatment, once a weak form of a counter-attitudinal attack message is introduced to a message target, the target's cognitive system will move to overcome the foreign attack, thereby bolstering systemic immunity in preparation for a time when an actual attack might be encountered.

In the 1960's, as the theory was being framed and developed, McGuire wanted to avoid criticisms associated with selective exposure. Realizing one cannot protect people from forced exposure—and considering the notion that selective exposure would suggest people do not avoid, but rather selectively expose themselves to certain situations—McGuire based his conception of inoculation theory on the function of what he termed *cultural truisms*. These truisms are essentially beliefs so widely shared within one's social milieu, one would expect they should seldom if ever come under attack, and thus likely doubt an attack even to be possible (McGuire, 1964).

Truisms. Until the late 1980's the use of cultural truisms as a boundary condition in inoculation research was relatively standard. Pryor and Steinfatt (1978) argued for the expansion of these conditions asserting that the beliefs in question must not have been defended against a particular argument, *not* that they have never been exposed to counter-argumentation. Although their study failed to support the idea inoculation would work with middle- or high ranged beliefs, their rationale of a "*particular*" virus did serve to spawn research outside of McGuire's notion of medical cultural truisms. One key provision in inoculation research often overlooked—even to this day—is the requirement for a *pre-existing attitude* targeted for attack (and hence suitable for inoculation) to be in place.

Thus, although inoculation need not be limited to cultural truisms, a successful inoculation treatment can only affect (i.e., strengthen) pro-attitudinal structures already held by the target. An understanding of this basic requirement has opened the door and expanded the application of inoculation theory into a wide range of contemporary applied contexts with vitally important issues such as interpersonal and mass communication (Burgoon et al., 1976, Burgoon & Chase, 1973, Burgoon, Cohen, Miller & Montgomery, 1978), commercial advertising (Burgoon, Pfau & Birk, 1995; Pfau, 1992; Wan & Pfau, 2004), political campaigns (Pfau & Burgoon, 1988; Pfau, Kenski, Nitz, & Sorenson, 1990; Pfau, Park, Holbert, & Cho, 2001), and health campaigns (Godbold & Pfau, 2000; Pfau, 1995; Pfau & VanBockern, 1994; Pfau, VanBockern, & Kang 1998; Pfau & Szabo, 2001).

Opposed to other influence theories—or theories dealing with resistance to influence—addressing *why* individuals respond to persuasive messages based on situational states and/or psychological traits (e.g., the ELM, HSM, or psychological reactance theory), inoculation theory centers on the process of *how* resistance is conferred. The biomedical analogy suggests

that just as an inoculation shot to the body provides immunity against infection, a persuasive inoculation treatment builds resistance to counter-attitudinal influence. Initial inoculation studies posited the inoculation process should work through the interrelated mechanisms of threat and counter-argumentation, and this key assumption has been confirmed empirically in a variety of laboratory settings (McGuire, 1961a, 1961b, 1962, 1964, 1966, McGuire & Papageorgis, 1961, 1962; Papageorgis & McGuire, 1961, Pfau, Holbert, Zubric, Pasha & Lin, 2000; Pfau et al., 1997a, 2001, 2004, 2005, 2008, 2010).

Threat. Treated as a primitive term in McGuire's early work, the concept of threat was used only for explanatory purposes. As instrumental as threat has been found to be, McGuire and Papageorgis never assessed it in their early research (Pfau et al., 2008; 2010). Treating threat as a primitive term in the early work has been criticized since threat is a prerequisite to inoculation, and has been found to function as a motivational catalyst which compels the bolstering of counter-arguments to defend against an expected attack (Pfau et al., 2010). The role of threat is to provide notice or awareness of an impending attack against pre-existing attitudes and beliefs. This idea of threat as merely "notification" of the vulnerability of a held attitude or belief seems somewhat underdeveloped. And although threat is posited as essentially a motivational trigger, emboldening the target to prepare counter-arguments in anticipation of an attack, it traditionally is associated with small to medium effect sizes ranging from .02-.10 (Pfau, 1997; Pfau et al., 1997; 2010). Burgoon (1976) argued threat is optimal when there is a 50:50 chance of counter-attitudinal exposure. The ability of threat to serve as a motivational catalyst results from the uncertainty surrounding the possibility of attack. Pfau et al. (2010) attempted to enhance threat by increasing the personal significance of the subject

matter but ultimately the manipulation failed. This present investigation employs a traditional threat component with no enhancement.

Refutational Preemption. Inoculation strategies are not simply about providing functional answers for use in responding to specific arguments (Pfau, 1992). When counter-attitudinal information is difficult to counter-argue or refute, even motivated respondents may yield to its influence (Ditto et al., 1998; Petty & Caccioppo, 1986). Thus, beyond demonstrating that a threat to one's attitudes may be imminent, there is the additional need for an inoculation message to raise and provide a functional guide for bolstering counter-argumentation. The purpose of refutational preemption is to answer this challenge, and while threat has been found to foster resistance to persuasion via counter-argumentation, refutational preemption has been found to increase one's arsenal of counterarguments and encourage the practice of its use (Wyer, 1974).

In their seminal work, McGuire and Papageorgis (1961) operationally manipulated counter-argumentation only once, and assessed its output simply by allowing participants five minutes to write down as many arguments as they could to bolster their beliefs. While McGuire asserted counter-argumentation was the active cognitive component of the inoculation process, the measurement instruments used to assess counter-argumentation output were rudimentary and somewhat ineffective in capturing what has since been referred to as the "arsenal of argumentation" (Wyer, 1974).

Threat and refutational preemption have been posited as the basic mechanisms allowing inoculation treatments to confer resistance to counter-attitudinal attacks, and within the context of HNR advertising, threat should be expected to motivate the bolstering of preexisting attitudes against yielding to persuasive commercial advertising, whereas refutational

preemption should provide the rational for conferring resistance to the specific persuasive attacks by priming the process of counter-argumentation. This rationale leads to the following hypothesis:

H1: *Relative to the control (no inoculation) condition, inoculation treatments will: a) generate greater threat; b) foster greater attitude certainty; and c) foster greater attitude strength.*

In McGuire's initial research, he contrasted the effectiveness of supportive and refutational defensive messages, and his results suggested supportive messages do provide reasons for holding certain attitudes; however, their success is dependent upon a person's motivation to generate material capable of bolstering the attitude. Message-sidedness research in persuasion has demonstrated two-sided refutational messages are far superior to two-sided non-refutational messages, or one-sided messages in most situations. Allen and colleagues (1990) support this conclusion with findings suggesting the recognition of oppositional positions contributes to psychological defense, thus ensuring refutational devices are effective.

McGuire explored the effectiveness of refutational same and refutational different (novel) treatments, anticipating the possibility that refutational preemptions may act not only as motivators to generate specific content useful in defending the attitudes subject to attack, but also as generalized defenses in response to threats. Whereas refutational same messages make use of the same content presented in the preemptive treatments as anticipated to appear in subsequent attacks, refutational different messages vary the content between treatment and attack. Somewhat surprisingly, recent research has indicated both refutational same and refutational different message approaches work well, however, for very different reasons (see Lee & Pfau, 1997; Pfau, 1992; Pfau, et al., 2001). The *content* of the message appears to carry

the weight in refutational same messages; however, the *motivation* generated from the initial threat appears to bolster the attitude and serves as the functional mechanism within refutational different (novel) messages (Pfau, Compton, Parker, & An et al., 2004; Pfau & Ivanov, et al., 2005). The classification of messages as either refutational same or refutational different refers to the relationship between treatment and attack. This study employs refutational different messages. Although the credibility of the attacking source will not be derogated in the treatment messages, resistance to the HNR claims will be demonstrated by indicating a less positive attitude toward the attacking source, a reduced reported likelihood of purchasing the product advertised by the attacking source, and higher levels of reported counter-argumentation. The below hypothesis concerns the treatment's impact upon the perceptions of the attacking source, whereby it is expected that:

H2: Relative to the control condition, those who receive an inoculation treatment will demonstrate greater resistance against HNR claims including: a) less positive attitudes toward the attack; b) reduced reported likelihood of purchasing the product; and c) higher levels of counter-argumentation.

Generalized perceived self-efficacy refers to the ability of an individual to respond to stressful situations (Schwarzer & Jerusalem, 1995). A refutational preemption provides an arsenal of arguments while at the same time it cognitively fortifies the target with a ready defense comprised of reasons and justifications for holding the threatened attitude. Therefore, enhanced self-efficacy may be expected as a result of an inoculation pretreatment.

H3: Relative to the control condition, inoculation treatments will enhance perceptions of self-efficacy.

Extant literature indicates inoculation is an intrapersonal process in which threat motivates the preparation of counter-argumentation, while refutational preemption stimulates the defense necessary to maintain and strengthen held attitudes. Recent investigations are redirecting the focus of inoculation research away from the intrapersonal first-order effects toward second-order subsequent interpersonal, word of mouth communication (WOMC) effects. The potential for second-order effects resulting from WOMC filtering through interpersonal networks is "more than a possibility; it is a likelihood," (Compton & Pfau, 2009, p.16).

While inoculation has been found to not only strengthen pre-existing attitudes from counter-attitudinal attack, and impact the likelihood of behavioral intentions, the information associated with refutational preemption has also been found to filter through interpersonal networks, thereby distributing the content and knowledge provided in the refutational preemption to close others via WOMC (Compton & Pfau, 2004a; 2004b). Researchers have advocated for closer scrutiny of the potential interpersonal effects resulting from inoculation (Compton & Pfau, 2009).

Compton and Pfau (2004b) reported subjects who received inoculation treatments were more likely to express intentions to distribute refutational content. This suggests that although threat is a motivational catalyst for building resistance to a potential counter-attitudinal message, inoculation treatments should also motivate subjects to share and distribute their rationale for holding certain attitudes, thus:

H4: Relative to the control condition, those who receive inoculation treatments will be more likely to distribute HNR information contained in the refutational preemption to others through interpersonal networks by intending to: a) speak less positively about the product; and b) speak more negatively about the product.

Chapter 3

Regulatory Orientations: Framing Refutational Preemptions

Regulatory focus theory (RFT, Higgins, 1997; 1998) posits there are two fundamental self-regulatory systems: those dealing with positive outcome focus and those dealing with negative outcome focus. The theory questions the common assumption that humans simply approach pleasure and avoid pain, by positing specific goal-pursuit strategies (eagerness vs. vigilance) as methods to achieve the most optimal fit between goal orientation and effort toward goal attainment. Higgins and colleagues (1998) have demonstrated positive outcome focus and negative outcome focus can be primed to modify motivational orientation processes and induce individuals to seek certain types of information most suitable for a given orientation. This presents the opportunity to integrate the motivational aspects of regulatory orientation into the refutational preemption component of inoculation messages.

Although RFT has been applied to enhance the motivational effects of an optimal fit between persuasive messages structure and targeted goals with the intention of enhancing the effectiveness of persuasive appeals, the present study explores how message framing and regulatory fit may inhibit or augment the refutational preemptive component of an inoculation message by examining the effects of good and bad regulatory fit on message processing and counter-argumentation.

Positive and Negative Outcome Focus.

According to RFT, *eager* goal pursuit means are strategies that either ensure the presence of positive outcomes or ensure against their absence. On the other hand, *vigilant* goal pursuit means are strategies that either ensure the absence of negative outcomes or ensure against their presence (Higgins & Scholer, 2007). The theory indicates individuals in a positive

outcome focus will engage in eager strategic means, whereas individuals in a negative outcome focus orientation will engage in vigilant strategic means. Higgins and Scholer (2007) caution against the fallacious tendency to equate positive outcome focus with the approach of a desired end and negative outcome-focus with avoidance of an undesired end state because positive outcome and negative outcome oriented foci are *both* designed to approach desired and avoid undesired outcomes. For positive outcome-focused individuals, the goal is to achieve the presence of positive outcomes (with failure being the absence of such outcomes), whereas for negative outcome-focused individuals the goal is to achieve the absence of negative outcomes (with failure being the presence of such outcomes) (Higgins, E.T., 2000; 2002; 2003).

In the inoculation context, the requisite threat mechanism sensitizes participants by making them aware of their vulnerabilities and serves as a motivational catalyst to cognitively fortify their attitudes in anticipation of an expected counter-attitudinal attack. Refutational preemptions provide the content required to defend against expected counter-attitudinal attacks, with the goal being the defense of a held attitude demonstrated through counterargumentation. To date, no research has examined how regulatory focus might function within the resistance process. Both positive and negative outcome focus are expected to vary the efficacy of inoculation treatments to confer resistance in that threat, serving as the motivational catalyst, defensively postures and orientates an individual toward a vigilant goal pursuit strategy and bolsters counterargumentation through negative outcome focus. Thus, based on the assumptions of these two theories, the following hypotheses are offered:

H5: Relative to the control condition, refutational inoculation treatments employing a negative outcome focused refutational preemption will confer more resistance to a counter-attitudinal attack relative to refutational inoculation treatments employing

a positive outcome focused refutational preemptions, demonstrated by: a) less positive attitudes toward the attack, b) greater elicited threat, and c) greater counter-argumentation.

Cesario, Higgins and Scholer (2008) articulate two basic principles, or general process mechanisms, related to regulatory focus. The first mechanism, fit, allows individuals to *feel right* about their experiences during message encoding. This feeling of rightness can lead receivers through multiple avenues such as: feeling good about their reaction to the content of the message, the message itself, or use the feeling of fit as information to further infer their attitude toward the topic, as well as their overall attitude confidence. The second general process mechanism expands upon the first by suggesting that fit increases the strength of engagement in message processing. Lee and Aaker (2004) demonstrated how good fit may contribute to the fluency and ease of processing, whereas bad or poor fit may detract from both engagement strength and processing fluency.

Other related research has examined how language used within positive outcome and negative outcome focus may influence message effectiveness. (Semin et al., 2005). When a positive outcome-focus is primed, individuals are sensitized and more receptive to positive outcomes, and therefore more optimally responsive to generalized concepts imparted through more abstract language, which is more relevant to a state of eagerness. Conversely, when a negative outcome-focus is primed, individuals are sensitized to negative outcomes, and thus more optimally responsive to specific, detailed, concrete information deemed critically useful in achieving goal pursuit, which is more relevant to a state of vigilance. Researchers have concluded an optimal fit between message and outcome focus should provide the maximum motivation for goal attainment. For example, a student in an eager, positive outcome-focus

orientation may be instructed that, to achieve an A, s/he needs to "come prepared to learn and participate." These are general abstract instructions for goal attainment designed to achieve the presence of positive outcomes (i.e., achieving an A). However, for a student in a vigilant, negative outcome-focused orientation, with the same goal attainment—albeit, this time framed so as not to achieve less than an A—the most optimal instructions should be framed in concrete language, such that s/he needs to "read the chapter contents, engage in class discussions, and take thorough notes." These, in contrast to the aforementioned, are specific, concrete instructions designed to achieve the absence of a negative outcome (i.e., achieving less than an A).

In the context of inoculation, the goal is the protection of an attitude from persuasive attack. Because the linguistic signatures of abstract and concrete language use have been found to impact the regulatory focus of individuals, and because inoculation messages function as general warnings against negative outcomes, it is hypothesized that:

H6: Refutation treatments employing concrete language will confer higher levels of resistance against persuasive attack relative to refutation treatments employing abstract language, as demonstrated by: a) less positive attitudes toward the attack; b) greater perceived threat and c) higher levels of counter-argumentation.

A considerable body of research indicates the distinctive features of these two self-regulatory processes exert differential impacts on a message target's affective, motivational and cognitive processes (e.g., Crowe & Higgins, 1997; Higgins et al., 1987; Roney, Higgins, & Shah, 1995). Regulatory focus research—with its notion of good and bad regulatory fit—has been incorporated into a variety of contexts including social policy issues (Cesario et al, 2004), health behaviors (Cesario et al., 2004; Speigel, Grant-Pillow, & Higgins, 2004) commercial advertising (Lee & Aaker, 2004), and political communication (Cesario, 2006). It remains

unknown how good regulatory fit might hinder or enhance the effects of refutational preemptions within the resistance process. It is argued that inoculation messages are more germane to vigilant goal pursuit strategies such that threat serves as a warning against the presence of negative outcomes, or against the absence of positive outcomes, while the refutational preemptive mechanism provides the rationale and content needed for fortifying attitudes against expected attacks, and needed for counter-argumentation if attack is encountered. Concrete linguistic signatures, characterized as being both detailed and specific, and abstract linguistic signatures are characterized as being more general and vague, both seek to ensure against the presence of negative outcomes, therefore the following interaction is hypothesized:

H7: Message outcome focus will interact with linguistic signature such that refutation treatments employing a negative outcome focus using concrete language, or a positive outcome focus using abstract language, will confer higher levels of resistance against a persuasive attack relative to refutation treatments employing a negative outcome focus using abstract language, or a positive outcome frame using concrete language, as demonstrated by: a) less positive attitudes toward the attack; b) greater perceived threat and c) higher levels of counter-argumentation.

Source Credibility

The role of the source of an inoculation message suggests a number of interesting possibilities for research. Source credibility has been one of the most widely analyzed variables in persuasion research (Eagly & Chaiken, 1993). Past studies suggest perceptions about message sources play a key role in conferring resistance to persuasion (Tannenbaum, 1967;

Tannenbaum, et al.,1966; Tannenbaum & Norris, 1965). Stone (1969) explored whether perceived credibility of the attacking source would impact the effectiveness of inoculation. Results indicated, when an attacking sources' image is derogated, resistance is enhanced.

To better understand what makes for the most effective inoculation campaigns, research needs to examine the role of the source in conferring resistance. Pfau, Holbert, Zubric, Pasha and Lin (2000) posited source considerations were an important variable in conferring resistance, hypothesizing a positive relational perception of the inoculating source would confer greater resistance against both the source and the persuasiveness of the attack message. They found dimensions of source character and competence to be predictive of attitudes toward the attack. This was supported by later applied research within the context of political campaigning. Pfau (2004a) noted increased perceptions of source credibility, specifically the dimensions of expertise and trustworthiness, enhanced the effectiveness of inoculation treatments.

The proposed research is inherently unique because it integrates the insight from RFT into the refutation preemption of the inoculation treatments. Unlike abstract language, concrete language tends to be detailed and precise, and when used within a forewarning we should expect concrete language to confer more resistance relative to abstract. We should also expect the source of these concrete messages to be more positively perceived, particularly along the dimension of source expertise (i.e., competence). McCrosky and Jensen's (1975) source credibility scale will be used for assessment. This scale taps five dominant dimensions of source credibility including: *extroversion, composure, competence, character* and *sociability*. Due to the nature and content of the concrete messages it is hypothesized that:

H8: Compared to abstract conditions, refutational treatments employing

concrete language will produce greater levels of source credibility on the dimension of competence.

The interaction between regulatory focus and linguistic signature has been found to create a *value from fit*, which is equivalent to the notion of "feeling right" (Higgins, 2000). Value from fit is achieved through a complimentary interaction between negative outcome-focused frames, which are best suited for concrete language, and positive outcome- focused frames, which are best suited for abstract language. To date, value from fit has not been assessed in terms of source credibility, and although there are reasons to assume good fit will result in higher assessments of competence, as predicted in H8, there is no clear basis for hypothesizing about the other dimensions of credibility, hence, the following research question is advanced:

RQ1: Will there be a main effect for outcome focus on source credibility in terms of character, composure, extroversion and sociability?

Chapter 4

Methodology

This investigation employs a 2 (condition: inoculation/control) x 2 (outcome focus: negative/positive) x 2 (linguistic signature: concrete/abstract) x 3 (attack claim: general nutrition/absolute/structure-function) between subjects, factorial design. Inoculation treatments were pilot tested (see below) for effectiveness prior to use in the study.

Participants

Participants were emerging adult (age 18-25) undergraduate college students recruited from introductory communication courses from a Midwestern university. Data collection required three phases extending across a 5-week period conducted over two semesters. A total of 167 students participated in phase one, of whom, 152 completed phase two, and 145 completed phase three (resulting in an 86.8% retention rate). Of the 145 participants included in the analyses, 66 completed the experiment in the Fall of 2009, and 79 more participated in the Spring of 2010. Among these, 55% were females.

Pilot Test

All inoculation messages were pilot tested for perceived lexical concreteness using a concreteness scale developed by Miller, Averbeck, and Liu (2010), which provides a definition for concreteness, followed by examples of concrete and abstract statements. Participants were given a definition of concrete language along with a few examples, then asked to evaluate a message measured on a 6-point Likert scale, with 0 meaning not concrete and 5 very concrete. Items include: *"How concrete was the message you just read about healthy food?" "How does this message on healthy food compare to most other messages you have seen on this same subject?"* (r =.58, 2-item α = .71). The pilot test was counterbalanced so that half of the

respondents were presented the concrete message first, and half received the abstract message first.

Procedures

Phase 1 gathered basic demographic information as well as assessed self-esteem, and initial attitudes about health/nutrition. Following the collection of this data, participants were assigned to conditions. Those who indicated a positive attitude toward health/nutrition were randomly assigned to one of four conditions consisting of outcome focus (negative/positive) and linguistic signature (abstract/concrete). A total of 32 participants who indicated negative attitudes toward health and nutrition (scoring 3.5 or less on the 7-point Likert scale) were excluded from the study, since inoculation can only provide resistance to attitudes already in place.

Phase 2 took place over a two week time period immediately following Phase 1 randomization. At Phase 2 participants received one of four different inoculation messages in text format; the control condition received no message and participated in assessment only. Threat manipulation checks were employed to assess the effectiveness of the message to elicit threat. Threat was operationalized by the following statement: *"Despite your opinion on this issue, there is a possibility you may come into contact with arguments contrary to your position that are so persuasive they may cause you to rethink your position. I find this possibility…."* Additionally the criterion measures of self-efficacy, attitude strength, and counter-argumentation were measured, the latter being assessed using a check-off procedure first introduced by Miller and Baron (1973) described below.

Phase 3 commenced between 7-14 days following the inoculation treatment in Phase 2. McGuire (1964) suggested a delay is necessary to allow participants time to generate

arguments to defend their positions. Researchers have investigated the optimal temporal sequencing between treatment and attack. Results indicate inoculation messages may be effective immediately after a treatment (e.g., Nabi, 2003), after a few days (e.g., McGuire, 1966), a few weeks (e.g., Pfau & Burgoon, 1988) or even a few months following a treatment (Pfau & Van Bockern, 1994). Banas and Raines' (2009) meta-analysis suggests a curvilinear relationship between time and resistance conferred by inoculation treatments such that the force conferred by inoculation is relatively consistent; however, after remaining stable, a noticeable decay in resistance occurs around the two week mark. Given the above, Phase 3 commenced after a seven day delay following Phase 2. In Phase 3, all of the participants, including control, received a counter-attitudinal attack, and criterion variables were measured including: attitude strength, attitude to attack, counter-argumentation, self-efficacy, source credibility, and likelihood of distributing message content.

Message Construction

Four messages were prepared. The first part of each inoculation pretreatment was designed to generate threat. As in past inoculation research, threat was operationalized as the warning of a potentially imminent, influential attack on the participants' current attitudes, in this case, their attitudes regarding health related food products. Participants were warned that although they may perceive certain food products as being healthy, many may in fact not be healthy. Furthermore, they may be subjected to persuasive commercial appeals by food advertisers that are so persuasive as to cause participants to question their own attitudes towards what are and are not healthy food choices.

The second and third paragraph was used to bolster the strength of the attitude toward healthy food intake by introducing arguments to support positions contrary to health-nutrition

content and structure-function content claims. This portion of the message focused on refutational preemption, which raised three arguments against participants' attitudes on the issue and then provided systematic refutations of each of those arguments. Arguments derived from Driskell, Kim and Goebel (2005) who identified the top predictors of an emerging adult populations' typical food selection practices, and the topics of cost, taste, and accessibility were refuted. These refutational preemptions contained information framed in either a positive outcome or negative outcome orientation. A positive outcome focus would advance that, "*Eating healthy food is good for your health; It is easily accessible, reasonably priced, and tastes great."* A negative outcome focus would state that, "*Eating unhealthy food is bad for your health; It is usually more expensive at drive-thru windows, and has been linked to disease*." Additionally, each of these regulatory orientations employed a linguistic signature utilizing either concrete or abstract language (see Appendix D). Concrete messages included statements such as *"Food advertisers commonly use terms such as fat-free, reduced sodium, or high fiber to indicate what is or is not healthy,"* while abstract messages included statements such as *"Food advertisers use broad, general terms to indicate whether food is healthy or not."* The messages themselves were classified as cognitive (as opposed to affective) in nature, since they contained content based on verifiable evidence and research findings with minimal affective valence or triggers (Lee & Pfau, 1997).

To control for extraneous factors, and because language and other variables can impact the outcome of message processing (Burgoon, Cohen, Miller & Montgomery, 1978), Becker, Bavelas and Braden's (1961) Index of Contingency for the Evaluation of Readability of Sentences was employed to assure consistency in the writing style and readability of the inoculation treatments. This index takes into account the total number of nouns and words of

each message. Each of the inoculation messages featured identical font size, typeface, layout and paper size. Only the printed title of source, *Center for a Healthy America*, was provided. The length of the four inoculation messages ranged from 353-358 words. Contingency rating ranged from 12.2 to 12.8, thus suggesting equivalence in readability (see Appendix D).

Attack Messages

The content of the attack messages was primarily cognitive, similar to the treatment messages covered above. The attack messages did not contain affectively-laden triggers which would be associated with either positive or negative affect, but did include cognitive (reason based) HNR advertising claims. Attack messages were original laminated copies of common grocery store items. The first, General Mills cereal brand Fruit Loops claimed "Now provides fiber: A great way to keep kids healthy," while the second, Sunbelt's Oats and Honey Granola Bars featured claims of "Whole grain oats, Great taste and quick energy," and the third, Progresso's Chicken Tuscany Soup, claimed, "Low fat, High fiber." The first represents a structure-function content claim, the second a general nutrition content claim, and the third an absolute content claim.

Predictor Variables

Predictor variables include treatment condition (inoculation/no inoculation control); outcome focus (positive/negative); and linguistic signature of the message (concrete/abstract). Participants assigned to the control group did not receive an inoculation message, but they did read the attack message in the phase three, and respond to the assessments following.

Initial attitudes. To gauge attitudes toward health/nutrition, participants were asked to indicate their overall impression of the subject on a four-item, seven-point semantic differential scale employing polar adjectives including *negative/positive, dislike/like, bad/good,* and

undesirable/desirable. This scale has demonstrated good internal consistency in past research (e.g., Dillard & Shen, 2005), and did so in the current study as well (*N*= 143; 4-item α =.93).

Message Pretest and Manipulation Checks

Threat was assessed using five bipolar adjacent pairs including: *nonthreatening/ threatening; not harmful/harmful; unintimidating/intimidating; not risky/risky,* and *safe/dangerous* measured on a 7-point semantic differential scale used in past inoculation research (Pfau & Burgoon, 1988; Pfau, 1992; Pfau et al.,1992) and demonstrated good internal consistency (*N*= 146; 5-item α =.93).

Criterion Variables

Criterion variables were measured at both Phase 2 and Phase 3. Patterned after Pfau, Holbert, Zubric, Pasha and Lin (2000), following the inoculation treatments in Phase 2, threat, counter-arguing output, and perceptions of source credibility were assessed. Following the attack message in Phase 3, attitudes toward the attack, attitude toward the source of the attack, likelihood of purchasing the product, likelihood of telling others one's feelings toward the advertised food claims, and self-efficacy were measured .

To assess the strength of attitude in *H1*, four pairs of adjective opposites measured on 7-point semantic scales were used, including, *unimportant/important, uncertain/certain, irrelevant/relevant* and *no interest/great interest*. This scale has also demonstrated good internal consistency in past research (Pfau et al., 2003, 2005), as was the case in the current study (*N*= 143; 4-item α = .82).

To address *H2* and *H5*, measures were employed to assess attitudes toward health/nutrition. A 6-item, 7-point semantic differential scale was used. Scale items include: *right/wrong, positive/negative, good/bad, acceptable/unacceptable, wise/foolish* and

favorable/unfavorable. This attitude scale has demonstrated good internal consistency in past research (e.g., Burgoon, Cohen, Miller & Montgomery, 1978; Pfau & Burgoon, 1988; Pfau et al., 1992), and did so in the current study as well (*N*= 145; 6-item α = .85).

To gauge the reported likelihood of purchasing the product for *H2* and *H3*, measures for behavioral dispositions were assessed using 0-100 probability scales assessing the following statements: "*If given the opportunity I will buy this product;"* (*N*= 140, *M* = 58.5, *SD*= 31.9,), *"I will examine the nutrition label to determine the saturated fat, sodium and cholesterol content."* (*N*= 144, *M* = 61.02, *SD*= 33.9) Similar probability scales have been used extensively in past inoculation research (Pfau, 1990; Pfau, et al., 2001; 2007; 2008).

To assess *H4* and gauge the likelihood of sharing information from inoculation treatments with others through interpersonal networks, a second 0-100 probability scale (*M* = 44.04) was developed and used in conjunction with the following questions, "*What is the likelihood you will share the positive attributes of this health-nutrition related advertising*?" (*N*= 144, *M* = 73.7, *SD*= 21.3) and "*What is the likelihood you will share the negative aspects of this health-nutrition related advertising*?" (*N*= 144, *M* = 18.5, *SD*= 20.3).

Counter-argumentation. Extant literature has assessed counter-argumentation in the inoculation context using several approaches, including thought-listing, check-listing and hybrid models (Pfau, et al., 1997; Pfau, Ivanov, et al. 2005; Pfau, Tusing, et al.,1997a). The optimal mode of capturing what has been referred to as the *arsenal of argumentation* has yet to be established (Wyer,1974). Thought listing is the most popular procedure, but is confounded by both validity issues and the subjectivity of the ratings and coding. Miller and Baron (1973) provided a check-list alternative meant to minimize the variance resulting from open-ended questions. This method developed 20 statements which represent major arguments for and

against an issue. Subjects are instructed to first check off arguments opposed to their position on the subject, then revisit the list checking off how they would counterargue against those positions, and finally weight each argument based on the respective strength of argument quality with 1 (weak) and 7 (strong). The index value is derived by multiplying each of the arguments checked off by its ranked weight, and then dividing the calculated values of the arguments and counterarguments. This procedure has been used in past inoculation research (Pfau et al. 2004; 2005).

The check-list procedure was employed in the current analysis via open-ended items made available for participants to enter their own supporting or opposing positions not provided in the list. Due to the complexity of this section, participants were encouraged by both print and verbal instruction to ONLY mark the thoughts occurring to them following the processing of the message, and to ask questions before marking responses if they were unclear of the instructions.

Self-efficacy. To assess *H3* concerning self-efficacy, Schwarzer and Jerusalem's (1995) generalized perceived self-efficacy 10-item scale was used. Participants were asked to indicate, on a 7-point Likert scale, their responses to a series of statements such as *"If someone opposes me, I can find the means to get what I want"* and *"When I am confronted with a problem, I can usually find solutions."* This scale has also demonstrated good internal consistency in past research, as was the case in the current study ($N = 146$; 10-item $\alpha = .82$).

Assessment in Phase 3 followed the attack messages for all participants, including those in the control condition, using a questionnaire designed to measure perceived source credibility and attitudes toward the persuasive attack (*H6-8*), assessed by six bipolar adjacency pairs using 7-item semantic differential scales developed by Burgoon, Cohen, Miller and

Montgomery (1978): *unacceptable/acceptable, foolish/wise, negative/positive, unfavorable/favorable, wrong/right* and *bad/good*. This scale also demonstrated good internal consistency (N = 146; 6-item α =.89).

To assess *H8* as well as *RQ1* regarding source credibility, McCrosky and Jensen's (1975) source credibility scales were used to tap into the five dominant dimensions of credibility: extroversion, composure, competence, character, and sociability. Each dimension employs three bipolar adjective pairs measured on a 7-point scale, including, for competence: *expert/inexpert, unintelligent/intelligent,* and *responsible/irresponsible;* for character: *trustworthy/not trustworthy, sympathetic/unsympathetic,* and *dishonest/honest*; for extroversion: *timid/bold, verbal/quiet,* and *informative/not informative*; for composure: *professional/not professional, polished/not polished*, and *calm/anxious*, and for sociability: *unfriendly/friendly, gloomy/cheerful,* and *irritable/good natured*, and good internal consistency was represented across all five dimensions within the current study (N= 146, *M's* ranged between 3.48 and 4.25; 3-item α's between .86 and .92).

Chapter 5

Results

Statistical Analyses

Multiple strategies were used to analyze the data. The section reports the pilot test results of the messages used in the experiment to assess the manipulation of concreteness (i.e., linguistic signature), followed by a check on perceived threat, and finally, the multivariate and univariate analyses used to assess the hypotheses and research question.

Pilot Testing and Manipulation Check

Messages were pilot tested to ensure the linguistic signatures, both abstract and concrete, were in fact distinct. The pilot test was conducted early in the Fall of 2009 among 26 participants. A paired sample *t*-test revealed a significant mean difference between the abstract and the concrete messages $t(25) = 10.85$, $p < .001$, $r = .58$, indicating the abstract messages were perceived to be significantly less concrete (i.e., more abstract) ($M = 2.53$, $SD = .95$) than the concrete messages *(*$M = 4.21$, $SD = .68$).

Given that threat is theorized to be a requisite mechanism within the inoculation process, a manipulation check was conducted to ensure a significant level of threat was elicited by the inoculation treatments. An independent sample t-test revealed significant differences between the experimental and control conditions $t(142) = 4.10$, $p < .001$, $r = .33$. Compared to control ($M = 2.81$, $SD = 1.54$), experimental conditions perceived increased levels of threat ($M = 4.00$, $SD = 1.38$).

Multivariate and Univariate Results

Hypothesis 1 posited participants who received inoculation treatments would generate threat, and foster both greater attitude certainty and attitude strength. To assess the effects of inoculation treatments a 2 (inoculation/control) x 3 (HNR advertising claims: absolute/ structure-function/general nutrition) MANOVA was computed to determine the ability of inoculation treatments to confer resistance on the criterion variables of attitude strength toward the position that eating healthy food is essential to maintaining a healthy lifestyle, the certainty of that attitude strength, and the perceived threat generated from the inoculation pretreatments.

As Table 1 indicates, the tests revealed a main effect for the inoculation condition $F(3,129) = 9.83$, $p < .001$, partial $\eta 2$=.18 and non-significant effects for the HNR advertising claim attack condition $F(3,130) = 1.70$, $p = .12$, and the interaction between inoculation condition and attack condition $F(3, 130) = .62$, $p = .71$. *Hypothesis 1* was supported through subsequent analyses, which revealed significant univariate effects for the inoculation condition on the dependent measures of Phase 3 attitude strength $F(1,131) = 11.16$, $p = .001$, partial $\eta 2$=.08, Phase 3 attitude certainty $F(1,131) = 5.07$, $p < .05$, partial $\eta 2$=.03 and perceived threat $F(1,131) = 14.52$, $p < .001$, partial $\eta 2$=.10. Results indicated that compared to control (M = 5.20, SD = .84), participants who received an inoculation treatment experienced greater Phase 3 attitude strength (M = 5.73, SD = .77) to the position that eating healthy food is necessary to maintaining a healthy life. Inoculated participants also reported greater Phase 3 attitude certainty (M = 77.15, SD = 19.21) for the above position, than control (M = 65.43, SD = 25.48). The effectiveness for inoculation pretreatments to generate threat was confirmed by inoculated individuals reporting significantly higher levels of threat (M = 3.98, SD = 1.37) than controls (M = 2.81, SD = 1.54).

Hypothesis 2 posited that compared to controls, those who received an inoculation treatment would demonstrate greater resistance against HNR advertising claims demonstrated by less positive attitudes toward the attack, a reduced likelihood of purchasing the product, and engagement in higher levels of counter-argumentation. To determine the ability of inoculation treatments to confer resistance as posited in *H2,* a 2 (inoculation/control) x 3 (HNR advertising claims: absolute/structure-function/general nutrition) MANOVA was computed, revealing a main effect for inoculation $F(3,112) = 5.02$, $p<.05$, partial $\eta 2=.12$; however, there were no significant differences found due to HNR attack condition $F(3,113) = 1.52$, $p=.17$, nor the interaction between HNR attack condition and inoculation condition $F(3,113) = .49$, $p = .81$.

Although univariate tests indicated a significant main effect for inoculation condition on Phase 3 attitude toward HNR attack $F(1,119) = 3.11$, $p = .05$, partial $\eta 2 = .12$ and Phase 3 counter-argumentation $F(1,119) = 2.09$, $p < .05$, partial $\eta 2 = .11$, no significant effect was found on the likelihood to purchase the relevant product $F(1,119) = .23$, $p = .95$. Also, although no significant differences were detected between the inoculated participants (M = 59.19, SD = 30.46) and controls (M = 53.46, SD = 32.30) on likelihood to purchase the relevant product, inoculated participants did hold a significantly less favorable view of the attacking source (M = 4.80, SD = 1.18) relative to controls (M = 5.73, SD = 1.36), and generated a significantly greater amount of counter-argumentation (M = 3.90, SD = 1.74) relative to controls (M = 2.75, SD = 1.69) (see Table 1).

Hypothesis 3 argued that because the nature of an inoculation message fortifies held attitudes through refutational preemption, it should also enhance inoculated individuals' response efficacy. To test this, a 2 (inoculation/control) x 3 (HNR advertising claims: absolute/ structure-function/general nutrition) MANOVA was computed. Multivariate results for the

inoculation condition support this hypothesis $F(2,130) = 8.80$, $p < .001$, partial $\eta^2 = .12$. However, no significant effects were reported for the HNR attack condition $F(2,130) = .30$, $p = .88$, nor the interaction between HNR attack condition and inoculation condition $F(2,131) = .81$, $p =. 52$. Further examination of the univariate results indicated significant differences between the inoculated and control conditions for Phase 2 efficacy $F(1,131) = 12.54$, $p = .001$, partial $\eta^2 = .09$ and Phase 3 efficacy $F(1,131) = 6.03$, $p <. 05$, partial $\eta^2 = .04$. Results presented in Table 2 show inoculated participants reported elevated levels of both Phase 2 efficacy ($M = 3.30$, $SD = .41$) and Phase 3 efficacy ($M = 3.59$, $SD = .60$) compared to Phase 2 control ($M = 2.96$, $SD = .55$) and Phase 3 control conditions ($M = 3.21$, $SD = 1.13$).

To understand the potential for inoculation treatments to spur subsequent interpersonal communication as hypothesized in *H4* a 2 (inoculation/control) x 3 (HNR advertising claims: absolute/structure-function/general nutrition) MANOVA was computed. The tests revealed a significant effect for the inoculation condition $F(3,129) = 9.40$, $p < .001$, partial $\eta^2 = .18$, but not for the HNR attack condition $F(3,130) = .64$, $p = .70$, nor their interaction $F(3,130) = .46$, $p = .84$. As Table 3 indicates, the univariate results revealed significant differences between the inoculation and control conditions for Phase 3 intention to speak positively, $F(1,136) = 19.70$, $p < .001$, partial $\eta^2 = .13$; Phase 3 intention to speak negatively $F(1,136) = 11.94$, $p < .001$, partial $\eta^2 = .08$; and Phase 3 likelihood to encourage others, $F(1,136) = 25.01$, $p < .001$, partial $\eta^2 = .18$. Thus *H4* was supported. This analysis revealed that compared to the control condition ($M = 67.87$, $SD = 25.90$), inoculated participants reported a decreased likelihood of speaking positively about the HNR issue/product presented in the attack ($M = 39.55$, $SD = 30.12$), and less of a propensity to encourage others to purchase the product presented in the attack ($M = 31.79$, $SD = 27.58$) than controls ($M = 63.26$, $SD = 34.12$). Inoculation participants further

reported an increase in their intention to speak negatively about the HNR issue/product presented in the attack (M = 47.88, SD = 24.30) than control (M = 24.30, SD = 28.54).

Hypothesis 5 claimed the refutational frame, as either negative outcome focus or positive outcome focus, would vary the effectiveness of inoculation pretreatments. To assess the impact of outcome focus on the resistance process a 2 (outcome focus: negative/ positive) x 3 (HNR advertising claim: absolute/structure-function/general nutrition) MANOVA was computed on attitude toward the attack, perceived threat, and Phase 3 counter-argumentation. Test results indicated a significant effect for outcome focus, $F(3,86) = 6.04$, p =.001, partial η^2 =.17, but no significant effect for the HNR attack condition $F(3,87) = 1.77$, p = 11, nor the interaction between attack condition and outcome focus, $F(3,87) = .59$, p =.73. Again, univariate results for outcome focus revealed significant differences for negative and positive outcome focus on perceived threat $F(1,88) = 7.60$, $p < .05$, partial $\eta^2 = .08$, attitude toward the attack $F(1,88) = 4.50$, $p < .05$, partial $\eta^2 =$. 08, and Phase 3 counter-argumentation $F(1,88) = 8.56$, $p < .05$, partial $\eta^2 = .09$, indicating participants in the negative outcome focus condition were found to generate significantly more Phase 3 counterarguments (M = 4.52, SD = 1.89) than participants in the positive outcome focus condition (M = 3.36, SD = 1.41). Additionally, subjects in the negative outcome focus condition held attitudes that are more negative toward the attacking source (M = 4.48, SD = 1.25) compared to participants in the positive outcome focus condition (M = 5.08, SD = 1.04). Finally, participants in the negative outcome focus condition experienced elevated levels of threat (M = 4.34, SD = 1.15) when compared to those inoculated in the positive outcome focus condition (M = 3.58, SD = 1.42).

Hypothesis 6 argued that beyond the outcome focus of the refutational preemption, the linguistic signature of the inoculation messages, as either abstract or concrete, would impact

the resistance process. *H6* posited participants who read inoculation treatments composed of concrete relative to abstract language would generate elevated levels of counter-argumentation, hold a more negative attitude of the attacking source, and experience elevated levels of threat. To assess the influence of linguistic signature on the resistance process, a 2 (linguistic signature: concrete/abstract) x 3 (HNR advertising claims: absolute/structure-function/general nutrition) MANOVA was computed on attitude toward attack, perceived threat, and Phase 3 counter-argumentation.

Multivariate test results indicated a significant effect for the linguistic signature $F(3,86) = 3.17$, $p < .05$, partial η^2=.10, however, no significant differences were found for the HNR attack condition $F(3,87) = 1.51$, $p = .18$, nor the interaction between linguistic signature and HNR attack condition $F(3,87) = 1.81$, $p = .10$. Subsequent analysis of the univariate results indicated a significant main effect for linguistic signature on participants attitudes toward the attacking source $F(1,88) = 4.89$, $p< .05$, partial $\eta^2 = .05$, and Phase 3 counter-argumentation $F(1,88) = 4.31$, $p < .05$, partial $\eta^2 = .04$, but not perceived threat $F(1,88) = .75$, $p = .38$. Findings presented in Table 4 indicate participants inoculated with concrete language in the refutational preemption were found to generate more Phase 3 counterarguments ($M = 4.38$, $SD = 1.86$) than participants inoculated with abstract language ($M = 3.42$, $SD = 1.49$), and hold more negative attitudes toward the attacking source ($M = 4.48$, $SD = 1.34$) than those inoculated with abstract language ($M = 5.14$, $SD = .88$). No significant differences were found for linguistic signature on threat between the two conditions (concrete, $M = 3.78$, $SD = 1.33$; and abstract, $M = 4.09$, $SD = 1.37$).

While the linguistic signature manipulation was not found to independently and significantly impact the threat variable, significant differences were discovered within

inoculated groups resulting from the outcome focus of the refutational content. One possible explanation for these findings results from the order of presentation, intrinsic of traditional inoculation messages, whereas participants first receive the threat component, followed by the refutational preemptive content. Threat, as a requisite mechanism of inoculation, was not manipulated to include either abstract or concrete language; therefore the lack of significant findings on the threat variable as a result of linguistic signature is understood.

To further qualify the main effects resulting from outcome focus and linguistic signature, *Hypothesis 7* posited a *value from fit* interaction such that messages employing a good fit between outcome focus and linguistic signature (i.e., concrete coupled with negative outcome focus, and abstract with positive outcome focus), should confer greater resistance relative to those employing a bad fit (i.e., concrete coupled with positive outcome focus, and abstract with negative outcome focus) as demonstrated by elevated counter-argumentation, more negative attitude toward the attack, and greater perceived threat. To assess the impact of fit on the resistance process a 2 (focus x linguistic fit: good/bad x 3 (HNR advertising claims: absolute/structure-function/general nutrition) MANOVA was computed on attitude toward attack, perceived threat, and Phase 3 counter-argumentation.

Multivariate results indicated a significant interaction between focus and linguistic signature $F(3,86) = 4.05$, $p < .01$, partial $\eta^2 = .12$ but not for the HNR attack condition $F(3,87) = 1.63$, $p = .14$, nor a 3-way interaction between the focus, linguistic signature, and HNR attack condition $F(3,87) = .73$, $p =. 62$. Further examination of the fit condition revealed this hypothesis was partially supported in that *value from fit* significantly impacted Phase 3 counter-argumentation $F(1,88) = 7.70$, $p < .01$, partial $\eta^2 = .08$; however, did not impact attitudes toward the attacking source $F(1,88) = 1.10$, $p=.30$, nor perceived threat $F(1,88) = .36$,

p = .55. Results indicated participants in the good fit condition engaged in higher levels of counter-argumentation (M = 4.31, SD = 1.83), than those in the bad fit condition (M = 3.41, SD = 1.52). The interaction results presented in Figure 1 indicate there was no simple effect for positive and negative outcome focus when the linguistic signature is abstract, however a simple effect occurs between the concrete linguistic signature and negative outcome focus such that the interaction bolsters counter-argumentation.

Hypothesis 8 posited that, because of concrete language being both direct and precise, it would confer more resistance, and lead to greater perceived source credibility in terms of competence for the inoculating source. To test this univariate analysis of variance assessed the impact of linguistic signature on perceived source competence, revealing no significant differences between the concrete (M = 3.65, SD = .58) and abstract (M = 3.67, SD = .47) conditions, $F(1,112) = .08$, p =. 78, thus *H8* was not supported.

RQ1 concerned the broader role of value from fit in relation to other dimensions of source credibility, questioning the overall impact of the interaction between outcome focus and linguistic signature on source evaluations. Fit conditions, as defined above represent an interaction between outcome focus and linguistic signature, and were characterized as positive outcome-abstract, negative outcome-concrete, while non-fit conditions were considered to be positive outcome-concrete, and negative outcome-abstract conditions. To assess interaction, an analysis of variance was computed on the four dimensions of Phase 2 source credibility variables including: character, composure, extroversion and sociability. Results indicated that the fit conditions $F(5,108) = 1.39$, p = .23 did not significantly impact the four dimensions of source credibility including character $F(2,115) = .89$, p = .34, composure $F(2,115) = .01$, p = .86, extroversion $F(2,115) = 4.02$, p = .06, and sociability $F(2,115) = .70$, p =.41.

Chapter 6

Discussion & Limitations

The purpose of this investigation was to determine the effectiveness of inoculation pretreatments in providing resistance to puffery in the form of commercial advertising appeals targeting low nutrition foods, as a method for addressing the development of NCDs among emerging adult populations within the U.S. As hypothesized, inoculation appears to be a viable alternative to the more common prevention techniques of education and health literacy. Inoculation was demonstrated to be a potentially effective preemptive strategy against common yet questionable advertising claims. Hence, inoculation may offer an effective strategy for helping to protect the health-conscious attitudes of emerging adults by providing resistance to the "pufferized" appeals of many commercial food advertisers, with no significant differences in effectiveness detected between general nutrition, absolute, and structure-function content claims.

This research not only contributes to the applied understanding of effective public health strategies related to reducing non-communicable diseases, it also theoretically advances inoculation in two distinct areas. The first being the bolstering of the refutational content based on the predictions of regulatory focus theory, the second concerning second-order inoculation effects represented in subsequent social diffusion.

Refutational Focus/Regulatory Fit

This is the first inoculation study to integrate insights from regulatory focus theory as a rationale for the design of refutational preemption treatments. Early research concentrated on message-sidedness (Lumsdaine & Janis, 1953), while later research focused on content as being either supportive or defensive (McGuire, 1961, 1962, 1964; McGuire & Papageorgis,

1962; Papageorgis & McGuire, 1961), same or different (Lee & Pfau, 1997; Pfau, 1992; Pfau & Burgoon, 1988) and more recently into message relevant affective-positive or affective-negative content (Lee & Pfau, 1997; Szabo & Pfau, 2002). Each of these perspectives has helped to enhance our contemporary understandings of inoculation theory. Results of the current research suggest the focal orientation of the refutational preemption message, as one of eagerness or vigilance, represented by positive-outcome versus negative-outcome focus, as well as its linguistic signature, in the form of either abstract or concrete language, impact treatment effectiveness. These findings provide solid empirical evidence that regulatory focus moderates the effectiveness of refutational preemption on the resistance process.

The results are clear: Compared to both control and positive outcome focus, participants who received a negative outcome-focused inoculation treatment were found to hold more negative attitudes toward the attacking source, perceived greater levels of threat, and generated elevated levels of counterarguments. Messages which employed negative outcome focus motivated participants to engage in a state of vigilance in anticipation of an expected counter-attitudinal attack (threat) and were able to confer the most resistance. Yang and Miller (2010) found similarly unexpected results in which messages emphasizing outcome-efficiency were found to be more effective in affecting people with promotion focus. Messages priming self-efficiency tend to be more appealing to people with prevention focus. The negative outcome focus sensitized participants' to the risk of inaction in goal attainment, (e.g., fortification of pre-existing attitudes vulnerable to attack), as well as the negative outcomes resulting from such inaction, and was found to be superior in the resistance process by motivating risk-avoidance.

Beyond the outcome focus of the messages, it was also hypothesized that the linguistic signatures of the messages, as either abstract or concrete, would influence the inoculation process. It was hypothesized that concrete language due to its specificity and explicitness would be the most effective. Concrete language was found to be superior to both the control condition (no treatment), and abstract linguistic condition.

These results are encouraging for health communication practitioners. The explanation for these effects derives from the well-established utility of inoculation to respond to both refutational-same and refutation-different attacks (McGuire, 1962, 1964). The basic function of the refutational pre-emption is to raise and provide answers to specific argumentative challenges. However, if the effectiveness of inoculation were to merely rely on its ability to respond to specific argumentative challenges then the strategy's ability to transcend contexts, and be robust to a variety of oppositional positions would be limited. The fact that not everything can be preempted is why inoculation is such as powerful strategy to counter "pufferized" HNR advertising claims. Concrete language, characterized as explicit and specific is more aligned with that of a refutational-same approach employed in this context, based on how the attack messages in this study were operationalized. Attacks in this study did not result from the natural environment, instead they were laminated copies of product labels which included the HNR advertising claims. As a result of how the attack was operationalized, there was a direct match between the content of the treatment message and the counter-attitudinal attack. In contrast, the inoculation treatments using abstract language required participants to rely on the *motivation* generated from Phase 2 threat, opposed to the specific *content* generated from the treatment, as in a refutational-different scenario. Therefore concrete language as the superior strategy in this study is explainable but the demonstrated effectiveness of inoculation

pre-treatments in refutational-different (abstract) scenarios is encouraging. These results indicate effectiveness of inoculation is not contingent on pre-empting specific, arbitrary commercial food advertising labeling techniques. The results provide evidence that inoculation spurs resistance to the pervasive "pufferized" advertising appeals, which are continually being reinvented by commercial food advertisers. .

It was additionally hypothesized that there would be a "value from fit." Again drawing from RFT insight, it was believed that there would be an interaction in that fit conditions: concrete-negative outcome focus, abstract-positive outcome focus versus non-fit conditions: concrete-positive outcome focus, abstract-negative outcome focus would generate added value and therefore optimally be more effective. Those participants in the "fit" conditions did engage in higher levels of counter-argumentation compared to those participants in "non-fit" conditions. These results provide evidence that "value from fit" stimulates the force of refutational preemptions and contributes to the resistance process. Further nuancing of regulatory fit in augmenting the effectiveness of refutational preemption is necessary.

It was hypothesized that a negative outcome focus coupled with concrete language would produce optimal results, rather than the negative outcome focus employing abstract language. Although the negative outcome focus condition resulted in the most resistance, it did so in spite of poor fit. The "value from fit" resulting from the interaction of outcome focus and linguistic signature impacted counter argumentation levels post-inoculation, not participants' attitudes toward the attack, nor perceived threat. These findings indicate there is a synergetic, additive motivational value which results from not only the traditional threat mechanism, advanced in extant literature, but also the outcome focus of the refutational pre-emptive content, and this is manifested by increasing an individual's ability to respond to counter

attitudinal attacks. As argued prior, negative outcome focus sensitizes participants' to the potentially negative outcomes associated with inaction, facilitating risk-aversion. The specificity associated with concrete language provides the antidote to this sensitized, cognitive awareness of vulnerability. Together this "value from fit" results in high-levels of counter attitudinal response capability.

The ability for inoculation to foster higher levels of self-efficacy as a result of bolstering attitudes has been documented in past research. It was hypothesized that compared to control, inoculation treatments would boost self-efficacy in this context as well. Results, reported in Table 2, support this hypothesis. The abstract-negative outcome focus group reported the highest level of self-efficacy, followed shortly by concrete-negative outcome focus. This supports the above findings that negative outcome focus which leads to a vigilant orientation, motivates participants to ensure against the presence of negative outcomes. The bolstered self-efficacy, needed to ensure against these negative outcomes, resulted from the vigilant motivation presented in the negative outcome focus and fostered the most resistance in the inoculation context.

Second-Order Effects

Compton and Pfau (2004b) were among the first to suggest the presence of second order inoculation effects appearing in subsequent interpersonal, word of mouth communication (WOMC). Researchers reported that compared to control, inoculated participants were more likely to express their intentions to distribute refutational content. This is an important area of inquiry as Compton & Pfau (2009) argue, "inoculation messages delivered from those in one's social network are more influential than from a more sterile source, such as mass media" (p.19).

Based upon these past findings, Hypothesis 4 predicted inoculation pretreatments would spur WOMC, and this hypothesis was supported by the data in this study. Compared to controls, inoculated participants substantially reduced their likelihood of speaking positively and increased their likelihood of speaking negatively about the product included in the attack message. This important finding adds to an emerging body of literature advocating for further investigation of these second order effects as they "extend[s] the reach of inoculation treatments far beyond those directly exposed to campaign messages" (Compton & Pfau, 2009, p.9).

Compton & Pfau (2009) were the first to outline an interpersonal, external explanation for how resistance is conferred in contrast to the contemporary intra-psychological process of cognitive reorganization (Wyer, 1974) between treatment and attack. The results of this study add to the body of literature examining whether inoculations may contribute to subsequent social diffusion of content, but did not answer questions regarding exactly *what* that WOMC content might be. In the future, integrating WOMC survey items into the attack phase of traditional inoculation studies could provide insight into this question. If the traditional mechanisms are spread throughout social networks by WOMC channels, and opposing positions are encountered and refuted, bolstering the inoculated attitude, the second order effects of WOMC may serve as effective as or even stronger boosters than repeated treatments.

Additionally, this research does not speak to the *why* of subsequent social diffusion. The motivation for participants to spread the conventional inoculation components, threat and refutational preemptions may lead to more powerful health campaigns by extending the reach and impact of inoculation. Therefore, additional research explaining these possible second order effects, the *what* and the *why* of WOMC, will be beneficial. Just as inoculation

researchers have faced challenges in establishing the optimal framework for the capturing of intra-psychological counter argumentation, the challenge remains for those wishing to capture the interpersonal, socially diffused, message content.

This research was broad in scope, and further examination is needed to refine and assess the potential latent effects resulting from a broad-based, health campaign application. From a theoretical standpoint traditional past inoculation applications have characterized attack messages in an explicit manner and operationalized direct counter-attitudinal attacks geared directly toward specific, targeted inoculated attitudes. The reliance on the mere exposure of products shrouded in "puffery" in this application is a unique, indirect approach toward the operationalization of a counter-attitudinal attack.

This document argues that inoculation serves as an effective strategy to circumvent the deceptive "pufferized" persuasive appeals of commercial food advertisers; however, participants may through inoculation become desensitized to the point that they may not be able to discern "valid" health-nutrition related [HNR] product claims. Because valid "healthy" commercial food product claims, which have met, and are verified and sanctioned by the Federal Trade Commission (FTC) guidelines were not employed as a control against the pufferized, or invalid, claims within the employed attack messages inoculated participants were exposed to, and the given results only compared inoculation participants to non-inoculated participants, the results do not ensure against potential boomer-rang effects.

It may be found that inoculation's threat component raises uncertainty such that all HNR claims are cognitively processed in a bias manner and believed to be invalid, thus demonstrating a potential boomer-rang effect. Further investigation into an inoculated participant's ability to distinguish invalid puffery from valid HNR claims, as well as

distiguishment of attitudes towards nutrition and attitudes towards health-consciousness is required. This can be achieved through further refinement of the refutational preemptive component of the messages themselves, and follow-up comparative investigations which employ both factual, valid claims and pufferized, or invalid, claims.

Although these results provide evidence for the utility of inoculation as a preemptive strategy against potentially deceptive commercial food advertising appeals, once inoculated these attitudes were only attacked once. Given the ubiquitous nature of puffery throughout a large variety of food product classes, it remains to be seen whether participants would demonstrate the same level of resistance against repeated attacks.

A significant limitation of the current investigation was the reliance on the check-listing as opposed to thought-listing procedure to capture counter-argumentation. The check-listing procedure has been used in a variety of recent studies including (Pfau, et al. 2004; 2005). Many difficulties emerged as a result of using this method, both for the participants and the researcher. Although participants were given both written and verbal instructions for how to use the instrument many found it extremely difficult to "think-through" and respond accurately. Additionally, it exposed participants to counter-attitudinal positions they may not have thought of on their own. While this method seemed to be appealing, given it would reduce error resulting from coders subjective evaluations of the thought-listing technique, it introduced many challenges to understanding the data. As a result, this method may have overestimated the true counter-argumentation ability of both the inoculated and control participants.

Another significant limitation of the investigation was the overall sample size. Because of reduced cell size, homogeneity of variance for some analyses may have been less than ideal, and rather than relying on Wilke's Lambda, Pillai's criterion was used to determine effect

significance. Although Pillai is robust to violations of the assumption of homogeneity of variance, it is unclear whether the differences would have been as strong had a larger sample been used.

Chapter 7

Future Directions & Applied Implications

The motivation for this investigation was generated from the acute awareness that the health domain today currently faces a known risk which is currently manifesting itself as a crisis within the U.S. population, resulting from the rising rates on non-communicable disease. Given the international and national attention to this issue, the findings presented are encouraging for health communication practitioners, providers, and regulatory policy makers. The future direction and applied implications section of this document will consider the possible implications of these findings in two distinct areas. The first area will focus the potential to integrate these findings and nuance future theoretical process models. The second section will specifically concentrate on the applied implications of these findings.

The catalyst that propelled my scholarly interest in this topic, thus far, has been the growing national and international attention, as well as available research funding, geared at prevention strategies to address the rising rates of non-communicable diseases in the U.S. population, which are chronically manifesting at earlier points in the human life cycle. Being a mother of two young daughters who currently teaches at a mid-sized, regional state university in the state of Kansas, the reality of this issue is much more localized, and personally significant. The Associated Press (2010) reported between 2003-2007 the percentage of Kansas girls aged 10 to 17 years old who were obese nearly doubled (Bavley, 2010). The 91.4% increase in obesity in the state of Kansas was the greatest experienced by any state. In 2009, *Trust for America's Health* compiled a list of states that had nutrition standards for foods available to children at schools, as well as policies for measuring students' BMIs. Kansas was one of the only states which did not have this type of legislation. The personal significance,

theoretical implications and potential societal impact of these findings continues to fuel my interest, as a social scientist, in the topic. The section below will outline the potential to extend the theoretical breadth of inoculation by focusing on facilitating resistance through second order inoculation effects.

Theoretical Implications

While the genesis of inoculation research focused on cultural truisms, the second phase provided demonstrable evidence of the strategy's effectiveness in various applied contexts. This emerging third phase focusing on social information diffusion of inoculation content extends the inquiry of inoculation research from its efficacy in context-specific environments into our social worlds. This new area of exploration can build upon the commonly referenced "blanket of protection" inoculation has been found to provide to intra-attitudinal structures and in turn investigate inoculation's interpersonal, second-order effects in social contexts.

Compton & Pfau (2009) posited that "Inoculation messages coming from one's social network are more influential than from a more sterile source, such as the media" (pg. 19). In the second-order context the role of source, and relational history, in message conveyance may emerge dominant, opposed to the logical arguments which underpin the refutational preemptive component of traditional inoculation messages, and thus inform current resistance knowledge.

Furthermore, this evolution from the context-specific to the socially diffused impact of inoculation provides interesting opportunities to nuance the operationalization of the threat mechanism, originally left undefined by McGuire, and redirect the focus from inoculation's impact on self-efficacy, toward treatment impact on collective efficacy at the societal level. Bandura (1977) defined perceived collective efficacy as a group's shared belief in its combined

ability to undertake courses of action to reach a goal. Scherer and Cho (2003) have reasoned that an individual approach to risk cognition ignores a nexus of mediating social influences that impact risk perception. Integrating network contagion as a theoretical frame, they found "that social linkages in communities may play an important role in focusing risk perceptions" (p. 261). Attitudes and opinions are held, shared and reinforced by social groups at a collective level (Heath, Palenchar, & O'Hair, 2009). For specific groups who are exhibiting rising rates of NCD's, with high homophily (e.g., Native American populations), when the threat mechanism raises the uncertainty of attitudes which are culturally-based and closely related to group identity, membership, and/or status, increased levels of threat may occur, in turn motivating groups to bolster these personally significant, outcome-relevant attitudes and subsequently fuel social diffusion and resistance among members with high affiliation. Bandura (1997) noted that "the strength of families, communities, organizations and social institutions, and even nations lies partly in people's sense of collective efficacy that they can solve the problems they face and improve their lives through unified effort" (p. 477). It remains unknown if second-order attitudinal reinforcement messages in a social context are superior to applied, supplemental booster treatments post-inoculation at the individual level, which have demonstrated minimal support in extant literature. This voyage into the societal impact of inoculation can not be limited to the interpersonal realm alone.

The need for additional analysis into inoculation's social, second-order effects in the computer mediated context is vast (e.g., online chat rooms, consumer reports, and discussion boards). New communication technologies facilitate participative public engagement and provide opportunity "in situations where collective action was not possible before" (Rheingold, 2002, p xviii). Given such, this channel for social diffusion provides a field ripe for

investigation. Because this research only measured the behavioral intentions of inoculated participants to distribute content through a participant's interpersonal, social networks and given the role of computer mediated communication (CMC) in emerging adult populations' social lives, the likelihood for inoculation content to "rickroll" online is possible.

Information quality management (IQM) in online environments is a serious concern for practitioners engaging in the health campaigns. Kyrouz et al., (1998) noted that typically the informal advice from family and friends is never the most accurate source of health information. Mittman and Cain (2001) elaborate these concerns by acknowledging the inexpensive nature and the ease of publishing which allows health information providers to gain access to both global and social publics. As a result, in online environments it is difficult to verify who the source of internet information is, the pace or change of information is fluid hindering a reviewed fact checking process, and limited regulation exists to transcend the illusionary divides of cyberspace. Still, in the second-order context, interpersonal or computer mediated, messages are vulnerable to possible distortion considerations (e.g., assimilation, leveling, and sharpening) therefore health practitioners may face the challenging and troubling paradox of attempting to control the quality of message content, in an uncontrollable, socially diffused context.

Practical Implications

Pfau et al. (1997a) notes, "It is difficult to specify the precise circumstances (e.g., contexts, topics, message approaches, and receivers) in which inoculation is an appropriate approach" (p. 191). From an applied standpoint the results of this investigation illuminate many areas for practical consideration including the optimal effectiveness of education and literacy directed at at-risk populations in the health campaign resistance context, the role of

source in the health campaign context, as well as channel and processing considerations for the delivery of inoculation content.

Optimal role of Education & Literacy

Although inoculation effect sizes, in the main, appear to be relatively small in magnitude, they remain meaningful nonetheless (Banas & Raines, 2009). Even small effect sizes in this context can contribute to the good of public health when the inherent value resulting from their application has a demonstrable impact on a large population (e.g., Godbold & Pfau, 2000; Pfau & Van Bockern, 1994; Pfau, Van Bockern, & Kang, 1992; Pfau & Szabo, 2001). The current investigation revealed medium effect sizes which are both promising and explainable. Pfau, et al. (1997a) argued that involvement serves as a prerequisite to inoculation. Furthermore Pfau & Burgoon (1998) and Pfau et al. (1990), in a political context, note that effect sizes are more pronounced among strong party identifiers rather than weak or non-identifiers. Participants in the current investigation reported moderate Phase 1 involvement levels (M = 3.77, SD = .30) which may be a contributory factor to the magnitude of the reported effect sizes. Aaker and Lee (2006) maintain, "Any antecedent that motivates people to process health appeals carefully and to take preventative, proactive measures toward a healthy lifestyle (e.g., eating well, exercising frequently) merits greater understanding" (p. 18). The current efforts of promoting health literacy and health education in this context may be most effective when aimed at increasing the involvement levels of vulnerable populations, serving as a desired pre-requisite to subsequent inoculation and resistance campaigns.

The role of source in inoculation campaigns is of significant importance to health campaign directors and facilitators. A 2010 study at the Rudd Center for Food Policy and Obesity at Yale found the use of recognizable cartoon characters in food marketing impacted

not only children's food preferences, but also their tastes (Brady, 2010). One explanation for these findings concerns the on-going marketing capitalization of para-social interaction based on visual imagery and relational identity which is then propagated to vulnerable demographics who are demonstrating noticeable increases in non-communicable diseases. Given that commercial food advertisers and marketers are integrating the use of such characters in product promotion, it is essential children are cultivated, or *inoculated,* so that their health conscious attitudes provide them the ability to discern the difference between their favorite characters and the products with which they are associated.

Beyond just conceptualizing inoculation as a process of two-step flow from which subsequent social diffusion is a bi-product, additional research into channel and processing differences is needed to optimize the strategy's effectiveness in this public health context.

Until the late 1990's inoculation research was primarily focused upon printed messages, with active processing usually operationalized by having targets engage in some type of writing assignment, and passive processing operationalized by having them merely read a message. More recently inoculation research has expanded from text-based message processing into more varied media modalities. These modality considerations should inform the most effective national NCD prevention campaign concerned with how initially healthy consumer attitudes may be attacked by the ubiquitous puffery inherent within commercial food advertising.

Extant literature provides some illumination on this issue. Pfau, Holbert, Zubric, Pasha and Lin (2000) found both print and video messages have the ability to confer resistance; they simply differ in terms of *how* resistance is conferred. As Meyrowtiz (1985) established, although print places an emphasis on the content of the messages, video tends to emphasize the

processing of source cues and may encourage relatively more source evaluation. Past research has operationalized active versus passive processing methods for differing media forms. Pfau et al. (2000) notes, video is conducive to producing more passive, peripheral message processing, whereby influence, should it occur, is more likely to result from relatively less systematic information processing (Chaiken & Eagly, 1983). Conversely, print messages have been found to more effectively bolster counter-argumentation, presumably due to the fact that reading text tends to prompt more active and systematic information processing (Chaiken & Eagly, 1976, 1983; Graber 1987; Petty & Cacioppo, 1986).

In the context of HNR advertising claims, inoculation treatments delivered in a textual format are expected to encourage more active processing of content, as represented in the current investigation, opposed to the reliance on source evaluations to confer resistance. This approach to message design, with a negative-outcome focus employing concrete linguistic signature will provide the cognitive-based attitude bolstering needed for sustained resistance rather than the more affect-based responses associated with the heuristic processing of source characteristics.

Although the drive to refine the inoculation process model continues today, the application of the strategy in a public health context, such as this, is needed to counter on-going efforts by commercial food advertisers to deceptively shroud products with pufferized HNR claims and avoid deceptive policy regulation. The need for prevention efforts which canalize health-conscious attitudes early in the life cycle is essential to motivate individuals to engage in healthy food selection practices in the long-term. Inoculation is such a strategy.

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Table 1

Phase 2 Elicited Threat and Phase 3 Attitude Certainty, Attitude Strength, and Attitude toward (resistance to) counterattitudinal attack as a Function of Regulatory Focus and Linguistic Signature (No Inoculation Control, Concrete Promotion, Concrete Prevention, Abstract Promotion, Abstract Prevention).

Dependent Measure	*Regulatory Focus/Fit Manipulations M (SD)*				
	No Inoculation (*n*=33)	CONPRO (*n*=26)	CONPRE (*n*=26)	ABSPRO (*n*=33)	ABSPRE (*n*=29)
Elicited Threat	2.81 (1.54)	3.49_a (1.28)	4.12_a (1.26)	3.73_a (1.67)	4.65_a (.89)
Attitude Certainty	65.43 (25.48)	76.41_a (22.83)	79.20_a (13.92)	75.06_a (21.27)	78.57_a (17.92)
Attitude Strength	5.20 (.84)	5.60_a (.90)	5.63_a (.82)	5.79_a (.67)	5.88_a (.68)
Attitude toward attack	5.81 (1.29)	4.64_a (1.09)	4.40_a (1.61)	4.77_a (.72)	5.45_a (.83)
Counterargumentation	2.75 (1.69)	3.34_b (1.35)	5.37_b (1.68)	3.35_b (1.39)	3.52_b(1.60)

Note: Elicited threat , attitude strength, and attitude toward (resistance to) persuasive attacks were gauged using 7-point scales whereas attitude certainty was measured using a 0-100 point scale. Higher scores indicate greater elicited threat, attitude certainty, attitude strength and influence of (less resistance to) counter-attitudinal attacks. Counterargumentation was assessed using a check-list procedure. Higher scores signify more counterargumentation.

$_a$ Significant compared to no inoculation control condition at $p<.01$.
$_b$ Significant compared to no inoculation control condition at $p<.05$.

Table 2.

Phase 2 and Phase 3 Self-Efficacy

Dependent Measure	*Self-Efficacy M (SD)*				
	No Inoculation (*n*=30)	CONPRO (*n*=24)	CONPRE (*n*=25)	ABSPRO (*n*=31)	ABSPRE (*n*=28)
Phase 2	2.96 (.55)	3.30_{a} (.44)	3.31_{a} (.42)	3.31_{a} (.43)	3.30_{a} (.32)
Phase 3	3.21(1.13)	3.45_{ab} (.59)	3.64_{ab} (.51)	3.56_{ab} (.61)	3.70_{ab} (.69)

Note: Self-efficacy was measured using a 10-item 4-point likert scale. Higher scores indicates higher efficacy.

[a] Significant compared to no inoculation control condition at $p<.01$.
[b] Significant between inoculation phases at $p<.05$

Table 3

Treatment Impact on Subsequent Social Diffusion

Dependent Measure	*Interpersonal Communication M (SD)*				
	No Inoculation (*n*=30)	CONPRO (*n*=24)	CONPRE (*n*=25)	ABSPRO (*n*=31)	ABSPRE (*n*=28)
Likelihood of speaking positively					
Phase 2	74.93 (25.47)	80.03 (22.30)	75.19 (23.16)	80.87 (18.83)	79.89 (21.03)
Phase 3	67.77 (25.90)	34.88_{ab} (30.34)	29.11_{ab} (26.97)	43.36_{ab} (28.91)	44.55_{ab} (33.57)
Likelihood of speaking negatively					
Phase 2	20.16 (24.29)	17.38 (19.43)	12.46 (15.25)	19.21 (15.63)	13.6 (14.99)
Phase 3	24.30 (28.54)	55.92_{ab} (33.49)	52.46_{ab} (31.86)	44.15_{ab} (28.09)	44.10_{ab} (33.06)
Likelihood of encouraging others					
Phase 3	63.26 (34.16)	29.32_{a} (25.24)	29.84_{a} (28.48)	30.06_{a} (25.95)	37.72_{a} (30.35)

Note: Above variables were measured using a 0-100 probability scale employed in past inoculation research. Higher numbers signify elevated estimations of distributing information.

[a] Significant compared to no inoculation control condition at p<.01.
[b] Significant between inoculation phases p< .05

Table 4.

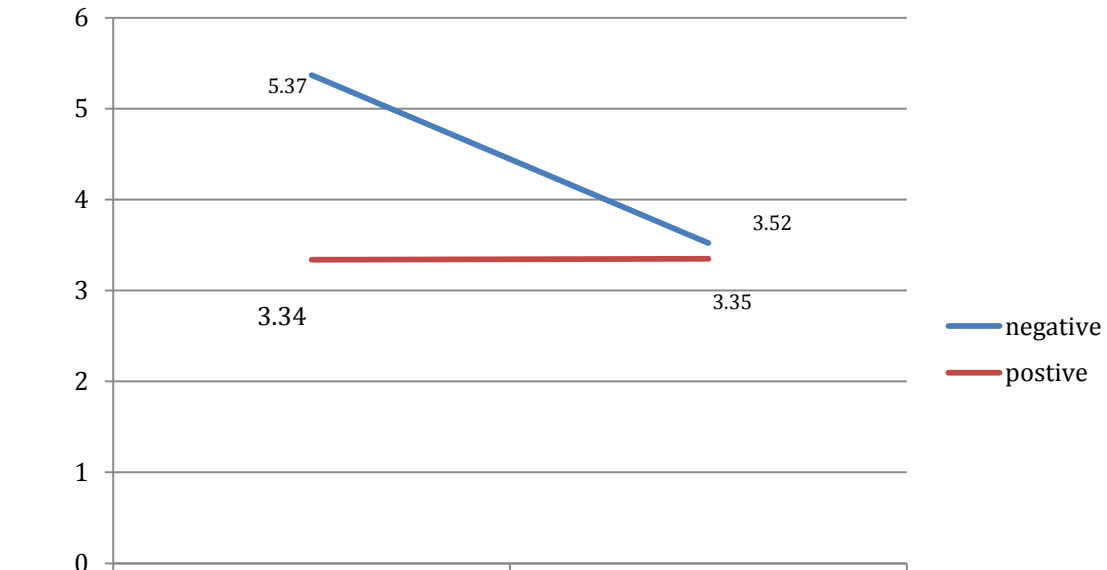
Phase 2 Elicited Threat and Phase 3 Attitude Toward Attack, and Counter-argumentation as a Function of Linguistic Signature

Dependent Measure	*Linguistic Signature Manipulation M (SD)*	
	CON (*n*=47)	ABS (*n*=47)
Elicited Threat	3.78 (1.33)	4.09 (1.37)
Attitude toward attack	4.48_a (1.34)	5.14_a (1.34)
Counter-argumentation	4.38_b (1.86)	3.42_b (1.50)

Note: Means with same subscript are significantly different from each other. Elicited threat and attitude toward (resistance to) persuasive attacks were gauged using 7-point scales. Counter-argumentation was assessed using a check-list procedure. Higher scores signify more counter-argumentation.

Figure 1:

Interaction of Outcome Focus and Linguistic Signature on Counter-argumentation



	concrete	abstract
negative	5.37	3.52
postive	3.34	3.35

APPENDIX A: PRETEST MESSAGES

The following pages contain the two messages used in the pre-testing phase of the current study. The first message is the abstract exemplar; the second is the concrete exemplar. The size and scales of the following documents have been altered and adjusted to meet the page requirements set forth by the Graduate College.

Please Read the Message Below

Eating unhealthy food is bad for your health. Some of the appeals by food advertisers intentionally mislead consumers into thinking their products are "healthy" when they are not. Unfortunately their advertising campaigns are gaining ground and some of their techniques may cause you to believe certain products are healthy when in fact, they are not. Many individuals, such as you, have already started to question their beliefs on the nutritional value of common products as a result of commercial food advertising.

Advertisers commonly use broad, general terms to indicate whether a food is healthy or not. These common claims are misleading. The more general the advertising claim is the less information a consumer can use to base a decision on the nutritional quality for that given item. You should know that for a product to be considered healthy it must meet specific guidelines set forth by specific divisions within the government. These federal guidelines are important to know when purchasing food products.

To prevent poor health and avoid disease, you should stop eating unhealthy foods. You should avoid places at which you typically make unhealthy food selections, not only to keep from putting on excess weight, but also to prevent the various health risks associated with poor diet. By avoiding unhealthy food you will maintain a healthy lifestyle.

So, beware of deceptive advertising techniques to appeal to your health-conscious attitudes, remember to scrutinize the product labels prior to purchase. **Take the time and make the effort to keep yourself healthy!**

We are interested in how concrete you think the message you just read is. The concept of concreteness is defined as follows:

> How specific and particular a message is, or the extent to which a message reduces the guesswork needed by the reader. An abstract message does not provide as much precise information, but rather give the reader more freedom to interpret the message as he or she pleases. For instance:

Here is a **concrete** example: "Basketball requires dribbling, passing and shooting skills."
Here is an **abstract** example: "Basketball requires an assortment of athletic skills."

Please indicate whether you found the message you read about healthy food to be concrete according to the definition above.

1. How concrete was the message you just read about healthy food?

   Not at all Concrete - 0 - 1 - 2 - 3 - 4 - 5 - Very Concrete

2. How does this message on healthy food compare to most other messages you have seen on this same subject?

Not at all Concrete - 0 - 1 - 2 - 3 - 4 - 5 - Very Concrete

Please Read the Message Below

Eating healthy food is good for your health. Some of the appeals by food advertisers intentionally mislead consumers into thinking their products are "healthy" when they in fact are not. Some of the advertising appeals are so persuasive they may cause you personally to believe certain products are healthy, when in fact they are not. Many individuals, such as yourself, have already started to question their beliefs on the nutritional value of common products as a result of commercial food advertising.

Food advertisers today commonly use terms such as fat-free, reduced sodium, or high fiber to indicate what is or is not healthy. Unfortunately these claims are misleading. Even general advertising claims such as a product that is "wholesome" really doesn't provide insight into the nutritional quality for that given food. You should know the Food and Drug Administration guidelines require for a product to be considered healthy it must have a low total fat content, as well as low levels of saturated fat, sodium, and cholesterol.

Eating nutritious food is good for your mind and body. Obviously, you need to eat wholesome fruits, grains and vegetables to maximize your cardiovascular health and keep your body strong. Healthy food is not necessarily expensive food. Snacking on apples, fruit bars or peanuts is usually more cost effective than cheap fast food. You can always eat healthy if you plan ahead. You should know the nutritional contents of the items you consume. You should start by shopping for healthy foods at the local grocery store or plan ahead and carry nutritious snacks with you, especially items high in vitamins, proteins and minerals. You should eat foods high in vitamins and minerals, not just to keep fit, but to promote healthy blood pressure, keep your cholesterol levels low, and develop a strong immune system. Often times these healthy foods are not only high in nutrients but rich in taste.

We are interested in how concrete you think the message you just read is. The concept of concreteness is defined as follows:

> How specific and particular a message is, or the extent to which a message reduces the guesswork needed by the reader. An abstract message does not provide as much precise information, but rather give the reader more freedom to interpret the message as he or she pleases. For instance:

Here is a **concrete** example: "Basketball requires dribbling, passing and shooting skills."
Here is an **abstract** example: "Basketball requires an assortment of athletic skills."

Please indicate whether you found the message you read about healthy food to be concrete according to the definition above.

1. How concrete was the message you just read about healthy food?

   Not at all Concrete - 0 - 1 - 2 - 3 - 4 - 5 - Very Concrete

2. How does this message on healthy food compare to most other messages you have seen on this same subject?

   Not at all Concrete - 0 - 1 - 2 - 3 - 4 - 5 - Very Concrete

APPENDIX B: CONSENT FORM

The following document is the consent form used in the current investigation. All research materials and consent documents were approved by the Pittsburg State University Institutional Review Board. The size and scales of the following documents have been altered and adjusted to meet the page requirements set forth by the Graduate College at the University of Oklahoma.

Form IC – 2

Pittsburg State University

Committee for the Protection of Human Research Subjects
(CPHRS)

INFORMED CONSENT FORM INSTRUCTIONS – Research Using Human Subjects

PROJECT TITLE: Message Processing Study

APPROVAL DATE OF PROJECT: 09/01/09
EXPIRATION DATE OF PROJECT: 12/15/09
PRINCIPAL INVESTIGATOR: Alicia M. Mason, Assistant Professor

CONTACT NAME AND PHONE FOR ANY PROBLEMS/QUESTIONS:
Alicia Mason amason@pittstate.edu

IRB CHAIR CONTACT/PHONE INFORMATION:
Dr. Shirley Drew, Department of Communication; sdrew@pittstate.edu

Peggy Snyder, Chair, Committee for the Protection of Human Research Subjects, 112 Russ Hall, Pittsburg State University, Pittsburg, KS 66762-7526, (620) 235-4179.

SPONSOR OF PROJECT: None

PURPOSE OF THE RESEARCH: This study is concerned with gathering data to explore the impact of health messages in emerging adult populations. The procedure for this study entails three sessions. The first session gathers basic demographic/psychographic information; the second session involves message exposure and a third session for counter-attitudinal message exposure. The study involves reading/watching a brief message and then providing subsequent judgments and evaluations. The time required for participation is approximately 45-60 minutes for all sessions.

PROCEDURES OR METHODS TO BE USED: If you agree to be in this study, you will be asked to do the following things: The procedure for this study entails watching a brief message presented via television or print and then providing subsequent judgments and evaluations

ALTERNATIVE PROCEDURES OR TREATMENTS, IF ANY, THAT MIGHT BE ADVANTAGEOUS TO SUBJECT: Consult your instructor if you would like to choose an alternative to participation in this study. Such an alternative might entail an essay assignment with comparable time requirements for completion. Please consult your instructor for more information regarding alternative projects.

LENGTH OF STUDY: 80-90 minutes

RISKS OR DISCOMFORTS ANTICIPATED: The study has the following risks: This study may present materials which participants might consider sensitive, offensive, threatening, or degrading. Although we will be collecting sensitive information concerning behaviors such as dietary habits, we will not be collecting personally identifiable information that will be tied to any participant's answers.

BENEFITS ANTICIPATED: Participation in this study should offer no tangible short-term or long-term psychological risks, and there may or may not be a direct benefit to you if you take part. However, your participation may result in information that may help you or others in the future. You will be compensated for your time and participation in this study with course credit if you are eligible. Please consult your instructor for the amount available.

EXTENT OF CONFIDENTIALITY: The records of this study will be kept private and your instructor or supervisor will not have access to your responses. In published reports, there will be no information included that will make it possible to identify you as a research participant. Research records will be stored securely. Your name will not be linked to your responses. Your name and student ID# will only be used for purposes of assigning course credit. To ensure confidentiality, all findings will be presented in aggregate form with no identifying information. Only the principal investigator(s) will have access to the data stored in a password protected folder on hard disk in the principle investigators' computer.

IS COMPENSATION OR MEDICAL TREATMENT AVAILABLE IF INJURY OCCURS: No.

TERMS OF PARTICIPATION: Participation in this study is voluntary. Your decision whether or not to participate will not result in penalty or loss of benefits to which you are otherwise entitled. If you decide to participate, you are free not to answer any question or discontinue participation at any time without penalty or loss of benefits to which you are otherwise entitled. In the event you are enrolled in more than one class which is participating in this study, you may stipulate the class for which you wish to have the extra credit points applied. You may only apply the course credit points to one class.

Participant Name: _____ Student ID# _____

Last Name of Instructor for Course Credit: _____ Course ID:_____ Section:_____

Participant Signature: _____ Date: _____

Witness to Signature: (Project Staff) _____ Date: _____

APPENDIX C: QUESTIONNAIRES

On the following pages, two versions of the questionnaire used in this study are provided. The first exemplar was used for participants in the experimental condition followed by the instrument used for the control condition. The size and scales of the following documents have been altered and adjusted to meet the page requirements set forth by the Graduate College.

PHASE ONE QUESTIONANAIRE

Researchers at Pittsburg State University's Department of Communication want to learn more about how people process messages. We appreciate your willingness to participate in this study. We ask that you read each set of instructions carefully, and respond to each of the survey items as accurately as possible.

Questions in Section 1 are designed to provide necessary information about you. **All of your responses in this study will be treated confidentially.** But, we need some information so we can match up the questionnaires you complete during each of the three sessions, and so we can inform your instructor about your participation in the study (should extra credit be provided). For items on course number, section number, and instructor, we want to know which course/section/instructor we should inform about your participation in this study (again should extra credit be provided). PLEASE PRINT LEGIBLY.

1. YOUR NAME: _____, _____, _____.
2. COURSE NUMBER (for extra credit):_____
3. SECTION NUMBER:_____
4. INSTRUCTOR:_____
5. YOUR GENDER (mark only one): Male _____ Female:_____
6. DAY AND DATE: _____,_____
7. EMAIL: _____

The next items concern specific statements. Read each of the statements, and then complete the items that follow. The first block of specific items are designed to determine your overall attitude toward the specific statement. The items consist of pairs of opposite adjectives. Each of the pairs of adjective objectives is separated by numbers 1, 2, 3, 4, 5, 6, and 7. Read each of the adjective opposite pairs, and then circle a number that best describes your response to the statement.

ISSUE STATEMENT:

Eating healthy food that is high in fiber and low in sodium is necessary to maintain an overall healthy lifestyle.

[Where 1 is the most negative and 7 the most positive.]

Attitude towards Issue Statement

8.	Negative	1	2	3	4	5	6	7	Positive
9.	Bad	1	2	3	4	5	6	7	Good
10.	Dislike	1	2	3	4	5	6	7	Like
11.	Undesirable	1	2	3	4	5	6	7	Desirable
12.	Unfavorable	1	2	3	4	5	6	7	Favorable
13.	Unacceptable	1	2	3	4	5	6	7	Acceptable
14.	Wrong	1	2	3	4	5	6	7	Right

15. Estimate the certainty of your attitude on this issue on a scale from 0-100, where 0 represents no certainty and 100 indicates absolute certainty: _____.

16. Estimate the likelihood that you will speak positively about this issue on a scale from 0-100 where 0 represents not likely and 100 represents very likely :_____

17. Estimate the likelihood that you will speak negatively about this issue on a scale from 0-100 where 0 represents not likely and 100 represents very likely :_____

18. Estimate the likelihood that you will check the nutritional value of your next food purchase on a scale from 0-100 where 0 represents not likely and 100 represents very likely :_____

The **next items** are designed to measure the strength of your attitude. The items consist of pairs of adjective opposites. Each of the pairs of adjective opposites is separated by numbers 1, 2, 3, 4, 5, 6 and 7. Read each of the adjective opposite pairs, and then circle a number that best describes the strength of you attitude.

19.	Unimportant	1	2	3	4	5	6	7	Important
20.	Uncertain	1	2	3	4	5	6	7	Certain
21.	Irrelevant	1	2	3	4	5	6	7	Relevant
22.	No Interest	1	2	3	4	5	6	7	Great Interest

INSTRUCTIONS: Below is a list containing opposite words. If you feel that the item above is very closely related to one end of the scale, you should place your check mark as follows:

Boring	X							Interesting
				OR				
Boring							X	Interesting

If you feel the item above seems only slightly related to one or the other end of the scale but not extremely, place you check mark as follows:

Boring			X					Interesting
				OR				
Boring						X		Interesting

IMPORTANT: Be sure that you check each item, do not omit any. Never put more than one check mark on a single scale.

Make each item a separate and independent judgment. Work at a fairly high speed through this portion of the questionnaire. Do not worry or puzzle over individual items. It is your first impressions, the immediate feelings about the topic above that we want to know. On the other hand, please do not be careless, because we want your true impressions.

ISSUE STATEMENT:

Eating healthy food that is high in fiber and low in sodium is necessary to maintain an overall healthy lifestyle.

23.	Boring								Interesting
24.	Of no concern								Of concern to me
25.	Irrelevant								Relevant
26.	Excitable								Composed

27.	Means a lot to me								Means nothing to me
28.	Useless								Useful
29.	Valuable								Worthless
30.	Trivial								Fundamental
31.	Beneficial								Not beneficial
32.	Matters to me								Doesn't matter
33.	Uninterested								Interested
34.	Significant								Insignificant
35.	Vital								Superfluous
36.	Important								Unimportant
37.	Unexciting								Exciting
38.	Appealing								Unappealing
39.	Mundane								Fascinating
40.	Essential								Nonessential
41.	Undesireable								Desirable
42.	Wanted								Unwanted
43.	Not needed								Needed

We are next interested in how you usually process messages. Please select the appropriate response for each item below to indicate how true or false each statement is concerning how you assess messages.

1= Definitely False 2= Mostly False 3= Neutral 4= Mostly True 5= Def True

44.	I use my heart as a guide for my actions.	1	2	3	4	5
45.	I use free-associations, where one idea leads to another.	1	2	3	4	5
46.	I approach tasks analytically.	1	2	3	4	5
47.	I trust my hunches.	1	2	3	4	5
48.	I reason things out carefully.	1	2	3	4	5
49.	Ideas just pop into my head.	1	2	3	4	5
50.	I am very aware of my thinking processes.	1	2	3	4	5
51.	I arrived at my answers by carefully assessing the information in front of me.	1	2	3	4	5
52.	I go by what feels good to me.	1	2	3	4	5
53.	I focus on the steps involved with doing a task.	1	2	3	4	5
54.	I have flashes of insight.	1	2	3	4	5
55.	I was very focused on what I do to arrive at the answers.	1	2	3	4	5
56.	I rely on my first impressions.	1	2	3	4	5
57.	I figure things out logically.	1	2	3	4	5
58.	I rely on my sense of intuition.	1	2	3	4	5
59.	I tackle the task systematically.	1	2	3	4	5
60.	I use clear rules.	1	2	3	4	5
61.	I use my gut feelings.	1	2	3	4	5
62.	I apply precise rules to deduce answers.	1	2	3	4	5
63.	I use my instincts.	1	2	3	4	5

Thank you. Remember to earn credit for participating in this study you NEED TO COMPLETE TWO ADDITIONAL SESSIONS. Please take your questionnaire to the lab assistant. You will be notified by email of Phase2 time and dates. Phase 2 is scheduled to begin October 26, 2009.
Again, thank you for participating.

PHASE TWO QUESTIONANAIRE

We appreciate your continued participation in this study of how people process messages. Please read the instructions at the start of each section of this booklet, do what is asked, and complete the survey items in each section as accurately as possible.

After you complete the questionnaire, please bring it up to the researcher.

Questions in Section 1 are designed to provide necessary information about you. **All of your responses in this study will be treated confidentially.** But, we need some information so we can match up the questionnaires you complete during each of the three sessions, and so we can inform your instructor about your participation in the study (should extra credit be provided). For items on course number, section number, and instructor, we want to know which course/section/instructor we should inform about your participation in this study (again should extra credit be provided). PLEASE PRINT LEGIBLY.

1. YOUR NAME: _____, _____, _____.
2. COURSE NUMBER (for extra credit):_____
3. SECTION NUMBER:_____
4. INSTRUCTOR:_____
5. YOUR GENDER (mark only one): Male _____ Female:_____
6. DAY AND DATE: _____,_____
7. EMAIL: _____

This part contains a message about an issue, which is followed by exercises and scales concerning the message. Please read the message on the next page carefully.

This section is designed to help us understand how you feel about **the idea expressed at the beginning of the message you just read that, despite your opinion on this issue,** there is a possibility you may come into contact with arguments contrary to your position that are so persuasive they may cause you to rethink your position. **I find this possibility**:

64.	Not dangerous	1	2	3	4	5	6	7	Dangerous
65.	Nonthreatening	1	2	3	4	5	6	7	Threatening
66.	Calm	1	2	3	4	5	6	7	Anxious
67.	Not scary	1	2	3	4	5	6	7	Scary
68.	Not harmful	1	2	3	4	5	6	7	Harmful
69.	Not risky	1	2	3	4	5	6	7	Risky

These next items are designed to assess **how confident you are about your attitude** that eating healthy food that is high in fiber and low in sodium is necessary to maintain an overall healthy lifestyle.

70. Level of confidence that my attitude is firm on this issue. Estimate on a scale from 0-100, where 0 represents not confident and 100 indicates very confident: _____.

71. Level of confidence that I hold the correct attitude on this issue. Estimate on a scale from 0-100, where 0 represents not confident and 100 indicates very confident: _____.

72. Level of confidence that my attitude will not change on this issue even if I find out most people disagree with me. Estimate on a scale from 0-100, where 0 represents not confident and 100 indicates very confident: _____.

73. Level of confidence that I can defend my position on this issue if attacked. Estimate on a scale from 0-100, where 0 represents not confident and 100 indicates very confident: _____.

74. Level of confidence that I can maintain my position on this issue if I encounter strong arguments against it. Estimate on a scale from 0-100, where 0 represents not confident and 100 indicates very confident: _____.

75. Level of confidence that I would defend my position on this issue if someone disagrees with me. Estimate on a scale from 0-100, where 0 represents not confident and 100 indicates very confident: _____.

Next we would like to know your **self efficacy**. Using the 1-4 scale below please indicate your response to each statement where:

1= not true at all 2= hardly true 3= moderately true 4= exactly true

76.	I can always manage to solve difficult problems is I try hard.	Not true at all 1 2 3 4	Exactly True
77.	If someone opposes me, I can find the means and way to get what I want.	Not true at all 1 2 3 4	Exactly True
78.	It is easy for me to stick to my aims and accomplish my goals.	Not true at all 1 2 3 4	Exactly True
79.	I am confident that I could deal efficiently with unexpected events.	Not true at all 1 2 3 4	Exactly True
80.	I know how to handle unexpected situations.	Not true at all 1 2 3 4	Exactly True
81.	I can solve problems if I invest the necessary effort.	Not true at all 1 2 3 4	Exactly True
82.	I can usually handle what comes my way.	Not true at all 1 2 3 4	Exactly True
83.	If I am in trouble, I can usually think of a solution.	Not true at all 1 2 3 4	Exactly True
84.	When confronted with a problem I can usually find several solutions	Not true at all 1 2 3 4	Exactly True
85.	I can remain calm when facing difficulties because I rely on my coping abilities.	Not true at all 1 2 3 4	Exactly True

These **next items** are designed to measure the strength of your attitude. The items consist of pairs of adjective opposites which are separated by numbers 1, 2, 3, 4, 5, 6, 7. Read each of the adjective opposite pairs and then circle a number that best describes the **strength of your attitude** toward the below issue statement.

Eating healthy food that is high in fiber and low in sodium is necessary to maintain an overall healthy lifestyle.

86.	Unimportant	1	2	3	4	5	6	7	Important
87.	Uncertain	1	2	3	4	5	6	7	Certain
88.	Irrelevant	1	2	3	4	5	6	7	Relevant
89.	No Interest	1	2	3	4	5	6	7	Great Interest

INSTRUCTIONS: On the scales below, please indicate your feeling about the source of this message. Circle the number between the adjectives which best represents your feelings toward the **Center For A Healthy America**. Numbers "1" and "7" indicate a very strong feeling. Numbers "2" and "6" indicate a strong feeling. Number "3" and "5" indicate a fairly weak feeling. Number "4" indicates you are undecided or do not understand the adjectives themselves. Please work quickly there are no right or wrong answers.

As a message source, the **Center For A Healthy America** ***is:***

90.	Good-natured	1	2	3	4	5	6	7	Irritable
91.	Cheerful	1	2	3	4	5	6	7	Gloomy
92.	Unfriendly	1	2	3	4	5	6	7	Friendly
93.	Timid	1	2	3	4	5	6	7	Bold
94.	Verbal	1	2	3	4	5	6	7	Quiet
95.	Informative	1	2	3	4	5	6	7	Not Informative
96.	Expert	1	2	3	4	5	6	7	Inexpert
97.	Unintelligent	1	2	3	4	5	6	7	Intelligent
98.	Responsible	1	2	3	4	5	6	7	Irresponsible
99.	Professional	1	2	3	4	5	6	7	Not Professional
100.	Not polished	1	2	3	4	5	6	7	Polished
101.	Calm	1	2	3	4	5	6	7	Anxious
102.	Dishonest	1	2	3	4	5	6	7	Honest
103.	Unsympathetic	1	2	3	4	5	6	7	Sympathetic
104.	Trustworthy	1	2	3	4	5	6	7	Not trustworthy

We are next interested in how you went about **the task of evaluating the message you just read**. We want to know the extent to which you find the following statements about how you assessed the message that you just read to either be true or false. Read each of the statements and circle the number (between 1 and 5, where 1 indicates completely false and 5 indicates completely true) that best describes your response to the statement.

105.	I used my heart as a guide for my actions.	Completely false	1	2	3	4	5	Completely true
106.	I used free-associations, where one idea leads to another.	Completely false	1	2	3	4	5	Completely true
107.	I approached the task analytically.	Completely false	1	2	3	4	5	Completely true
108.	I trusted my hunches.	Completely false	1	2	3	4	5	Completely true
109.	I reasoned things out carefully.	Completely false	1	2	3	4	5	Completely true
110.	Ideas just popped into my head.	Completely false	1	2	3	4	5	Completely true
111.	I was very aware of my thinking processes.	Completely false	1	2	3	4	5	Completely true
112.	I arrived at my answers by carefully assessing the information in front of me.	Completely false	1	2	3	4	5	Completely true
113.	I went by what feels good to me.	Completely false	1	2	3	4	5	Completely true
114.	I focused on the steps involved with doing a task.	Completely false	1	2	3	4	5	Completely true
115.	I had flashes of insight.	Completely false	1	2	3	4	5	Completely true
116.	I was very focused on what I did to arrive at the answers.	Completely false	1	2	3	4	5	Completely true
117.	I relied on my first impressions.	Completely false	1	2	3	4	5	Completely true
118.	I figured things out logically.	Completely false	1	2	3	4	5	Completely true
119.	I relied on my sense of intuition.	Completely false	1	2	3	4	5	Completely true
120.	I tackled the task systematically.	Completely false	1	2	3	4	5	Completely true
121.	I used clear rules.	Completely false	1	2	3	4	5	Completely true
122.	I used my gut feelings.	Completely false	1	2	3	4	5	Completely true
123.	I applied precise rules to deduce answers.	Completely false	1	2	3	4	5	Completely true
124.	I used my instincts.	Completely false	1	2	3	4	5	Completely true

These **next set** of items are designed to measure your sense of the overall importance of the issue that **eating healthy food is necessary in maintaining a healthy life.** How important is this issue to you?

Eating healthy food that is high in fiber and low in sodium is necessary to maintain an overall healthy lifestyle.

125.	Unimportant	1	2	3	4	5	6	7	Important
126.	Of no concern	1	2	3	4	5	6	7	Of much concern
127.	Irrelevant	1	2	3	4	5	6	7	Relevant
128.	Means nothing	1	2	3	4	5	6	7	Means a lot
129.	Doesn't matter	1	2	3	4	5	6	7	Matters
130.	Insignificant	1	2	3	4	5	6	7	Significant

131. Estimate the likelihood that you will speak positively about this issue on a scale from 0-100 where 0 represents not likely and 100 represents very likely :_____

132. Estimate the likelihood that you will speak negatively about this issue on a scale from 0-100 where 0 represents not likely and 100 represents very likely :_____

When you finish the next page, please return the survey booklet to the researcher at the front.

We are interested in finding out what thoughts went through your mind as you completed the attitude measures. **THERE ARE THREE STEPS TO THIS PROCEDURE.**

STEP 1: First we would like to know what **reasons you thought other people might have for opposing your position that healthy food is important to maintaining a healthy lifestyle.** Under the column on the left labeled Step 1 indicate whether each of the arguments listed did or did not enter your mind as you completed the attitude measures (check the appropriate box). If argument(s) not listed below entered your mind, please write in the argument(s) on the blank line(s) available and then check the appropriate box.

***It is important that you only mark those thoughts that entered your mind as you were reading the message. If you did not have a specific thought, please do not place a check in that box, even if you agree with the statement.

After you complete Step 1, please complete Step 2 which is described below.

	STEP 1		STEP 2	STEP 3
	DID		DID	
133.		Healthy foods are too expensive.		
134.		Obtaining the nutritional quality of food isn't worth the effort.		
135.		Healthy food is not too expensive.		
136.		You never truly know what foods are or are not healthy.		
137.		Healthy food doesn't taste good.		
138.		The government does a good job of protecting the nation's food supply		
139.		Advertisers always tell the truth about food.		
140.		It's impossible to maintain a healthy diet.		
141.		The government does a poor job of protecting the nation's food supply		
142.		Healthy foods are hard to find.		
143.		Healthy food tastes good.		
144.		It's not the government's job to regulate advertising.		
145.		Healthy foods are easily recognizable.		
146.		Advertisers cannot be trusted it is up the purchaser to check the nutritional quality		
147.		Healthy food is easily accessible		
148.		With accurate information it is possible to maintain a healthy diet.		
149.		Nutritional quality is not important only the taste of the food.		
150.				
151.				

STEP 2: Next we would like to know the **reasons that you thought of as to why the opposing arguments are wrong**. Under the column of the right labeled Step

2, indicate whether each argument entered your mind as you completed the attitude measures. If argument(s) not listed above entered your mind, please write in the argument(s) on the blank line(s) available and then check the appropriate box. Then proceed to Step 3.

STEP 3: Based upon your responses above please go back and re-read each response. Under the heading "Step 3" please rate the strength of your conviction on a likert scale between 1 and 7 with (1 being little conviction and 7 being much conviction).

Please remember, that to earn credit for participating in this study you NEED TO COMPLETE ONE ADDITIONAL SESSION. Please return your booklet to the lab attendant and retrieve your scheduled time to return for PHASE 3.

Thank you for your participation.

PHASE THREE QUESTIONANAIRE

We appreciate your continued participation in this study of how people process messages. Please read the instructions at the start of each section of this booklet, do what is asked, and complete the survey items in each section as accurately as possible.

After you complete the questionnaire, please bring it up to the researcher.

Part 1

Questions in Section 1 are designed to provide necessary information about you. **All of your responses in this study will be treated confidentially.** But, we need some information so we can match up the questionnaires you complete during each of the three sessions, and so we can inform your instructor about your participation in the study (should extra credit be provided). For items on course number, section number, and instructor, we want to know which course/section/instructor we should inform about your participation in this study (again should extra credit be provided). PLEASE PRINT LEGIBLY.

1. YOUR NAME: _____, _____, _____.
2. COURSE NUMBER (for extra credit):_____
3. SECTION NUMBER:_____
4. INSTRUCTOR:_____
5. YOUR GENDER (mark only one): Male _____ Female:_____
6. DAY AND DATE: _____,_____
7. EMAIL: _____

This set of items is designed to measure your sense of the overall importance of the issue. **The overall importance of maintaining a healthy diet** is:

133.	Unimportant	1	2	3	4	5	6	7	Important
134.	Of no concern	1	2	3	4	5	6	7	Of much concern
135.	Irrelevant	1	2	3	4	5	6	7	Relevant
136.	Means nothing	1	2	3	4	5	6	7	Means a lot
137.	Doesn't matter	1	2	3	4	5	6	7	Matters
138.	Insignificant	1	2	3	4	5	6	7	Significant

The packet you received contains a message about a product, please read through the packet contents. Once you have finished reading the packet contents please turn to the next page and begin the response measures.

This section seeks to measure your attitude toward the content that was provided in the advertisement. Read the following statements and then complete the items that follow.

I THINK THAT THE ADVERTISING CLAIMS IN THE MESSAGE WERE:

[Where 1 is the most negative and 7 the most positive.]

139.	Negative	1	2	3	4	5	6	7	Positive
140.	Bad	1	2	3	4	5	6	7	Good
141.	Foolish	1	2	3	4	5	6	7	Wise
142.	Unfavorable	1	2	3	4	5	6	7	Favorable
143.	Unacceptable	1	2	3	4	5	6	7	Acceptable
144.	Wrong	1	2	3	4	5	6	7	Right

I***NSTRUCTIONS:*** On the scales below, please indicate your feeling about the source of this message. Circle the number between the adjectives which best represents your feelings about the advertiser of this message. Numbers "1" and "7" indicate a very strong feeling. Numbers "2" and "6" indicate a strong feeling. Number "3" and "5" indicate a fairly weak feeling. Number "4" indicates you are undecided or do not understand the adjectives themselves. Please work quickly there are no right or wrong answers.

I feel the advertiser who is the source of this message is:

145.	Good-natured	1	2	3	4	5	6	7	Irritable
146.	Cheerful	1	2	3	4	5	6	7	Gloomy
147.	Unfriendly	1	2	3	4	5	6	7	Friendly
148.	Timid	1	2	3	4	5	6	7	Bold
149.	Verbal	1	2	3	4	5	6	7	Quiet
150.	Informative	1	2	3	4	5	6	7	Not Informative
151.	Expert	1	2	3	4	5	6	7	Inexpert
152.	Unintelligent	1	2	3	4	5	6	7	Intelligent
153.	Responsible	1	2	3	4	5	6	7	Irresponsible
154.	Professional	1	2	3	4	5	6	7	Not professional
155.	Not polished	1	2	3	4	5	6	7	Polished
156.	Calm	1	2	3	4	5	6	7	Anxious
157.	Dishonest	1	2	3	4	5	6	7	Honest
158.	Unsympathetic	1	2	3	4	5	6	7	Sympathetic
159.	Trustworthy	1	2	3	4	5	6	7	Not trustworthy

The content in the message provides information that is contrary to your initial attitude on this issue, we would like to measure the strength of

your attitude. The scale items consist of pairs of adjective opposites. Each of the pairs of adjective opposites is separated by numbers 1, 2, 3, 4, 5, 6 and 7. Read each of the adjective opposite pairs, and then circle a number that best describes the strength of you attitude.

160.	Unimportant	1	2	3	4	5	6	7	Important
161.	Uncertain	1	2	3	4	5	6	7	Certain
162.	Irrelevant	1	2	3	4	5	6	7	Relevant
163.	No Interest	1	2	3	4	5	6	7	Great Interest

164. Estimate the certainty of your response on this issue on a scale from 0-100, where 0 represents no certainty and 100 indicates absolute certainty: _____.

165. Estimate the likelihood of purchasing this product a scale from 0-100, where 0 represents no certainty and 100 indicates absolute certainty: _____.

166. Estimate the likelihood of speaking positively about this product on a scale from 0-100, where 0 represents no certainty and 100 indicates absolute certainty: _____.

167. Estimate the likelihood of speaking negatively about this product on a scale from 0-100, where 0 represents no certainty and 100 indicates absolute certainty: _____.

168. Estimate the likelihood of encouraging others to buy this product on a scale from 0-100, where 0 represents no certainty and 100 indicates absolute certainty: _____.

Next we would like to know how confident you are about your attitude about this issue. Using the 1-4 scale below please indicate your response to each statement where:

1= not true at all 2= hardly true 3= moderately true 4= exactly true

ISSUE STATEMENT
Eating healthy food that is high in fiber and low in sodium is necessary to maintain an overall healthy lifestyle.

169.	I can always manage to solve difficult problems is I try hard.	Not true at all	1 2 3 4	Exactly True
170.	If someone opposes me, I can find the means and way to get what I want.	Not true at all	1 2 3 4	Exactly True
171.	It is easy for me to stick to my aims and accomplish my goals.	Not true at all	1 2 3 4	Exactly True
172.	I am confident that I could deal efficiently with unexpected events.	Not true at all	1 2 3 4	Exactly True
173.	I know how to handle unexpected situations.	Not true at all	1 2 3 4	Exactly True
174.	I can solve problems if I invest the necessary effort.	Not true at all	1 2 3 4	Exactly True
175.	I can usually handle what comes my way.	Not true at all	1 2 3 4	Exactly True
176.	If I am in trouble, I can usually think of a solution.	Not true at all	1 2 3 4	Exactly True
177.	When confronted with a problem I can usually find several solutions	Not true at all	1 2 3 4	Exactly True
178.	I can remain calm when facing difficulties because I rely on my coping abilities.	Not true at all	1 2 3 4	Exactly True

We are next interested in how you went about the task of **evaluating the message you just read**. We want to know the extent to which you find the following statements about how you assessed the message that you just read to either be true or false. Read each of the statements and circle the number (between 1 and 5, where 1 indicates completely false and 5 indicates completely true) that best describes your response to the statement.

When I read the message I _____:

1= Definitely False 2= Mostly False 3= Neutral 4= Mostly True 5= Definitely True

179.	I used my heart as a guide for my actions.	Completely false	1	2	3	4	5	Completely true
180.	I used free-associations, where one idea leads to another.	Completely false	1	2	3	4	5	Completely true
181.	I approached the task analytically.	Completely false	1	2	3	4	5	Completely true
182.	I trusted my hunches.	Completely false	1	2	3	4	5	Completely true
183.	I reasoned things out carefully.	Completely false	1	2	3	4	5	Completely true
184.	Ideas just popped into my head.	Completely false	1	2	3	4	5	Completely true
185.	I am very aware of my thinking processes.	Completely false	1	2	3	4	5	Completely true
186.	I arrived at my answers by carefully assessing the information in front of me.	Completely false	1	2	3	4	5	Completely true
187.	I went by what feels good to me.	Completely false	1	2	3	4	5	Completely true
188.	I focused on the steps involved with doing a task.	Completely false	1	2	3	4	5	Completely true
189.	I had flashes of insight.	Completely false	1	2	3	4	5	Completely true
190.	I was very focused on what I did to arrive at the answers.	Completely false	1	2	3	4	5	Completely true
191.	I relied on my first impressions.	Completely false	1	2	3	4	5	Completely true
192.	I figured things out logically.	Completely false	1	2	3	4	5	Completely true
193.	I relied on my sense of intuition.	Completely false	1	2	3	4	5	Completely true
194.	I tackled the task systematically.	Completely false	1	2	3	4	5	Completely true
195.	I used clear rules.	Completely false	1	2	3	4	5	Completely true
196.	I used my gut feelings.	Completely false	1	2	3	4	5	Completely true
197.	I applied precise rules to deduce answers.	Completely false	1	2	3	4	5	Completely true
198.	I used my instincts.	Completely false	1	2	3	4	5	Completely true

The items on the next page concern the thoughts that went through your mind as you read the message. Please read the instructions carefully and then complete the items on the page.
We are interested in finding out what thoughts went through your mind as you completed the attitude measures. THERE ARE THREE STEPS TO THIS PROCEDURE.

STEP 1: First we would like to know what **reasons you thought other people might have for opposing your position that healthy food is important to maintaining a healthy lifestyle.** Under the column on the left labeled Step 1 indicate whether each of the arguments listed did or did not enter your mind as you completed the attitude measures (check the appropriate box). If argument(s) not listed below entered your mind, please write in the argument(s) on the blank line(s) available and then check the appropriate box.

***It is important that you only mark those thoughts that entered your mind as you were reading the message. If you did not have a specific thought, please do not place a check in that box, even if you agree with the statement.

After you complete Step 1, please complete Step 2 which is described below.

	STEP 1		STEP 2	STEP 3
	DID		DID	
133.		Healthy foods are too expensive.		
134.		Obtaining the nutritional quality of food isn't worth the effort.		
135.		Healthy food is not too expensive.		
136.		You never truly know what foods are or are not healthy.		
137.		Healthy food doesn't taste good.		
138.		The government does a good job of protecting the nation's food supply		
139.		Advertisers always tell the truth about food.		
140.		It's impossible to maintain a healthy diet.		
141.		The government does a poor job of protecting the nation's food supply		
142.		Healthy foods are hard to find.		
143.		Healthy food tastes good.		
144.		It's not the government's job to regulate advertising.		
145.		Healthy foods are easily recognizable.		
146.		Advertisers cannot be trusted it is up the purchaser to check the nutritional quality		
147.		Healthy food is easily accessible		
148.		With accurate information it is possible to maintain a healthy diet.		
149.		Nutritional quality is not important only the taste of the food.		
150.				
151.				

STEP 2: Next we would like to know the **reasons that you thought of as to why the opposing arguments are wrong**. Under the column of the right labeled Step 2, indicate whether each argument entered your mind as you completed the attitude measures. If argument(s) not listed above entered your mind, please write in the argument(s) on the blank line(s) available and then check the appropriate box. Then proceed to Step 3.

STEP 3: Based upon your responses above please go back and re-read each response. Under the heading "Step 3" please rate the strength of your conviction on a likert scale between 1 and 7 with (1 being little conviction and 7 being much conviction).

Your participation is now complete. Please return the survey booklet to the researcher at the front. The report of your participation will be forwarded to your instructor for course credit.

Thank you for your participation.

PHASE ONE QUESTIONANAIRE

Researchers at Pittsburg State University's Department of Communication want to learn more about how people process messages. We appreciate your willingness to participate in this study. We ask that you read each set of instructions carefully, and respond to each of the survey items as accurately as possible.

Questions in Section 1 are designed to provide necessary information about you. **All of your responses in this study will be treated confidentially.** But, we need some information so we can match up the questionnaires you complete during each of the three sessions, and so we can inform your instructor about your participation in the study (should extra credit be provided). For items on course number, section number, and instructor, we want to know which course/section/instructor we should inform about your participation in this study (again should extra credit be provided). PLEASE PRINT LEGIBLY.

1. YOUR NAME: _____, _____, _____.
2. COURSE NUMBER (for extra credit):_____
3. SECTION NUMBER:_____
4. INSTRUCTOR:_____
5. YOUR GENDER (mark only one): Male _____ Female:_____
6. DAY AND DATE: _____,_____
7. EMAIL: _____

The next items concern specific statements. Read each of the statements, and then complete the items that follow. The first block of specific items are designed to determine your overall attitude toward the specific statement. The items consist of pairs of opposite adjectives. Each of the pairs of adjective objectives is separated by numbers 1, 2, 3, 4, 5, 6, and 7. Read each of the adjective opposite pairs, and then circle a number that best describes your response to the statement.

ISSUE STATEMENT:

Eating healthy food that is high in fiber and low in sodium is necessary to maintain an overall healthy lifestyle.

[Where 1 is the most negative and 7 the most positive.]

Attitude towards Issue Statement

8.	Negative	1	2	3	4	5	6	7	Positive
9.	Bad	1	2	3	4	5	6	7	Good
10.	Dislike	1	2	3	4	5	6	7	Like
11.	Undesirable	1	2	3	4	5	6	7	Desirable
12.	Unfavorable	1	2	3	4	5	6	7	Favorable
13.	Unacceptable	1	2	3	4	5	6	7	Acceptable
14.	Wrong	1	2	3	4	5	6	7	Right

15. Estimate the certainty of your attitude on this issue on a scale from 0-100, where 0 represents no certainty and 100 indicates absolute certainty: _____.

16. Estimate the likelihood that you will speak positively about this issue on a scale from 0-100 where 0 represents not likely and 100 represents very likely :_____

17. Estimate the likelihood that you will speak negatively about this issue on a scale from 0-100 where 0 represents not likely and 100 represents very likely :_____

18. Estimate the likelihood that you will check the nutritional value of your next food purchase on a scale from 0-100 where 0 represents not likely and 100 represents very likely :_____

The **next items** are designed to measure the strength of your attitude. The items consist of pairs of adjective opposites. Each of the pairs of adjective opposites is separated by numbers 1, 2, 3, 4, 5, 6 and 7. Read each of the adjective opposite pairs, and then circle a number that best describes the strength of you attitude.

19.	Unimportant	1	2	3	4	5	6	7	Important
20.	Uncertain	1	2	3	4	5	6	7	Certain
21.	Irrelevant	1	2	3	4	5	6	7	Relevant
22.	No Interest	1	2	3	4	5	6	7	Great Interest

INSTRUCTIONS: Below is a list containing opposite words. If you feel that the item above is very closely related to one end of the scale, you should place your check mark as follows:

Boring	X							Interesting

OR

Boring							X	Interesting

If you feel the item above seems only slightly related to one or the other end of the scale but not extremely, place you check mark as follows:

Boring			X					Interesting

OR

Boring						X		Interesting

IMPORTANT: Be sure that you check each item, do not omit any. Never put more than one check mark on a single scale.

Make each item a separate and independent judgment. Work at a fairly high speed through this portion of the questionnaire. Do not worry or puzzle over individual items. It is your first impressions, the immediate feelings about the topic above that we want to know. On the other hand, please do not be careless, because we want your true impressions.

ISSUE STATEMENT:

Eating healthy food that is high in fiber and low in sodium is necessary to maintain an overall healthy lifestyle.

23.	Boring								Interesting
24.	Of no concern								Of concern to me
25.	Irrelevant								Relevant
26.	Excitable								Composed
27.	Means a lot to me								Means nothing to me
28.	Useless								Useful
29.	Valuable								Worthless
30.	Trivial								Fundamental
31.	Beneficial								Not beneficial
32.	Matters to me								Doesn't matter
33.	Uninterested								Interested
34.	Significant								Insignificant
35.	Vital								Superfluous
36.	Important								Unimportant
37.	Unexciting								Exciting
38.	Appealing								Unappealing
39.	Mundane								Fascinating
40.	Essential								Nonessential
41.	Undesireable								Desirable
42.	Wanted								Unwanted
43.	Not needed								Needed

We are next interested in how you usually process messages. Please select the appropriate response for each item below to indicate how true or false each statement is concerning how you assess messages.

1= Definitely False 2= Mostly False 3= Neutral 4= Mostly True 5= Definitely True

44.	I use my heart as a guide for my actions.	1	2	3	4	5
45.	I use free-associations, where one idea leads to another.	1	2	3	4	5
46.	I approach tasks analytically.	1	2	3	4	5
47.	I trust my hunches.	1	2	3	4	5
48.	I reason things out carefully.	1	2	3	4	5
49.	Ideas just pop into my head.	1	2	3	4	5
50.	I am very aware of my thinking processes.	1	2	3	4	5
51.	I arrived at my answers by carefully assessing the information in front of me.	1	2	3	4	5
52.	I go by what feels good to me.	1	2	3	4	5
53.	I focus on the steps involved with doing a task.	1	2	3	4	5
54.	I have flashes of insight.	1	2	3	4	5
55.	I was very focused on what I do to arrive at the answers.	1	2	3	4	5
56.	I rely on my first impressions.	1	2	3	4	5
57.	I figure things out logically.	1	2	3	4	5
58.	I rely on my sense of intuition.	1	2	3	4	5
59.	I tackle the task systematically.	1	2	3	4	5
60.	I use clear rules.	1	2	3	4	5
61.	I use my gut feelings.	1	2	3	4	5
62.	I apply precise rules to deduce answers.	1	2	3	4	5
63.	I use my instincts.	1	2	3	4	5

Thank you. Remember to earn credit for participating in this study you NEED TO COMPLETE TWO ADDITIONAL SESSIONS. Please take your questionnaire to the lab assistant. You will be notified by email of Phase2 time and dates. Phase 2 is scheduled to begin October 26, 2009.

Again, thank you for participating.

PHASE TWO QUESTIONANAIRE (CQ)

We appreciate your continued participation in this study of how people process messages. Please read the instructions at the start of each section of this booklet, do what is asked, and complete the survey items in each section as accurately as possible.

After you complete the questionnaire, please bring it up to the researcher.

Questions in Section 1 are designed to provide necessary information about you. **All of your responses in this study will be treated confidentially.** But, we need some information so we can match up the questionnaires you complete during each of the three sessions, and so we can inform your instructor about your participation in the study (should extra credit be provided). For items on course number, section number, and instructor, we want to know which course/section/instructor we should inform about your participation in this study (again should extra credit be provided). PLEASE PRINT LEGIBLY.

1. YOUR NAME: _____, _____, _____.
2. COURSE NUMBER (for extra credit):_____
3. SECTION NUMBER:_____
4. INSTRUCTOR:_____
5. YOUR GENDER (mark only one): Male _____ Female:_____
6. DAY AND DATE: _____,_____
7. EMAIL: _____

These first items concern specific statements. Read each of the statements, and then complete the items that follow. The first block of items is designed to determine your overall attitude toward the specific statement. The items consist of pairs of opposite adjectives. Each of the pairs of adjective objectives is separated by numbers 1, 2, 3, 4, 5, 6, and 7. Read each of the adjective opposite pairs, and then circle a number that best describes your response to the statement.

ISSUE STATEMENT:

Eating healthy food that is high in fiber and low in sodium is necessary to maintain an overall healthy lifestyle.

[Where 1 is the most negative and 7 the most positive.]

Attitude towards Issue Statement

8.	Negative	1	2	3	4	5	6	7	Positive
9.	Bad	1	2	3	4	5	6	7	Good
10.	Dislike	1	2	3	4	5	6	7	Like
11.	Undesirable	1	2	3	4	5	6	7	Desirable
12.	Unfavorable	1	2	3	4	5	6	7	Favorable
13.	Unacceptable	1	2	3	4	5	6	7	Acceptable
14.	Wrong	1	2	3	4	5	6	7	Right

We are interested in finding out what thoughts went through your mind as you completed the attitude measures on the previous page. **THERE ARE THREE STEPS TO THIS PROCEDURE.**

STEP 1: First we would like to know what reasons you thought other people might have for opposing your position **(that are opposite of what you think)**. Under the column on the left labeled Step 1 indicate whether each of the arguments listed entered your mind as you completed the attitude measures (check the appropriate box). If argument(s) not listed below entered your mind, please write in the argument(s) on the blank line(s) available and then check the appropriate box.

***It is important that you only mark those thoughts that entered your mind as you completed the attitude measures. If you did not have a specific thought, please do not place a check in that box, even if you agree with the statement.

After you complete Step 1, please complete Step 2 which is described below.

	STEP 1		STEP 2	STEP 3
	DID		DID	
133.		Healthy foods are too expensive.		
134.		Obtaining the nutritional quality of food isn't worth the effort.		
135.		Healthy food is not too expensive.		
136.		You never truly know what foods are or are not healthy.		
137.		Healthy food doesn't taste good.		
138.		The government does a good job of protecting the nation's food supply		
139.		Advertisers always tell the truth about food.		
140.		It's impossible to maintain a healthy diet.		
141.		The government does a poor job of protecting the nation's food supply		
142.		Healthy foods are hard to find.		
143.		Healthy food tastes good.		
144.		It's not the government's job to regulate advertising.		
145.		Healthy foods are easily recognizable.		
146.		Advertisers cannot be trusted it is up the purchaser to check the nutritional quality		
147.		Healthy food is easily accessible		
148.		With accurate information it is possible to maintain a healthy diet.		
149.		Nutritional quality is not important only the taste of the food.		
150.				
151.				

STEP 2: Next we would like to know the reasons that you thought of as to why the opposing arguments are wrong. **(what would you tell a person with that thought or feeling to convince them they are wrong)** Under the column of the right labeled Step 2, indicate whether each argument entered your mind as you completed the attitude measures. If argument(s) not listed above entered your mind, please write in the argument(s) on the blank line(s) available and then check the appropriate box. Then proceed to Step 3.

STEP 3: Based upon your responses above please go back and re-read each response. Under the heading "Step 3" please rate the strength of your conviction on a likert scale between 1 and 7 with (1 being little conviction and 7 being much

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These next items are designed to assess **how confident you are about your attitude** that eating healthy food that is high in fiber and low in sodium is necessary to maintain an overall healthy lifestyle.

70. Level of confidence that my attitude is firm on this issue. Estimate on a scale from 0-100, where 0 represents not confident and 100 indicates very confident: _____.

71. Level of confidence that I hold the correct attitude on this issue. Estimate on a scale from 0-100, where 0 represents not confident and 100 indicates very confident: _____.

72. Level of confidence that my attitude will not change on this issue even if I find out most people disagree with me. Estimate on a scale from 0-100, where 0 represents not confident and 100 indicates very confident: _____.

73. Level of confidence that I can defend my position on this issue if attacked. Estimate on a scale from 0-100, where 0 represents not confident and 100 indicates very confident: _____.

74. Level of confidence that I can maintain my position on this issue if I encounter strong arguments against it. Estimate on a scale from 0-100, where 0 represents not confident and 100 indicates very confident: _____.

75. Level of confidence that I would defend my position on this issue if someone disagrees with me. Estimate on a scale from 0-100, where 0 represents not confident and 100 indicates very confident: _____.

This section is designed to help us understand how you feel about **the idea expressed that, despite your opinion on this issue,** there is a possibility you may come into contact with arguments contrary to your position that are so persuasive they may cause you to rethink your position. **I find this possibility**:

64.	Not dangerous	1	2	3	4	5	6	7	Dangerous
65.	Nonthreatening	1	2	3	4	5	6	7	Threatening
66.	Calm	1	2	3	4	5	6	7	Anxious
67.	Not scary	1	2	3	4	5	6	7	Scary
68.	Not harmful	1	2	3	4	5	6	7	Harmful
69.	Not risky	1	2	3	4	5	6	7	Risky

Next we would like to know your **self efficacy**. Using the 1-4 scale below please indicate your response to each statement where:

1= not true at all 2= hardly true 3= moderately true 4= exactly true

76.	I can always manage to solve difficult problems is I try hard.	Not true at all	1	2	3	4	Exactly True
77.	If someone opposes me, I can find the means and way to get what I want.	Not true at all	1	2	3	4	Exactly True
78.	It is easy for me to stick to my aims and accomplish my goals.	Not true at all	1	2	3	4	Exactly True
79.	I am confident that I could deal efficiently with unexpected events.	Not true at all	1	2	3	4	Exactly True
80.	I know how to handle unexpected situations.	Not true at all	1	2	3	4	Exactly True
81.	I can solve problems if I invest the necessary effort.	Not true at all	1	2	3	4	Exactly True
82.	I can usually handle what comes my way.	Not true at all	1	2	3	4	Exactly True
83.	If I am in trouble, I can usually think of a solution.	Not true at all	1	2	3	4	Exactly True
84.	When confronted with a problem I can usually find several solutions	Not true at all	1	2	3	4	Exactly True
85.	I can remain calm when facing difficulties because I rely on my coping abilities.	Not true at all	1	2	3	4	Exactly True

These **next items** are designed to measure the strength of your attitude. The items consist of pairs of adjective opposites which are separated by numbers 1, 2, 3, 4, 5, 6, 7. Read each of the adjective opposite pairs and then circle a number that best describes the **strength of your attitude** toward the below issue statement.

Eating healthy food that is high in fiber and low in sodium is necessary to maintain an overall healthy lifestyle.

86.	Unimportant	1	2	3	4	5	6	7	Important
87.	Uncertain	1	2	3	4	5	6	7	Certain
88.	Irrelevant	1	2	3	4	5	6	7	Relevant
89.	No Interest	1	2	3	4	5	6	7	Great Interest

INSTRUCTIONS: On the scales below, please indicate your feeling about **Center For A Healthy America**. Circle the number between the adjectives which best represents your feelings toward the **Center For A Healthy America**. Numbers "1" and "7" indicate a very strong feeling. Numbers "2" and "6" indicate a strong feeling. Number "3" and "5" indicate a fairly weak feeling. Number "4" indicates you are undecided or do not understand the adjectives themselves. Please work quickly there are no right or wrong answers.

90.	Good-natured	1	2	3	4	5	6	7	Irritable
91.	Cheerful	1	2	3	4	5	6	7	Gloomy
92.	Unfriendly	1	2	3	4	5	6	7	Friendly
93.	Timid	1	2	3	4	5	6	7	Bold
94.	Verbal	1	2	3	4	5	6	7	Quiet
95.	Informative	1	2	3	4	5	6	7	Not Informative
96.	Expert	1	2	3	4	5	6	7	Inexpert
97.	Unintelligent	1	2	3	4	5	6	7	Intelligent
98.	Responsible	1	2	3	4	5	6	7	Irresponsible
99.	Professional	1	2	3	4	5	6	7	Not Professional
100.	Not polished	1	2	3	4	5	6	7	Polished
101.	Calm	1	2	3	4	5	6	7	Anxious
102.	Dishonest	1	2	3	4	5	6	7	Honest
103.	Unsympathetic	1	2	3	4	5	6	7	Sympathetic
104.	Trustworthy	1	2	3	4	5	6	7	Not trustworthy

We are next interested in how you go about generally processing messages. We want to know the extent to which you find the following statements about how you assess messages to either be true or false. Read each of the statements and circle the number (between 1 and 5, where 1 indicates completely false and 5 indicates completely true) that best describes your response to the statement.

105.	I used my heart as a guide for my actions.	Completely false	1	2	3	4	5	Completely true
106.	I used free-associations, where one idea leads to another.	Completely false	1	2	3	4	5	Completely true
107.	I approached the task analytically.	Completely false	1	2	3	4	5	Completely true
108.	I trusted my hunches.	Completely false	1	2	3	4	5	Completely true
109.	I reasoned things out carefully.	Completely false	1	2	3	4	5	Completely true
110.	Ideas just popped into my head.	Completely false	1	2	3	4	5	Completely true
111.	I was very aware of my thinking processes.	Completely false	1	2	3	4	5	Completely true
112.	I arrived at my answers by carefully assessing the information in front of me.	Completely false	1	2	3	4	5	Completely true
113.	I went by what feels good to me.	Completely false	1	2	3	4	5	Completely true
114.	I focused on the steps involved with doing a task.	Completely false	1	2	3	4	5	Completely true
115.	I had flashes of insight.	Completely false	1	2	3	4	5	Completely true
116.	I was very focused on what I did to arrive at the answers.	Completely false	1	2	3	4	5	Completely true
117.	I relied on my first impressions.	Completely false	1	2	3	4	5	Completely true
118.	I figured things out logically.	Completely false	1	2	3	4	5	Completely true
119.	I relied on my sense of intuition.	Completely false	1	2	3	4	5	Completely true
120.	I tackled the task systematically.	Completely false	1	2	3	4	5	Completely true
121.	I used clear rules.	Completely false	1	2	3	4	5	Completely true
122.	I used my gut feelings.	Completely false	1	2	3	4	5	Completely true
123.	I applied precise rules to deduce answers.	Completely false	1	2	3	4	5	Completely true
124.	I used my instincts.	Completely false	1	2	3	4	5	Completely true

These **next set** of items are designed to measure your sense of the overall importance of the issue that **eating healthy food is necessary in maintaining a healthy life.** How important is this issue to you?

Eating healthy food that is high in fiber and low in sodium is necessary to maintain an overall healthy lifestyle.

125.	Unimportant	1	2	3	4	5	6	7 Important
126.	Of no concern	1	2	3	4	5	6	7 Of much concern

127.	Irrelevant	1	2	3	4	5	6	7	Relevant
128.	Means nothing	1	2	3	4	5	6	7	Means a lot
129.	Doesn't matter	1	2	3	4	5	6	7	Matters
130.	Insignificant	1	2	3	4	5	6	7	Significant

131. Estimate the likelihood that you will speak positively about this issue on a scale from 0-100 where 0 represents not likely and 100 represents very likely :_____

132. Estimate the likelihood that you will speak negatively about this issue on a scale from 0-100 where 0 represents not likely and 100 represents very likely :_____

Please remember, that to earn credit for participating in this study you NEED TO COMPLETE ONE ADDITIONAL SESSION. Please return your booklet to the lab attendant and retrieve your scheduled time to return for PHASE 3.

Thank you for your participation.

PHASE THREE QUESTIONANAIRE (FLA)

We appreciate your continued participation in this study of how people process messages. Please read the instructions at the start of each section of this booklet, do what is asked, and complete the survey items in each section as accurately as possible.

After you complete the questionnaire, please bring it up to the researcher.

Part 1

Questions in Section 1 are designed to provide necessary information about you. **All of your responses in this study will be treated confidentially.** But, we need some information so we can match up the questionnaires you complete during each of the three sessions, and so we can inform your instructor about your participation in the study (should extra credit be provided). For items on course number, section number, and instructor, we want to know which course/section/instructor we should inform about your participation in this study (again should extra credit be provided). PLEASE PRINT LEGIBLY.

1. YOUR NAME: _____, _____, _____.
2. COURSE NUMBER (for extra credit):_____
3. SECTION NUMBER:_____
4. INSTRUCTOR:_____
5. YOUR GENDER (mark only one): Male _____ Female:_____
6. DAY AND DATE: _____,_____
7. EMAIL: _____

This set of items is designed to measure your sense of the overall importance of the issue. **The overall importance of eating healthy food** is:

133.	Unimportant	1	2	3	4	5	6	7	Important
134.	Of no concern	1	2	3	4	5	6	7	Of much concern
135.	Irrelevant	1	2	3	4	5	6	7	Relevant
136.	Means nothing	1	2	3	4	5	6	7	Means a lot
137.	Doesn't matter	1	2	3	4	5	6	7	Matters
138.	Insignificant	1	2	3	4	5	6	7	Significant

The packet you received contains a message about a product, please read through the packet contents. Once you have finished reading the packet contents please turn to the next page and begin the response measures.

This section seeks to measure your attitude toward the content that was provided in the advertisement. Read the following statements and then complete the items that follow.

I THINK THAT THE ADVERTISING CLAIMS IN THE MESSAGE WERE:

[Where 1 is the most negative and 7 the most positive.]

139.	Negative	1	2	3	4	5	6	7	Positive
140.	Bad	1	2	3	4	5	6	7	Good
141.	Foolish	1	2	3	4	5	6	7	Wise

142.	Unfavorable	1	2	3	4	5	6	7	Favorable
143.	Unacceptable	1	2	3	4	5	6	7	Acceptable
144.	Wrong	1	2	3	4	5	6	7	Right

I***NSTRUCTIONS:*** On the scales below, please indicate your feeling about the source of this message. Circle the number between the adjectives which best represents your feelings about the advertiser of this message. Numbers "1" and "7" indicate a very strong feeling. Numbers "2" and "6" indicate a strong feeling. Number "3" and "5" indicate a fairly weak feeling. Number "4" indicates you are undecided or do not understand the adjectives themselves. Please work quickly there are no right or wrong answers.

I feel the advertiser who is the source of this message is:

145.	Good-natured	1	2	3	4	5	6	7	Irritable
146.	Cheerful	1	2	3	4	5	6	7	Gloomy
147.	Unfriendly	1	2	3	4	5	6	7	Friendly
148.	Timid	1	2	3	4	5	6	7	Bold
149.	Verbal	1	2	3	4	5	6	7	Quiet
150.	Informative	1	2	3	4	5	6	7	Not Informative
151.	Expert	1	2	3	4	5	6	7	Inexpert
152.	Unintelligent	1	2	3	4	5	6	7	Intelligent
153.	Responsible	1	2	3	4	5	6	7	Irresponsible
154.	Professional	1	2	3	4	5	6	7	Not professional
155.	Not polished	1	2	3	4	5	6	7	Polished
156.	Calm	1	2	3	4	5	6	7	Anxious
157.	Dishonest	1	2	3	4	5	6	7	Honest
158.	Unsympathetic	1	2	3	4	5	6	7	Sympathetic
159.	Trustworthy	1	2	3	4	5	6	7	Not trustworthy

The content in the message provides information that is contrary to your initial attitude on this issue, we would like to measure the strength of your attitude. The scale items consist of pairs of adjective opposites. Each of the pairs of adjective opposites is separated by numbers 1, 2, 3, 4, 5, 6 and 7. Read each of the adjective opposite pairs, and then circle a number that best describes the strength of you attitude.

160.	Unimportant	1	2	3	4	5	6	7 Important
161.	Uncertain	1	2	3	4	5	6	7 Certain
162.	Irrelevant	1	2	3	4	5	6	7 Relevant
163.	No Interest	1	2	3	4	5	6	7 Great Interest

164. Estimate the certainty of your response on this issue on a scale from 0-100, where 0 represents no certainty and 100 indicates absolute certainty: _____.

165. Estimate the likelihood of purchasing this product a scale from 0-100, where 0 represents no certainty and 100 indicates absolute certainty: _____.

166. Estimate the likelihood of speaking positively about this product on a scale from 0-100, where 0 represents no certainty and 100 indicates absolute certainty: _____.

167. Estimate the likelihood of speaking negatively about this product on a scale from 0-100, where 0 represents no certainty and 100 indicates absolute certainty: _____.

168. Estimate the likelihood of encouraging others to buy this product on a scale from 0-100, where 0 represents no certainty and 100 indicates absolute certainty: _____.

Next we would like to know how confident you are about your attitude about this issue. Using the 1-4 scale below please indicate your response to each statement where:

1= not true at all 2= hardly true 3= moderately true 4= exactly true

ISSUE STATEMENT:

Eating healthy food that is high in fiber and low in sodium is necessary to maintain an overall healthy lifestyle.

169.	I can always manage to solve difficult problems is I try hard.	Not true at all	1	2	3	4		Exactly True
170.	If someone opposes me, I can find the means and way to get what I want.	Not true at all	1	2	3	4		Exactly True
171.	It is easy for me to stick to my aims and accomplish my goals.	Not true at all	1	2	3	4		Exactly True
172.	I am confident that I could deal efficiently with unexpected events.	Not true at all	1	2	3	4		Exactly True
173.	I know how to handle unexpected situations.	Not true at all	1	2	3	4		Exactly True
174.	I can solve problems if I invest the necessary effort.	Not true at all	1	2	3	4		Exactly True
175.	I can usually handle what comes my way.	Not true at all	1	2	3	4		Exactly True
176.	If I am in trouble, I can usually think of a solution.	Not true at all	1	2	3	4		Exactly True
177.	When confronted with a problem I can usually find several solutions	Not true at all	1	2	3	4		Exactly True
178.	I can remain calm when facing difficulties because I rely on my coping abilities.	Not true at all	1	2	3	4		Exactly True

We are next interested in how you went about the task of **evaluating the message you just read**. We want to know the extent to which you find the following statements about how you assessed the message that you just read to either be true or false. Read each of the statements and circle the number (between 1 and 5, where 1 indicates completely false and 5 indicates completely true) that best describes your response to the statement.

When I read the message I _____:

1= Def False 2= Mostly False 3= Neutral 4= Mostly True 5= Def True

179.	I used my heart as a guide for my actions.	Completely false	1	2	3	4	5	Completely true
180.	I used free-associations, where one idea leads to another.	Completely false	1	2	3	4	5	Completely true
181.	I approached the task analytically.	Completely false	1	2	3	4	5	Completely true
182.	I trusted my hunches.	Completely false	1	2	3	4	5	Completely true
183.	I reasoned things out carefully.	Completely false	1	2	3	4	5	Completely true
184.	Ideas just popped into my head.	Completely false	1	2	3	4	5	Completely true
185.	I am very aware of my thinking processes.	Completely false	1	2	3	4	5	Completely true
186.	I arrived at my answers by carefully assessing the information in front of me.	Completely false	1	2	3	4	5	Completely true
187.	I went by what feels good to me.	Completely false	1	2	3	4	5	Completely true
188.	I focused on the steps involved with doing a task.	Completely false	1	2	3	4	5	Completely true
189.	I had flashes of insight.	Completely false	1	2	3	4	5	Completely true
190.	I was very focused on what I did to arrive at the answers.	Completely false	1	2	3	4	5	Completely true
191.	I relied on my first impressions.	Completely false	1	2	3	4	5	Completely true
192.	I figured things out logically.	Completely false	1	2	3	4	5	Completely true
193.	I relied on my sense of intuition.	Completely false	1	2	3	4	5	Completely true
194.	I tackled the task systematically.	Completely false	1	2	3	4	5	Completely true
195.	I used clear rules.	Completely false	1	2	3	4	5	Completely true
196.	I used my gut feelings.	Completely false	1	2	3	4	5	Completely true
197.	I applied precise rules to deduce answers.	Completely false	1	2	3	4	5	Completely true
198.	I used my instincts.	Completely false	1	2	3	4	5	Completely true

STEP 1: First we would like to know what **reasons you thought other people might have for opposing your position that healthy food is important to maintaining a healthy lifestyle.** Under the column on the left labeled Step 1 indicate whether each of the arguments listed did or did not enter your mind as you completed the attitude measures (check the appropriate box). If argument(s) not listed below entered your mind, please write in the argument(s) on the blank line(s) available and then check the appropriate box.

***It is important that you only mark those thoughts that entered your mind as you were reading the message. If you did not have a specific thought, please do not place a check in that box, even if you agree with the statement. After you complete Step 1, please complete Step 2 which is described below.

	STEP 1		STEP 2	STEP 3
	DID		DID	
133.		Healthy foods are too expensive.		
134.		Obtaining the nutritional quality of food isn't worth the effort.		
135.		Healthy food is not too expensive.		
136.		You never truly know what foods are or are not healthy.		
137.		Healthy food doesn't taste good.		
138.		The government does a good job of protecting the nation's food supply		
139.		Advertisers always tell the truth about food.		
140.		It's impossible to maintain a healthy diet.		
141.		The government does a poor job of protecting the nation's food supply		
142.		Healthy foods are hard to find.		
143.		Healthy food tastes good.		
144.		It's not the government's job to regulate advertising.		
145.		Healthy foods are easily recognizable.		
146.		Advertisers cannot be trusted it is up the purchaser to check the nutritional quality		
147.		Healthy food is easily accessible		
148.		With accurate information it is possible to maintain a healthy diet.		
149.		Nutritional quality is not important only the taste of the food.		
150.				
151.				

STEP 2: Next we would like to know the **reasons that you thought of as to why the opposing arguments are wrong**. Under the column of the right labeled Step 2, indicate whether each argument entered your mind as you completed the attitude measures. If argument(s) not listed above entered your mind, please write in the argument(s) on the blank line(s) available and then check the appropriate box. Then proceed to Step 3.

STEP 3: Based upon your responses above please go back and re-read each response. Under the heading "Step 3" please rate the strength of your conviction on a likert scale between 1 and 7 with (1 being little conviction and 7 being much conviction).

We are next interested in understanding interpersonal conversations you may have had as a result of your participation in this study.

Your participation is now complete. Please return the survey booklet to the researcher at the front. The report of your participation will be forwarded to your instructor for course credit.

Thank you for your participation.

APPENDIX D: MESSAGES

On the following pages the four messages used in the study are provided. The first message provided represents the abstract/promotion condition, the second the abstract/prevention

condition, the third the concrete/prevention condition and the fourth the concrete/promotion condition. The size and scales of the following documents have been altered and adjusted to meet the page requirements set forth by the Graduate College.

CENTER FOR A HEALTHY AMERICA

Eating healthy food is good for your health. Some of the appeals by food advertisers intentionally mislead consumers into thinking

their products are "healthy" when they in fact are not. Some of the advertising appeals are so persuasive they may cause you personally to believe certain products are healthy, when in fact they are not. Many individuals, such as yourself, have already started to question their beliefs on the nutritional value of common products as a result of commercial food advertising.

Food advertisers today commonly use broad, general terms to indicate whether a food is healthy or not. The common claims are misleading. The more general the advertising claims the less information a consumer can use to base a decision on the nutritional quality for that given item. You should know that for a product to be considered healthy it must meet specific guidelines set forth by specific divisions within the government. These federal guidelines are important to know when purchasing food products.

Eating healthy food is good for your health. Obviously you need to eat healthy food to keep your body strong. Just because you should eat healthy doesn't mean you will go broke. Many healthy foods are affordable. You should realize healthy foods usually aren't available through drive-thru windows. To maintain a healthy diet you could carry fresh foods with you or even pick-up fresh items when you are out doing your daily activities. Eating nutritious food is good for your health. By maintaining a healthy diet you can feel an added layer of protection against common health problems. Eating from the five food groups daily gives you a plethora of options for your taste buds. Take advantage of both the benefits and tastes by incorporating natural foods into your diet. By acknowledging and recognizing false advertising claims and committing to a healthy diet you can maintain a healthy lifestyle.

So, beware of deceptive advertising techniques to appeal to your health-conscious attitudes, remember to scrutinize the product labels including sodium, cholesterol and saturated fat contents prior to purchase. **Take the time and make the effort to keep yourself healthy!**

CENTER FOR A HEALTHY AMERICA

Eating unhealthy food is bad for your health. Some of the appeals by food advertisers intentionally mislead consumers into thinking their products are "healthy" when they in fact are not. Some of the advertising appeals are so persuasive they may cause you personally to believe certain products are healthy, when in fact they are not. Many individuals, such as yourself, have already started to question their beliefs on the nutritional value of common products as a result of commercial food advertising.

Food advertisers today commonly use broad, general terms to indicate whether a food is healthy or not. The common claims are misleading. The more general the advertising claims the less information a consumer can use to base a decision on the nutritional quality for that given item. You should know that for a product to be considered healthy it must meet specific guidelines set forth by specific divisions within the government. These federal guidelines are important to know when purchasing food products.

You should avoid the "dollar-menu" at fast food restaurants. It's time you realize fast food restaurants typically charge higher prices for their more nutritious items, such as salads. The message is clear you should cut down on junk foods and steer clear of questionable foods which offer negative health outcomes at dollar prices. To prevent poor health and avoid disease, you should stop eating unhealthy foods. You should avoid places at which you typically make unhealthy food selections, not only to keep from putting on excess weight, but also to prevent the many health risks associated with eating unhealthy foods. By avoiding unhealthy food you will maintain a healthy lifestyle.

Do yourself a favor; don't eat a lot of junk food. Many of these non-nutritious items are high in sugar. While sugar may taste sweet, reducing your intake of processed sugars found in fast-foods can decrease your likelihood for conditions which are known contributors to many other negative health problems.

So, beware of deceptive advertising techniques to appeal to your health attitudes, remember to scrutinize the product labels prior to purchase. **Take the time and make the effort to keep yourself healthy!**

CENTER FOR A HEALTHY AMERICA

Eating unhealthy food is bad for your health. Some of the appeals by food advertisers intentionally mislead consumers into thinking their products are "healthy" when they in fact are not. Some of the advertising appeals are so persuasive they may cause you personally to believe certain products are healthy, when in fact they are not. Many individuals, such as yourself, have already started to question their beliefs on the nutritional value of common products as a result of commercial food advertising

. Food advertisers today commonly use terms such as fat-free, reduced sodium, or high fiber to indicate what is or is not healthy. Unfortunately these claims are misleading. Even general advertising claims such as a product that is "wholesome" really doesn't provide insight into the nutritional quality for that given food. You should know the Food and Drug Administration guidelines require for a product to be considered healthy it must have a low total fat content, as well as low levels of saturated fat, sodium, and cholesterol.

Keep in mind, eating fast food is bad for your mind and body. Obviously, you need to stay away from fast-food restaurants which offer sugary and fatty foods, to minimize the risk of cardiovascular disease and stroke. Often time these food providers/advertisers discount items that are high in cholesterol and saturated fats.

You should stay away from hamburgers, sodas and french fries at places like McDonald's, Wendy's and Burger King. While these items are easily accessible they are high in sugar, fat and sodium and contribute to hyperactive disorders, type-II diabetes and tooth decay.

Do yourself a favor; don't eat a lot of junk food. Many of these non-nutritious items are high in sugar. While sugar may taste sweet, reducing your intake of processed sugars found in fast-food deserts and sodas you can decrease your likelihood for obesity, a known contributor to many other negative health problems.

So, beware of deceptive advertising techniques to appeal to your health attitudes, remember to scrutinize the product labels including sodium, cholesterol and saturated fat contents prior to purchase. **Take the time and make the effort to keep yourself healthy!**

CENTER FOR A HEALTHY AMERICA

Eating healthy food is good for your health. Some of the appeals by food advertisers intentionally mislead consumers into thinking their products are "healthy" when they in fact are not. Some of the advertising appeals are so persuasive they may cause you personally to believe certain products are healthy, when in fact they are not. Many individuals, such as yourself, have already started to question their beliefs on the nutritional value of common products as a result of commercial food advertising.

Food advertisers today commonly use broad, general terms to indicate whether a food is healthy or not. The common claims are misleading. The more general the advertising claims the less information a consumer can use to base a decision on the nutritional quality for that given item. You should know that for a product to be considered healthy it must meet specific guidelines set forth by specific divisions within the government. These federal guidelines are important to know when purchasing food products.

Eating healthy food is good for your health. Obviously you need to eat healthy food to keep your body strong. Just because you should eat healthy doesn't mean you will go broke. Many healthy foods are affordable. You should realize healthy foods usually aren't available through drive-thru windows. To maintain a healthy diet you could carry fresh foods with you or even pick-up fresh items when you are out doing your daily activities. Eating nutritious food is good for your health. By maintaining a healthy diet you can feel an added layer of protection against common health problems. Eating from the five food groups daily gives you a plethora of options for your taste buds. Take advantage of both the benefits and tastes by incorporating natural foods into your diet. By acknowledging and recognizing false advertising claims and committing to a healthy diet you can maintain a healthy lifestyle.

So, beware of deceptive advertising techniques to appeal to your health-conscious attitudes, remember to scrutinize the product labels including sodium, cholesterol and saturated fat contents prior to purchase. **Take the time and make the effort to keep yourself healthy!**

APPENDIX E: ATTACK MESSAGES


EXCELLENT SOURCE OF FIBER
Quality Foods
PROGRESSO
SOUP
New! High Fiber
Chicken Tuscany
28% DAILY VALUE OF FIBER
INSPECTED BY U.S. DEPARTMENT OF AGRICULTURE
NET WT. 19 OZ (1 LB 3 OZ) 538g
PROGRESSO
High Fiber
EXCELLENT SOURCE OF FIBER
LOW FAT
NO MSG ADDED*
NO ARTIFICIAL FLAVORS
*Except that which occurs naturally in yeast extract and hydrolyzed vegetable proteins
READY TO SERVE • DO NOT ADD WATER
STOVE-TOP: Heat in saucepan.
MICROWAVE: Heat in covered microwavable bowl on High 2-4 min. Careful—leave in microwave 1 min; stir. Refrigerate leftovers.
LISTA PARA SERVIR • NO AGREGUE AGUA
ESTUFA: Caliente en una cacerola.
HORNO DE MICROONDAS: Caliente en un recipiente cubierto apto para microondas a temperatura Alta de 2 a 4 min. Precaución: deje reposar 1 min. en el microondas; revuelva. Refrigere lo que sobre.
Questions, comments? Save can and call 1-800-200-9377 weekdays 7:30 a.m. to 5:30 p.m. CT. Se habla español.
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Kellogg's
FROOT LOOPS
NATURAL FRUIT FLAVORS
SWEETENED MULTI-GRAIN CEREAL
Toucan SAM
NOW PROVIDES FIBER
A GREAT WAY TO KEEP KIDS HEALTHY
SAME GREAT TASTE!
CEREAL
NET WT. 12.2 OZ. (345g)


Sunbelt
Fits Your Daily Adventure
with Whole Grain Oats
Great Taste
Quick Energy
WHOLE GRAIN
11g or more per serving
WholeGrainsCouncil.org
Oats & Honey
Chewy Granola Bars
BIG PACK
12 Bars
US YOUTH SOCCER
12 - 1.4 OZ. (40g) BARS
NET WT. 16.8 OZ. (1 LB. 0.8 OZ.) 476g
INDIVIDUALLY WRAPPED