THE ROLE OF SELF- AND FUNCTIONAL CONGRUITY IN FOOD ADVERTISING:

A MODEL OF KEY MODERATORS, MEDIATORS, AND OUTCOMES

by

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(Under the Direction of Leonard N. Reid)

ABSTRACT

This research investigated the empirical relationships among individual propensities, food product types, attribute-based ad appeal types, consumer psychological motivations, and ad-related responses. A multi-stage research procedure was executed to experimentally test a series of hypotheses and a research question. Key results of this research show that:

- Among the three types of Health and Nutrition-Related (HNR) claims in the analyzed magazine food advertisements, nutrient-content claims were present overwhelmingly more frequently than structure/function and health claims.

- Consumers' unhealthy = tasty intuition was a stronger influence on ad responses than the influence of health halos in the form of nutrient-content associated attribute-based ad appeals.

- Consumers' self-congruity and functional-congruity have different predictive power across the combinations of food products and attribute-based appeal types.

- As consumers are more involved in health and nutrition-related issues, they evaluate the utilitarian value of nutrient-content claims in food advertisements (functional-congruity) more thoroughly than consumers who are less involved.

These results provide several theoretical and practical implications not only for

advertising practitioners on how to use HNR claims more effectively, but also for public health

officials on why inappropriate HNR claims in food advertising need to be regulated.

INDEX WORDS: Food advertising, Health and Nutrition-Related (HNR) claims, Self- and
functional congruity, Unhealthy = tasty intuition, Health halo, Functional
matching effect

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A Dissertation Submitted to the Graduate Faculty of The University of Georgia in Partial

Fulfillment of the Requirements for the Degree

DOCTOR OF PHILOSOPY

ATHENS, GEORGIA

2013

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DEDICATION

For my beloved God who keeps promises with me,

For my family who support me with heartfelt devotion and love,

For all my teachers and friends in Grady,

&

Especially for Dr. Reid, who is my academic father and provided me with unstinting intellectual

and moral support.

ACKNOWLEDGEMENTS

First and foremost, I am deeply indebted to the instruction, support, and guidance of my major professor and mentor, Dr. Leonard N. Reid. From the beginning to the end of my doctoral program, his guidance and support have encouraged me to be a solid academic researcher in advertising and marketing communication. He is truly my academic father. For the last five years, I was able to stand on his shoulders and see farther in the academic world than I could by myself.

I would like to extend my sincere appreciation to my other doctoral committee members, without whom this research would not have been possible: Dr. Spencer F. Tinkham, Dr. Karen W. King, Dr. Jooyoung Kim, and Dr. Minsun Shim. Your invaluable suggestions and advice profoundly contributed to the quality of this doctoral dissertation research.

I would also like to say thank you to Dr. Hye-Jin Paek. During my master's program, she educated me to have a strong foundation as a researcher. Such strong foundation enabled me to fully receive the discipline of Dr. Reid and develop my talent and skills during my doctoral program. This doctoral dissertation was developed from and inspired by my master's thesis.

I am grateful to my peers and friends, particularly to Taehyun Baek, Kyunga Yoo, Jiran Hou, and Geoffrey Graybeal for providing encouragement and care for the last several years. I especially wish to express my thanks to my helper, Glenn Hawes, for his priceless support and advice.

Most of all, I would like to thank my family for their endless love and support. Naejeong, thank you for your encouragement during the hard times. And Joseph, you are our precious treasure. Finally, I am so very thankful to my parents and my wife's parents for their tireless and

unwavering support, patience, and love, as well as their steadfast belief that I could reach this

milestone in my academic career.

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CHAPTER 1

Introduction

Background

One of major health issues in the United States is the consumption of unhealthy foods. Such eating behavior is associated with a number of serious health problems for U.S. citizens, including the eating related disorders of weight-gain and obesity (CDC 2005a, 2005b). Though there are many factors related to these health problems, advertising for unhealthy food products has been identified as a major driver of poor eating habits and eating disorders (see the review of Harker, Harker, and Burns 2007; Hoek and Gendall 2006).

To attack the problem relative to marketing and advertising, the U.S. government has encouraged food companies to make healthier food products and to follow Health and Nutrition Related (HNR) claim stipulations in food advertisements (NLEA 1990; DSHEA 1994; also see Andrews, Burton, and Netemeyer 2000; Andrews, Netemeyer, and Burton 1998; Parker 2003). Today, HNR claims are widely used in advertising for a variety of food product categories (Choi et al. 2010; Parker 2003; Yoon et al. 2010).

Nevertheless, evidence indicates that regulatory efforts have been ineffective in health promotion when it comes to food advertising. As noted by others, HNR claim stipulations contain several legal loopholes (Andrews et al. 1998, 2000; Heller 2001; Kozup, Creyer, and Burton 2003; Parker 2003). One of the biggest loopholes, if not the biggest, is that food companies are encouraged by HNR claim stipulations to emphasize healthy information in their ads, but are not required to emphasize unhealthy information in ad-content (Andrews et al. 1998,

2000; Heller 2001; Nestle 2007; Parker 2003). As a result, HNR claims often inappropriately mislead consumers to believe that the advertised food product is healthy, even if the product contains high levels of unhealthy ingredients (Chandon and Wansink 2007; Heller 2001; Neslte 2007; Wansink and Chandon 2006). Indeed, past studies have found that even a simple nutrient-content claim (e.g. "Low Fat") leads consumers to over-generalize that an advertised food product is healthy, since the claim overshadows unhealthy product information, causing consumers to truncate further information search and underestimate bad ingredients in the advertised product, such as high calories, cholesterol, sodium, and so on (Andrews et al. 1998, 2000; Roe, Levy, and Derby 1999; Wansink and Chandon 2006).

Studies on the side effects of HNR claim misuse in food marketing are abundant in the literature. However, relatively few studies have scrutinized whether HNR claims are effective regardless of food categories, and why consumers are attracted by and process such claims (Wansink and Chandon, 2006). Particularly in the advertising literature, researchers have not investigated (1) how consumers' ad-based responses and outcomes differ by ads for different types of food categories and HNR paired attribute-based ad appeals, (2) what psychological motivations predict such ad-based responses and outcomes, and (3) how the predictive model of psychological motivations are influenced by specific consumer characteristics. Additional research is needed to fill this gap in the literature to advance food advertising and its relationship to health issues.

Objectives of the Research

In order to provide a better understanding of the psychological processes involving HNR claim-based food advertising, this study experimentally tests a model of the key moderators, mediators, and outcomes of the advertising form. The proposed model is presented in Figure 1-1,

and composed of a series of moderating factors and mediating conditions which, based on previous research, are expected to differentially affect consumer responses to food advertisements:

[Figure 1-1 about here]

The elements of the model, which are discussed and operationalized in detail in Chapters 2 and 3, are listed below

- ➢ Moderating Factors:

  - Income: individual's total pre-tax income earned in the past year

  - Education: the highest level of school an individual completed

  - Health consciousness: individual's intrinsic involvement to maintain good health

  - Body esteem: self-evaluation of one's body or appearance

  - Dieting: individual's current dieting behavior

  - Body Mass Index (BMI): how an individual is physiologically under- or overweight

- ➢ Moderating Conditions:

  - Food type: perceivably healthy vs. unhealthy foods

  - Claim type paired with appeals: benefit-seeking vs. risk-avoidance HNR vs. taste attributed-based appeals

- ➢ Mediating Conditions:

  - Self-congruity: the value-expressive congruence between the product user image and the self-image

  - Functional-congruity: the match between the product's utilitarian attributes (performance-related) and the consumers' expectation of those attributes

➤ Advertising Responses:

- Claim believability: recipient's believability toward the information in an advertisement

- Attitude toward ad: recipient's favorability toward an advertisement

- Attitude toward brand: recipient's favorability toward an advertised brand

- Attitude toward brand: recipient's favorability toward an advertised product

- Purchase intension: recipient's plan to purchase an advertised product in the future

Using the self- and functional-congruity theoretical framework, the study examines a series of hypotheses and one research question regarding relationships among demographic/predispositional antecedents, food product types (healthy and unhealthy), HNR attribute-based appeal types (benefit-seeking and risk avoidance), consumer motivation conditions (self- and functional-congruity), and advertising- and product-related outcomes (e.g., product preference, attitude toward ad, attitude toward brand, and purchase intention) (see Chapter 2 and Appendix). The research builds on and extends prior investigations of questions related to HNR claims and food advertising effects (Choi 2008; Choi and Springston, in press).

The research is designed to accomplish four objectives: (1) to examine differential responses to advertisements in terms of the match or mismatch among attribute-based appeals and product type in food advertising; (2) to compare the influence of self- versus functional-congruities on consumer responses to food advertisements; (3) to examine how the mechanism of self- and functional congruities varies in ads for different categories of food products and attribute-based ad appeals; and (4) to identify and determine how individuals' various demographic/predispositional antecedents affect the mechanism of self- and functional-

congruities.

Basic Theoretical Assumptions

The theoretical and empirical underpinnings of this research are reviewed in detail in Chapter 2. Here a brief overview of the theoretical assumptions is presented.

The study is guided by several basic literature-based assumptions about the nature of food advertising and how consumers respond to food product ads. First, research has established that consumer motivations regarding food choice are associated with two separate orientations for health: benefit-seeking and risk-avoidance (Choi and Springston in press; Heimbach 1987; Guthrie et al., 1995, 2000; Dutta-Bergman 2004a, 2004b). In effect, consumers are motivated to seek foods that are healthy and to avoid foods that are unhealthy.

Second, HNR claims about products are used in food advertising to satisfy two basic consumer motivations. In ads, claims are made that tend to (1) emphasize the nutritional benefits (e.g.: more vitamin, mineral fortified) of an advertised product or (2) to reduce or minimize the presence of health risks (e.g.: low fat, less sodium) associated with the food product. The assumption is that these ad-based HNR claims, whether used as either a benefit-seeking or risk-avoidance attribute-based appeals, will enhance consumers' perceived healthiness of advertised food products (also see Choi and Springston in press).

The assumption regarding influence of HNR claims is supported by two streams of research. One stream involves the halo effect in food marketing. A halo effect is defined as the extent to which individuals tend to engender a cognitive bias or perceptual distortion based on individual attributes of a person or object (Thorndike 1920). According to the research, the presence of HNR claims cast as either benefit-seeking or risk-avoidance attribute-based appeals in a food ad will induce a halo effect. The halo effect has been found (1) to positively influence

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the perceived healthiness of a food product (Chandon and Wansink 2007; Roe et al. 1999; Wansink and Chandon 2006) or (2) to positively influence a perceived benefit or reduce a perceived risk of an advertised food product (see Choi and Springston in press; Alhakami and Slovic 1994).

The second research stream involves consumers' perception of the healthiness or unhealthiness of foods. Consumers have been shown to have intuitive perceptions regarding the healthiness of foods that influence their behaviors. Thus, this research expects that the effects of food ads with different HNR claims using benefit-seeking and risk-avoidance attribute-based appeals will be affected by how healthy or unhealthy a featured food product is perceived to be (also see Choi and Springston in press). According to Raghunathan, Naylor, and Hoyer (2006), consumers have an unhealthy = tasty intuition that influences them to evaluate perceivably unhealthy foods as tasty, and perceivably healthy foods as less tasty. In their research, the authors found that the association between the concepts of "unhealthy (healthy)" and "tasty (less tasty)" strongly operates at an implicit level; that is, even people who do not believe in "unhealthy = tasty intuition" make decisions as if they do believe in the phenomenon. In this context, this research expects that HNR claims paired with benefit-seeking and risk-avoidance attribute-based appeals will generate more positive advertising effects on perceivably healthy food products than taste attribute-based appeals, while the HNR claim-base attribute-based appeals will be less persuasive than the taste attribute-based appeals for perceivably unhealthy foods. This reasoning is based on the assumption that consumers are unbiased by their health-related propensities (also see Choi and Springston in press).

Thus, in this research, HNR claims are categorized into benefit-seeking and risk-avoidance attribute-based appeals to examine their differential influences on consumer

perceptions of healthy and unhealthy food products and ad-based responses (e.g., claim believability, attitude toward ad, attitude toward brand, and purchase intention).

Third, in addition to the above conceptual relationships between attribute-based appeals (benefit seeking and risk avoidance) and food types (healthy and unhealthy), this research further proposes self- and functional-congruity as a main theoretical framework to explain consumers' psychological processing of ads for different food categories by different attribute-based appeal types. A considerable amount of research has established that utilitarian and value-expressive (symbolic) conditions influence and mediate the information processing and purchasing motivations of consumers (Johar and Sirgy 1991; Snyder and DeBono 1985; Shavitt 1990, 1992; Sirgy et al. 1991, 1997). In an information context, a utilitarian condition exists when consumers are motivated to maximize functional rewards while minimizing punishments (negative consequences) (Johar and Sirgy 1991; Katz 1960). A value-expressive condition exists when consumers are motivated to maintain and enhance self-identity or image (Katz 1960). Thus, the concept of functional matching between product type and ad appeal (a.k.a.: utilitarian or value-expressive matching between copy and product) is strongly recommended in the creation of advertisements for specific brands (Shavitt 1990; Snyder and DeBono 1985).

The basic assumption in this research is that consumer purchasing motivations for food products might be affected simultaneously and differentially by utilitarian and value-expressive functions that are emphasized in food advertisements (also see Choi 2008). In this context, self- and functional-congruity theory (Johar and Sirgy 1991; Sirgy et al. 1991, 1997) is useful because both self- and functional-congruities positively predict consumer reaction to a specific food advertising simultaneously (Choi 2008). Here, self-congruity means the value-expressive congruence between the product user image and the self-image, while functional-congruity

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means the match between the product's utilitarian attributes (performance-related) and the consumers' expectation of those attributes (Johar and Sirgy 1991; Sirgy et al. 1991).

According to the congruity model, the balance of predictive power between self- and functional- congruity is dependent on product category and/or ad-appeal type (Choi 2008; Eriksen 1996; Han 2006; Sirgy et al. 1991). Thus, examining consumers' self- and functional-congruities in this research will address how the interrelationship between self- and functional-congruities differently predicts and explains consumer responses to ads for different food categories and different attribute-based ad appeal types. Evidence will indicate (1) whether consumer responses to food advertisements (relative to food types and attribute-based appeal types) are predicted more by the value-expressive (self) or by the utilitarian (functional) function, (2) the extent that consumer evaluations vary by different attribute-based ad appeals, and 3) to what extent information processing is influenced by different foods perceived as healthy vs. unhealthy.

In addition to using self- and functional-congruities to predict food advertisement responses, this research also tests how various individual characteristics influence elements of the proposed model. For example, Johar and Sirgy (1991) explained that audience-related factors (e.g.: audience involvement, audience prior knowledge) can influence the strength of self- and functional-congruity regarding consumer reactions to advertising (also see Sirgy and Johar 1999). Particularly for the food products, Van Kleef, Trijp, and Luning (2005) found that consumers prefer HNR claims involving personal relevant illness. In this research, it is proposed that key demographics and individual characteristics highly related with healthy dietary behavior and obesity might differently moderate consumer responses to food advertising.

Therefore, the study's model proposes that income, education, health consciousness, body esteem, dieting, and Body Mass Index (BMI) as moderator variables which might affect the predictiveness of self- and functional-congruities relative to consumer ad-related responses. Previous studies have shown that these factors have significant relationships with an individual's healthy dietary behavior and obesity problem (Drewnowski and Specter 2004; Drewnowski and Damon 2005; Dutta-Bergman 2005; Mckinley and Hyde 1996; Mendelson et al. 1996; WHO, 2013). By testing the relationship between the five antecedent variables and self- and functional-congruities, this research seeks to uncover if different groups of consumers, identified by specific antecedent characteristics, exhibit greater self- and functional- congruence and more favorable ad/product evaluations and outcomes, especially for unhealthy foods. It is hoped that the evidence will aid in the identification of consumer groups who might be more vulnerable to problematic HNR attribute-based appeals used in advertisements for unhealthy food products with poor nutrition-quality.

Research Approach

A multi-stage research procedure was executed to experimentally test a series of hypotheses and a research question (see Chapter 3) relative to the proposed model, namely the empirical relationships between individual propensities (income, education, BMI, health consciousness, body esteem, and diet), food product types (healthy and unhealthy), attribute-based ad appeal types (benefit-seeking vs. risk-avoidance vs. taste), consumer psychological motivations (self- and functional-congruities), and ad-related responses (e.g., product preference, attitude toward ad, attitude toward brand, and purchase intention).

In the first stage, a content analysis of issues of highly circulated 2007-2009 magazines was conducted to identify the most frequently used HNR claims in food advertisements. To

inform the research's experimental design, the identified HNR claims were then categorized into benefit-seeking and risk-avoidance attribute-based appeal types relative to consumer motivation orientations in accordance with legal requirements.

In the second stage of the research, two pre-tests were conducted with samples of consumers to 1) to identify and select healthy versus unhealthy food products (i.e., food products were classified based on perceived healthiness and unhealthiness) and 2) to identify and select utilitarian evaluative criteria associated with food choice. The identified benefit-seeking/risk-avoidance attribute-based appeals, healthy/unhealthy food types, and utilitarian evaluative criteria from the two stages were used to create ad stimuli for the third stage of the study, the experimental stage. In the second stage, manipulation checks for the created ad stimuli were also executed.

In the third stage, two 3 (benefit-seeking appeal vs. risk-avoidance appeal vs. taste attributed-based appeals) x 2 (healthy product vs. unhealthy product) between-subject design experiments were conducted (also see Choi and Springston in press). The procedures of the two experiments were similar, but carried out for different purposes. The first experiment used a student sample to preliminarily test the theoretical relationship between health halos and unhealthy=tasty intuition. The second experiment used a non-student sample to replicate the first experiment and additionally test the psychological mechanism of self- and functional-congruity in a more real world consumer setting (i.e., people from diverse demographic backgrounds).

Implications of the Research

Insights provided by the research results regarding the complex mechanism of self- and functional congruities and consumer response to food advertising have both theoretical and practical implications for the literature. Theoretically, the proposed research will substantially

advance the knowledge boundary on the use of HNR claims in food advertising and contribute to multiple streams of academic research on advertising, health communication and consumer psychology. In particular, the study will advance the established advertising literature on the functional matching effect (Shavitt 1990; Snyder and DeBono 1985) as it is related to the utilitarian and value-expressive functions of food product types and HNR claims in food advertising. Evidence on how self- and functional-congruity are affected by HNR claims will provide information on why consumers are attracted by such claims and how response tendencies are strengthened or lessened by different product, claim, and consumer types.

For public health officials, the findings will provide evidence on the side effects of HNR claim misuse (e.g.: unhealthy food ads with HNR claim). This information should be useful to policy officials and regulators as they deal with the aforementioned legal loopholes in current HNR claim stipulations. Additionally, the results will inform policy officials about some aspects of the role of food advertising in how consumers process and respond to measures for healthy and unhealthy foods, and indentify key individual characteristics (i.e., moderating factors) associated with consumers most vulnerable to advertisements for unhealthy food products (e.g., income, education). This information should be useful in the contexts of policy making and establishment of a research agenda for the collection of research data to address policy issues, programs, and initiatives.

For advertising practitioners, the results will assist in improving the planning and effectiveness of food advertising. Of special importance, the findings will directly address match-up appropriateness in ads by food product types (healthy vs. unhealthy) and HNR attribute-based appeal types (benefit-seeking vs. risk-avoidance) relative to self- and functional congruity. By knowing how congruity influences food ad-effects, advertising practitioners might

be better able to develop and tailor their creative strategies to activate either self- or functional congruity in consumer information processing of food advertising.

Chapters and Organization

In the following chapters, more detailed information about the research is presented. In Chapter 2, the relevant research literature is reviewed. Chapter 3 presents the hypotheses and research question derived from the literature review of Chapter 2. The details of the research method, including the research procedure, experimental design and administration, and measurement of variables, are described in Chapter 4. Chapter 5 reports the results of the study. Chapter 6 summarizes and discusses the research findings and their implications, and offers recommendations for future research.

CHAPTER 2

LITERATURE REVIEW

As noted in Chapter 1, the consumption of unhealthy food poses serious health problems for Americans. Of the many factors affecting these problems, food advertising has been identified as exerting a major influence on unhealthy eating behaviors such as the development of unhealthy eating habits, the over-consumption of foods at regular meal times, between-meal eating, and the consumption of too much processed and restaurant food, all which are associated with the twin problems of weight-gain and obesity.

Among other things, the U.S. food industry has been blamed for investing substantial amounts of money in food advertising that encourages consumers to eat unhealthy products more frequently, at inappropriate times, and in inappropriate places (Jeffrey and French 1998; Lobstein and Dibb 2005; Choi 2008). Consumer advocates have argued that ads for fruits, vegetables, and nutrition-related PSA are rare (Parker 2003; Bell et al. 2009; Powell et al. 2010), and that most of advertised foods are high in sugar, fat, sodium, and other unhealthy ingredients. They note that unhealthy food advertising is most common on television, the mass medium most often used by food companies (Harker et al. 2007).

To put the issue of the health and food advertising in perspective, consider the serious health problem of obesity and food industry advertising practices.

Obesity Pandemic in the U.S.

Obesity is defined as "a complex chronic disease developing from the interaction of multiple genetic, cultural, socioeconomic, behavioral, physiologic, metabolic, cellular, and

molecular factors" (Montague 2003, p. 56). Although obesity is caused by "an imbalance

between caloric intake and energy expenditure (Ogden et al. 2002, p.1731)," Montague's more

elaborate definition explains the complex nature of the obesity problem in U.S. society.

Indeed, obesity has become a serious pandemic in the U.S. over the last several decades.

About two thirds of U.S. adults are considered overweight or obese, and the prevalence of

obesity has not decreased over the last ten years, 1999 to 2008 (Flegal et al. 2010). Moreover,

considering that over 30% of children between the ages of 12 and 19 are at risk of being

overweight (Ogden et al. 2010) and that the rate of obesity among teenagers has tripled since

1980 (Livingston and Helsper 2006; Skelton et al. 2009), this chronic problem is likely to

continue in the future.

The obesity problem is receiving national attention not only because of its prevalence, but

also because of the several physical and mental problems it causes (Goodman and Whitaker

2002). More than 300,000 deaths every year are related to the effects of obesity (as cited in

Goodman and Whitaker 2002), and diet-related diseases account for about a half of the deaths in

the U.S., including cardiovascular diseases, obesity-related cancers, and diseases complicated by

diabetes (Flegal et al. 2007). Previous studies indicate that people with higher obesity are more

likely to have diet-related diseases (Flegal et al. 2007). At the same time, the obesity problem is

also related to symptoms of depression, which lead to various affective disorders, such as chronic

embarrassment, shame, and guilt (Goodman and Whitaker 2002; Friedman and Brownell 1995).

National Efforts against Obesity Pandemic

In response to the increasing spread of obesity, U.S. government agencies and health

organizations have made efforts to promote better dietary and exercise habits that increase health

and prevent obesity (see Mathios and Ippolito 1999; Nestle and Jacobson 2000; Parker 2003).

According to Nestle and Jacobson (2000), these efforts began in the 1950s.

At the beginning, obesity was considered a consequence of individual choice, so the focus of health education was only to encourage changes in individual behavior. Thus, national efforts into the 1970s were meant to reverse inactivity in the population. For example, a mass media campaign was implemented that focused on "milder forms of exercise such as stair-climbing, school physical education programs, walking, etc." (p. 15) However, since the *1977 Dietary Goals* report, which explained certain societal effects on dietary intake (e.g., TV advertising), the focus on trying to solve the obesity problems has moved away from individual behavior to social regulation and government action (as cited in Nestle and Jacobson 2000). Accordingly, the U.S. government has been trying to reduce weight problems through national health campaigns since the 1980s (Nestle and Jacobson 2000). For example, the U.S. Public Health Service (PHS) encouraged several public and private agencies to educate the population about healthy lifestyles and outlined a program of 10-year objectives for reducing the prevalence of obesity through improved nutrition and physical fitness (p. 15). Using these objectives, the Department of Health and Human Services (DHHS), the Center for Disease Control and Prevention (CDC), the National Institute of Health (NIH), and the Food and Drug Administration (FDA) were charged with designing and executing detailed plans to attack obesity.

To the disappointment of many, evidence suggests these national efforts were ineffective in curbing the epidemic increase in obesity during the 1980s to 2010s. According to data from National Health and Nutrition Examination Surveys of 1976-80 and 1988-1994, the rate of obesity rose from 25.4% to 34.9% among American adults, and was at 32.2% during 2007-2008 (as cited in Nestle and Jacobson 2000, p. 16; see also Flegal et al. 2010). In response to this alarming development, public health policy officials and researchers have begun to focus their

attention on prevention strategies in more recent years (Andrews et al. 1998, 2000; Nestle and

Jacobson 2000). As a result, legal regulations are now considered one of the most effective

strategies for reducing unhealthy external influences on food-related health problems, especially

the influence of food marketing and advertising (Andrews et al. 1998, 2000; Parker 2003).

Criticism of Food Advertising

The use of advertising by food companies has a long history in the United States

(Martinez 2007). Long before today's chronic obesity problem and other food-related health

problems were recognized, U.S. food companies engaged in major advertising campaigns to sell

their products. Today, food advertising is still a major part of the food marketing landscape.

According to data on domestic advertising spending by category (*Advertising Age* 2002,

2005, 2011), the U.S. food industry (including food, beverages, and candy) spent $8.54 billion in

2010. In 2001, the industry spent $5.82 billion. According to 2010 statistics, the U.S. food

industry was the 4th largest domestic ad spending category (7% of total advertising spending),

following the retail (12%), automotive (11%), and telecommunication (8%) categories (also see

Choi and Springston in press). Other data show that several food manufacturers, retailers, and

service companies were also among the top 50 ad-spending companies in the mid-2000s

(Martinez 2007, p. 35).

Most of these advertising dollars are spent in large consumer media. For example,

manufacturers of food and beverages spent the largest share of their 2010 media budgets on TV

advertising (57%), followed by ads in magazines (28%) and on the radio (3%) (*Advertising Age*

2011). Recently, these manufacturers have started to use non-traditional media, such as the

Internet, in-store advertising, and product placement, more frequently to promote food products

(Martinez 2007, p. 36).

Over this recent period, however, the U.S. food industry has been blamed for investing substantial amounts of money in advertising for energy-dense and less-nutritious food products. Critics contend that these expenditures lead consumers to engage in unhealthy dietary patterns that spoil balanced, varied, and moderated nutritional intakes (Jeffrey and French 1998; Lobstein and Dibb 2005; Nestle 2007). For example, Nestle (2007) has argued that the excessive advertising of fast food companies lead consumers to intake more calories than required. Hoek and Gendall (2006) posited that such unhealthy food advertising induces unhealthy eating behaviors while the extensive range of sales promotions including prompt trial and reward maintains consumption of unhealthy foods (p.409).

Indeed, Jeffery and French (1998) found most of TV food advertising (the most used medium by food companies) featured less nutritious products with too much fat, sugar, and calories, but few vitamins and minerals. Parker (2003) also found that fast food and combination food (frozen meals) advertisements made up more than one-third of total food advertisements appearing in high-circulated consumer magazines between 1998 and 2000. These advertising tendencies have been continuously demonstrated through the years (Bell et al. 2009; Lobstein and Dibb 2005; Powell et al. 2010), and several researchers and consumer advocate groups have continued to argue that unhealthy food product marketing perpetuates weight-gain and obesity trends in the U.S. (Harker, Harker, and Burns 2007; Nestle 2007).

Food Advertising Regulations for Health and Nutrition-Related (HNR) Claim Use

Responding to the increase in criticism of food marketing practices, the U.S. government legislated two acts in the 1990s meant to reduce the influence and/or reform the practices of unhealthy food advertising: the Nutrition Labeling and Education Act (NLEA) of 1990 and the Dietary Supplement Health and Education Act (DSHEA) of 1994 (see Mathios and Ippolito 1999;

Choi 2008; Choi et al. 2012). These acts require food companies to show correct nutrition information for food products. At the same time, the acts encourage food companies to produce healthier foods and provide specific guidelines for Health and Nutrition-Related (HNR) claim usage in food advertising to help consumers make more informed nutritional choices (Andrews et al. 1998; Kozup et al. 2003; Choi 2008; Choi et al. 2012; Choi and Springston in press).

Nutrition Labeling and Education Act (NLEA). The NLEA of 1990 granted the FDA authority (a) to require most food products to clearly show their nutrition facts and (b) to require that all HNR claims meet FDA regulations (Andrews et al. 1998, 2000; Parker 2003). By providing specific guidelines for content and display, the act increased the usefulness of nutritional information on food panels and thus the potential for consumers to make healthy, or at least more informed, choices (Kozup et al. 2003; Choi 2008). Of particular importance, the NLEA categorized HNR claims into nutrient-content and health claims and encouraged food marketers to use these claims in food advertising and other promotion with FDA permission (Parker 2003; Choi 2008; Choi et al. 2012). While nutrient content claims communicate the level of a particular nutrient found in foods (e.g., "fat free" and "calcium added"), health claims emphasize that a particular food can protect the consumer from diseases (e.g., "reduce the risk of heart disease") (Parker 2003; Choi 2008; Choi et al. 2012; Choi and Springston in press).

Dietary Supplement Health and Education Act (DSHEA). The DSHEA of 1994 enabled food marketers to use structure/function claims in addition to nutrient and health claims (FDA 2001; Parker 2003; Choi 2008; Choi et al. 2012). According to the DSHEA, food manufacturers can use structure/function claims to emphasize how a food/nutritional supplement influences the structure or function of the body while not mentioning any relationship to certain diseases (FDA 2001; Parker 2003; Choi 2008; Choi et al. 2012, p.423). Food and nutritional supplement

manufacturers do not have to obtain preauthorization from the FDA to use structure/function claims (Parker 2003; Choi 2008; Choi et al. 2012). Table 2-1 provides detailed information about these three types of claims.

[Table 2-1 about here]

While these regulations were designed to protect consumers by requiring food companies to show correct nutrition information, these stipulations also encouraged food companies to produce healthier foods (i.e., that HNR claims could be used in association with) (Kozup et al. 2003). Indeed, since these regulations came into effect, research suggests that U.S. citizens have been exposed to health information via media more than ever before. For example, Parker (2003) found that 41% of the food ads in highly circulated magazines appearing between 1998 and 2000 included at least one HNR claim type. Of product categories, bread, cereal, and fruit/juice were found to be the most frequent users of HNR claims. Choi et al. (2010) reaffirmed Parker (2003) in a study of food ads in highly circulated magazines between 2007 and 2009. The study found that 47% of the analyzed food ads contained at least one type of HNR claim. Additionally, Yoon et al. (2010) found that more than 70% of food commercials appearing in 2007 primetime network TV programming (i.e., ABC, NBC, CBS, and Fox) featured at least one type of HNR claim (also see Choi, Paek, and King 2012).

Criticism of HNR Claims Misuse

Although consumer media exposure to HNR claims in more probable in the 2000s than in the past, many researchers have expressed concern about HNR claims and their potential to mislead consumers (Andrews et al. 1998, 2000; Balasubramanian and Cole 2002; Chandon and Wansink 2007; Choi 2008; Choi et al. 2012; Choi and Springston in press; Kozup et al. 2003; Parker 2003; Roe, Levy, and Derby 1999; Wansink and Chandon 2006). It has been pointed out

by researchers that food marketers can emphasize HNR claims for products in advertisements even if those products contain unhealthy ingredients. Thus, the concern is consumers might believe that an advertised product contains healthy ingredients without recognizing that it also contains high levels of unhealthy ingredients, such as fat, cholesterol, and sodium (Choi et al. 2012; Choi and Springston in press; Nestle 2007; Roe, Levy, and Derby 1999; Heller 2001).

To partially address this concern, the NLEA allows any food category to use nutrient content claims when a specific ingredient includes 20% or more of the Daily Value (DV) per reference amount (NLEA 1994). However, it is not difficult for today's food companies to meet this requirement by easily and cheaply injecting artificial nutrients into almost any food product (e.g., vitamins and minerals into cola) (Choi et al. 2012; Nestle 2007).

Indeed, Andrews et al. (1998, 2000) found that even a simple disclosure of an HNR claim without detailed nutritional information might mislead consumers (also see Choi et al. 2012). Wansink and Chandon (2006) have reported that overweight consumers actually take in more calories from "low fat" labeled food products than regular products because of their tendency to underestimate the number of calories these products contain. Moreover, unlike nutrient content and health claims, structure/function claims do not require FDA pre-approval before market entry. Because food marketers can use structure/function claims in food ads without prior scrutiny, studies indicate that structure/function claims are used in food advertisement more often than health claims (Parker 2003; Choi et al. 2010, 2012).

In sum, the legal classification of HNR claims has established a hierarchy of regulation for food advertising, including pre-authorization (Choi et al. 2012). However, nutrient content claims and structure/function claims are a concern because they have relatively lower validation requirements than health claims, and thus have the potential to confuse and mislead consumers.

Re-Categorizing HNR Claims: Benefit-Seeking vs. Risk-Avoidance

Previous studies have investigated the legal loopholes in HNR claim stipulations. However, few studies have fully considered how consumers perceive and categorize HNR claims in advertising contact settings (e.g., Choi and Springston in press). Put another way, while previous studies have addressed, from a legal standpoint, how certain HNR claim types might be misleading (Andrews et al. 1998, 2000; Parker 2003; Chandon and Wansink 2007; Wansink and Chandon 2006), they have not focused on whether and how HNR claims might be differently perceived and categorized by consumers themselves (Choi and Springston in press).

This research takes the position that understanding consumers' psychological categorization of HNR claims is essential for two reasons. First, the results will show how consumers differentially respond to food advertising for different product types by different attribute-based appeal types. Second, the evidence will allow inferences of how food marketers use HNR claims to influence and/or motivate purchase decisions.

HNR Claims and "Health Halo". Regarding how HNR claims are perceived by consumers, several researchers have posited HNR claims in a food ad might produce a cognitive bias for the featured product, which they have labeled a "health halo." (Roe, Levy, and Derby 1999; Wansink and Chandon 2006; Choi and Springston in press). The argument is that HNR claims might induce the consumer to evaluate the HNR claimed food product higher on other attributes not emphasized in the claim (Roe, Levy, and Derby 1999; Chandon and Wansink 2007; Choi and Springston in press). In this sense, an HNR claim might truncate consumers' further information search about a product, leading to a greater likelihood that the consumer will attribute health benefits to the product (Roe, Levy, and Derby 1999; Choi and Springston in

press). For example, Chandon and Wansink (2007) and Wansink and Chandon (2006) have shown that "low fat" or "low calorie" HNR claims in unhealthy foods (chocolate) can be problematic. Their research has demonstrated that positivity bias from the health halo induces consumers to take in excessive calories from those products (also see Choi and Springston in press).

Food Selection Motivations. As noted in Choi and Springston (in press), the theoretical interpretation of the "health halo" can be further extended and explained relative to consumers' two basic food selection motivations: benefit-seeking and risk-avoidance. Accordingly, several researchers have empirically established that benefit-seeking and risk-avoidance needs motivate consumer food selection (Heimbach 1987; Guthrie et al. 1995; Dutta-Bergman 2005). First, Heimbach (1987) found that consumer food selection is motivated by the need both to seek nutritional benefits of good ingredients (e.g., vitamins and minerals) and to avoid bad ingredients (e.g., too much sugar and fat). Heimbach's initial evidence was confirmed by Guthrie et al. (1995) in a factor analysis using data from national samples. The research also identified two principal components of food choice: benefit-seeking and risk-avoidance motivations. While benefit-seeking motivations include the need to eat a variety of foods with adequate starch and fiber and at least six servings a day of breads, cereals, and other grain products, risk-avoidance motivations include the need to avoid eating foods with too much fat, salt, sodium, cholesterol, sugar, and saturated fat (Guthrie et al. 1995). Later, these two motivational dimensions were reflected in Dutta-Bergman's measurement of an individual's "healthy eating" (Dutta-Bergman 2005).

In the context of food advertising, the "health halo" is applicable to the way benefit-seeking and risk-avoidance attribute-based HNR appeals function to enhance the perceived

benefits or to reduce the perceived risks of the featured products (Choi and Springston in press). Alhakami and Slovic (1994) confirmed the inverse relationship between perceived benefit and perceived risk for people's assessment of certain objects and behaviors. Their study found that when people highly rate the perceived benefit of an object or behavior, they lowly rate the perceived risk of the object or behavior. In contrast, when people highly rate the perceived risk of an object or behavior, they lowly rate its perceived benefit. That is, the halo effect of strong benefit or risk leads respondents to exhibit cognitive bias toward the object or behavior, since the respondents want to establish cognitive consistency (also see Choi and Springston in press).

Given the inverse relationship, this research expects that benefit-seeking and risk-avoidance attribute-based appeals when paired with HNR claims in food ads will produce strong health halo effects by either enhancing perceived health benefits or reducing perceived health risks of advertised products. Further, it is expected that the cognitive biases generated by HNR paired appeals will enhance the perceived healthiness of advertised food products through either kind of attribute-based appeal type.

Use of Benefit Seeking and Risk Avoidance Attribute-Based Appeals. As mentioned in Chapter 1, based on consumers motivations to either seek benefits or avoid risk in food choice situations, this research makes the assumption that HNR claims are used in food product advertising either to enhance the appearance of nutritional benefit or to reduce the appearance of unhealthy risk. As a result, in contrast to legal HNR claim classifications (nutrient content claims, structure/function claims, and health claims), HNR claims can be additionally classified as claims with benefit-seeking and risk-avoidance attribute-based appeals (also see Choi and Springston in press).

Indeed, benefit seeking and risk avoidance attribute-based appeals can be perfectly paired with HNR claims because the claims have been legislated to enhance consumers' healthy dietary behavior by enhancing healthy food intake while reducing unhealthy food intake (NLEA 1994; Parker 2003; Andrews et al. 1998, 2000; Kozup et al. 2003). For instance, in terms of legal classification, the claims "fat free" and "vitamin C added" are nutrient content claims, "calcium builds strong bones" is a structure-function claim, and "reduce the risk of heart disease" is a health claim. However, in terms of benefit-seeking and risk-avoidance, "vitamin C added" and "calcium builds strong bones" are benefit-seeking attributes while "fat free" and "reduce the risk of heart disease" are risk-avoidance attributes.

In sum, based on benefit-seeking and risk-avoidance motivations, HNR claims might appear in food advertisements to appeal to consumers in two ways: (a) to emphasize the nutritional benefits of the advertised product or (b) to reduce the perceived risks unhealthy food attributes of the advertised food product.

"Unhealthy = Tasty" Consumer Intuition

Along with benefit-seeking and risk-avoidance HNR attributes, another factor must be considered: consumer perceptions of different types of food products and their relationship to the processing of food advertisements. Because of variation in food perceptions, benefit-seeking and risk-avoidance attributes might not be equally persuasive across all food types, especially with regard to healthiness (Choi et al. 2012). Considering consumers' intuitive perceptions of product categories, this research expects that the effects of benefit-seeking and risk-avoidance attribute-based appeals will be highly differentiated by the level of perceived healthiness of an advertised food product (also see Choi and Springston in press).

The expectation is based on research by Raghunathan, Naylor, and Hoyer (2006). They found that consumers believe that healthiness and tastiness are negatively correlated and that they apply an "unhealthy = tasty" intuition when making food choices. When a food product is perceived as unhealthy, consumers are likely to evaluate it as tasty; likewise, when a food product is perceived as healthy, they are likely to evaluate it as less tasty. The researchers also found that the association between the "unhealthy" and "tasty" concepts functions at an implicit level; that is, this "unhealthy = tasty" intuition occurs outside consumer awareness of consumption decisions in the context of food. Thus, the "unhealthy = tasty" intuition is so strong that it operates in decision situations without consumers' full cognitive attention and acknowledgement (also see Choi and Springston in press).

In the experimental context, as well as in the actual marketplace, "unhealthy = tasty" intuition competes with the "health halo" associated with featured claims in food ads. As a result, here the expectation is that "unhealthy = tasty" intuition will generally have a more powerful influence on consumers' food product choices than the "halo effect."

Research has shown that the congruity between an advertised product and mentally stored information cues is an important factor in maximizing advertising effects (Kamins 1990; Till and Busler 2000). In this sense, "unhealthy = tasty" intuition is knowledge and it is expected that either benefit-seeking or risk-avoidance attribute-based appeals in ads for food products perceived as unhealthy will not functionally match stored information about the foods because consumers equate good taste with unhealthy foods. Even in situations where benefit-seeking and risk-avoidance attribute-based appeals are able to enhance the perceived healthiness of unhealthy food products by affecting perceptions of perceived benefit or risk, consumers are likely to evaluate these HNR claims to indicate lower tastiness and thus the claims are likely to be less

persuasive than taste attributes. In contrast, there should be a functional match between benefit-seeking and risk-avoidance attribute-based appeals and product perceptions because unhealthy = tasty intuition might not dominate healthy = less tasty intuition for healthy foods (Raghunathan, Naylor, and Hoyer 2006; also see Choi and Springstion in press). Because consumer expectations of healthy food are not hedonic (taste) but utilitarian (healthy function) (Raghunathan, Naylor, and Hoyer 2006; Chandon and Wansink 2007), there is a greater likelihood that benefit-seeking and risk-avoidance attribute-based appeals produce positive effects for foods perceived to be healthy. However, this reasoning is based on the assumption that consumers are neutral and unbiased in terms of their health-related propensities and socio-economic status. If they are not, their "unhealthy = tasty" intuition is subject to change, an issue that will be discussed later.

Main Theoretical Framework

Based on the above conceptual relationship between HNR attribute-based appeals (benefit seeking and risk avoidance) and food product types (healthy and unhealthy), consumers' psychological processing of advertising for different HNR claims relative to different food products requires examination. From a theoretical perspective, self- and functional-congruity theory (Johar and Sirgy 1991; Sirgy et al. 1991, 1997) provides a useful conceptual framework for such an examination.

Self- and functional-congruity from functional matching effect

The self- and functional- congruity framework is based on the functional matching effect, which originated from Osgood and Tannenbaum's (1955) congruity theory. Congruity theory explains that when a person needs to decide between two contradictory objects (e.g., people, sets of information, concepts), the person tends to experience mental discomfort and pressure to resolve the dilemma. Conversely, when the two sets are similar or congruent, the person does not

experience mental discomfort or pressure to resolve the dilemma.

Developed from congruity theory, the functional matching effect in the advertising and marketing literature focuses on the match-up between product types and message appeal types (Shavitt 1990; Snyder and DeBono 1985; Sirgy et al. 1991). The functional matching effect attempts to delineate which types of persuasive appeals will be more effective under which conditions, and to identify the intrinsic psychological reason consumers experience the match-up effect with a certain combination of product types and message appeal types (also see Choi 2008). In the functional matching effect, consumers' psychological attitude is separated into value-expressive and utilitarian categories (Shavitt 1990; Snyder and DeBono 1985, 1987). This division derives from Katz's functional attitude theory (1960), another framework of congruity theory. In Katz's functional theory, individuals maintain or change their attitudes relative to four psychological functions: ego-defensive, knowledge, utilitarian, and value-expressive functions. Table 2-2 details the conditions under which these psychological functions arouse and change (also see Choi 2008, p.27-28).

[Table 2-2 about here]

According to Katz (1960), an individual may exhibit one or a combination of the above functions, depending on various underlying motives. In a communication setting, attitude change is thought to occur when there is a match-up between a persuasive message and underlying psychological motive.

Based on functional attitude theory, the functional matching effect hypothesis also suggests that a persuasive message should be matched with individual's psychological goals (Lavine and Snyder 1996; Shavitt and Nelson 2002; Choi 2008, p.29). In the advertising and marketing literature, research on the functional matching effect hypothesis has only included

utilitarian and value-expressive functions. Of the four functions, researchers have argued that

utilitarian and value-expressive functions are the most significant and relevant for consumer

processing and evaluation of advertising and brands (Johar and Sirgy 1991; Chandon, Wansink,

and Laurent 2000; Shavitt 1990; Snyder and DeBono 1985, 1987; Choi, Yoon, Paek, and Reid

2011; Choi 2008). Although researchers have used various terms in reference to similar subject

matter, these terms have been commonly used to explain value-expressive and utilitarian

functions in the functional matching effect literature (Choi 2008; see Table 2-3).

[Table 2-3 about here]

By way of example, Shavitt (1990, 1992) found the functional matching effect between

product categories and ad appeal types in two studies. Following participants' placement of

various products into social identity (value-expressive) and utilitarian categories, she assessed

the favorability of ad appeal types based on the two functions. The research found that

participants favored utilitarian appeals for utilitarian products, whereas they favored value-

expressive appeals for value-expressive products (also see Choi 2008, p.30).

Similarly, Snyder and DeBono (1985) examined the behavioral responses toward two

types of advertisements using ads that emphasized a product's image (value-expressive appeal)

and ads that emphasized a product's quality (utilitarian appeal). The purpose of their study was

to examine individual differences in the processing of the ads. The study found that high self-

monitoring individuals showed more favorable reaction and greater purchase intention for

advertisements using value-expressive appeals than the advertisements using utilitarian appeals.

In contrast, low self-monitoring individuals preferred advertisements using utilitarian appeals to

advertisements using value-expressive appeals. Although their study investigated the interaction

between self-monitoring theory and the functional matching effect hypothesis, the results

demonstrated how value-expressive and utilitarian messages function in advertising across different product categories (also see Choi 2008, p.29-30).

However, considering the purpose of the present study is to investigate consumers' psychological processing for a mixture of different attribute-based appeals paired with HNR claims and product types in food advertising, the theoretical assumptions used in the above studies are problematic in two ways.

According to Choi (2008, p.31), the first problem is the determination of the functional role of the ad appeals. That is, knowing which attribute-based appeal type (benefit-seeking vs. risk-avoidance vs. taste) distinctively stimulates which functional attitude (value-expressive vs. utilitarian) in the consumer mind is highly problematic. For example, when consumers are exposed to either a benefit-seeking or a risk-avoidance appeal in a food advertisement, the nutrient attribute in the ad copy might stimulate the utilitarian function, but it might also influence the value-expressive function (i.e., might think these attributes are consistent with self-image). In the same way, when consumers are exposed to a taste attribute, they might engage in dual information processing: (a) how much the taste of a certain food is important (utilitarian function) and (b) to what extent enjoying the taste of the food is consistent with their self-image (value-expressive function). Thus, benefit-seeking attribute, risk-avoidance attribute, and taste attributes are difficult to distinguish by utilitarian and value-expressive functions alone. Rather, as Katz (1960) suggests, an individual might engage in combined evaluation of the advertising attribute-based appeals, depending on the underlying motives of the individual's value-expressive and utilitarian functions together (Choi 2008, p.31).

Choi (2008, pps. 31-32) also indicates that the second problem is determination of the functional role of the food product types. Similarly, the purchase motivation for healthy and

unhealthy food products is not distinctively categorized into utilitarian and value-expressive functions. When consumers make purchase decisions about healthy or unhealthy foods, knowing which product type distinctively stimulates which functional attitude (value-expressive vs. utilitarian) is difficult to determine. An individual might engage in a combined evaluation of healthy and unhealthy food products, depending on the underlying motives of the individual's value-expressive and utilitarian functions. Taken together, the psychological process through which consumers receive advertising messages and the reason they choose a certain healthy or unhealthy food product is not known.

Indeed, Shavitt (1989, 1992), Snyder and DeBono (1985, 1987) focused on the match-up effect between message types and product types, where the message and product types were distinctively perceived as utilitarian or value-expressive (Choi 2008, p.33). Therefore, their theoretical methodologies are not applicable to this research because the attribute types (benefit-seeking attribute vs. risk-avoidance attribute vs. taste attribute) and product types (healthy vs. unhealthy product) are not exclusively divided as value-expressive and utilitarian (Choi 2008, p.33). Moreover, these previous studies did not identify the extent to which each psychological function shapes a consumer's advertising-related reactions when ad appeal and a product type match, and the studies only used treatments that are distinctively divided as value-expressive and utilitarian (Choi 2008, p.33).

Thus, as argued by Choi (2008), the psychological reason for any response to various food adverting types could be predicted by a value-expressive function, a utilitarian function, or a combination of both. If both functions in combination generate the functional matching effect, the extent to which each function determines the psychological reason behind the response needs to be identified. In sum, a more advanced functional matching approach than the dichotomous

application of value-expressive and utilitarian functions is needed to address the problem more accurately (also see Choi 2008).

Satisfying this need, self- and functional-congruity theory provides an appropriate theoretical framework for examining functional matching effects. Resembling other functional matching approaches using value-expressive and utilitarian appeals as influencers of consumer behavior (Park, Jaworski, and MacInnis 1986; Shavitt 1990, 1992; Snyder and DeBono1985), Sirgy et al. (1991, 1997) studied the functional matching effect in terms of self- and functional-congruity, positing two conditions: (1) when a product has strong value-expressive functions, audience persuasion is predominantly predicted by self-congruity, but (2) when a product has strong utilitarian functions, audience persuasion is predominantly predicted by functional-congruity (also see Choi 2008, p.30). Therefore, greater persuasion is achieved by greater congruence between the product-user image and self-image and/or by greater congruence between utilitarian beliefs about the actual brand and the referent beliefs (Johar and Sirgy 1991; Choi 2008, p.31). Moreover, the approach demonstrated that concepts can be measured at the level of each type of congruity for brand or product (Sirgy et al., 1991, 1997; Han 2006) applying a causal model to predict consumer reactions (Sirgy and Samli 1985; Sirgy et al. 1991; Han 2006; Choi 2008). The following sections introduce the definitions and measurements of the congruity types and describe how these congruities, in combination, might predict consumer reactions.

Definitions and measurements of self- and functional-congruity

Self-congruity and its measurement. According to Johar and Sirgy (1991), self-congruity is defined as "the match between the product's value-expressive attributes (product-user image) and the audience's self-concept" (p. 24; also see Johnson 1984, Munson and Spivey 1981; Myers

1976; Sirgy 1982). In this definition, "product-user image" refers to "the stereotype the audience has about the typical user of a certain product" (Johar and Sirgy 1991, p.24) whereas "the audience's self-concept" refers to the self-perception of the audience along image dimensions related to the product user (Sirgy et al. 1997). Thus, consumer behavior is determined partly by the psychological congruence between the product-user image and the consumer's self-concept (Sirgy et al. 1997). Higher levels of self-congruity for a certain brand or product predicts more favorable consumer behavior, including positive brand attitude, higher purchase intension, etc. (Sirgy et al., 1997; Sirgy 1982, 1985).

In the context of advertising, Johar and Sirgy (1991) explained that a value-expressive ad appeal involves building a "personality" or "self-image" of the generalized user of the advertised product/brand so that audience persuasion is influenced through self-congruity. Thus, value-expressive ad appeals are appropriate for value-expressive products, for consumers are likely to think they are maintaining or enhancing their self-concept when purchasing these products.

Self-congruity is divided into four types (Sirgy 1985; Johar and Sirgy 1991; Choi 2008, p.34):

1. Actual self-congruity: Congruence between the product-user image and the audience's actual self-image. Here, an actual self-image means an image that an individual has of himself or herself.
2. Ideal self-congruity: Congruence between the product-user image and the audience's ideal self-image. Here, an ideal self-image means an image that an individual aspires to have.

3. Social self-congruity: Congruence between the product-user image and the audience's social self-image. Here, a social self-image refers to beliefs about how one is viewed by others.

4. Ideal social self-congruity: Congruence between the product-user image and the audience's ideal social self-image. Here, an ideal social self-image is defined as how one aspires to be viewed by others.

Therefore, Sirgy et al. posited that a higher congruence between the product-user image and a certain type of self-image increases the probability of attitude change or persuasion through satisfaction of various needs that an individual has: "(1) self-consistency needs for actual self-congruity; (2) self-esteem needs for ideal self-congruity; (3) social consistency needs for social self-congruity; and (4) social approval needs for ideal social self-congruity" (Sirgy 1982, 1985; Johar and Sirgy 1991; Choi 2008, p.34-35).

Of these four self-congruity-types, researchers have frequently used actual and ideal self-congruity collectively to construct a total self-congruity in predicting consumer behavior (Choi 2008, p.35; Sirgy 1983, 1985; Sirgy et al.1991; Hattie 1992; Han 2006) because: (a) maintaining and enhancing the self is an important human objective and the objective influences on human behaviors and (b) consumers behave in ways that enhance and maintain self-concept (Choi 2008, p. 35; Han 2006). From this point of view, when a consumer exhibits high actual self-congruity for an ad, he/she might think that the message and product in the ad will help maintain his/her self-concept, likely enhancing advertising-related responses (Choi 2008, p.35). Likewise, when a consumer exhibits high ideal self-congruity for an ad, he/she might think that the message and product in the ad will help enhance his/her self-concept, likely raising advertising-related evaluations (Choi 2008, p.35). Indeed, Sirgy (1985) and Han (2006) found that the effects of

actual and ideal self-congruity on brand preference and purchase motivation are additive.

Additionally, other studies have used both actual and ideal self-images to predict brand

preference (Dolich 1969; Ross 1971; Delozier and Tillman 1972).

In the present study, recognizing that food choice is predominantly caused by individual

rather than social reasons (Neumark-Sztainer, Story, Perry, and Casey 1999; Pollard, Kirk, and

Cade 2002), measuring actual self- and ideal self-congruity is considered an appropriate method

for estimating total self-congruity relative to response to food advertising. From the advertising

and marketing literature, the position is taken that (1) self-congruity reflects consumers' value-

expressive function toward an ad, a brand, or a product; (2) greater congruence between product-

user and consumer's self-image leads to more favorable consumer behavior; and (3) measuring

actual and ideal self-congruity is an effective method for estimating the self-congruity of

consumers.

The measurement of self-congruity has a long history of development. At first, the

traditional method of assessing self-congruity was based on tapping subjects' perceptions of

product-user image and perceptions of self-image relative to a predesigned set of image

attributes and then adding the self-congruity scores across all image attributes (Sirgy et al. 1997,

p. 229; Sirgy 1982, 1985a). However, according to Sirgy et al. (1997), this traditional method

had several reliability and validity problems, including the fact that it did not include any

reference to psychological congruity experience (p.231). Thus, they developed an alternative

method based on "tapping the psychological experience of self-congruity." (p.227) By measuring

consumer psychological self-image congruence for brand or product directly and globally, the

alternative method achieved stronger reliability and predictive validity in measuring self-

congruity than the traditional method (i.e., asking about respondents' product-user image, self image, and perception of congruity with the predetermined images separately) (see Table 2-4).

[Table 2-4 about here]

Functional-congruity and its measurement. Functional congruity refers to the use of utilitarian evaluative criteria, defined as "the match between the beliefs of product utilitarian attributes (performance-related) and the audience's referent attributes" (Johar and Sirgy 1991, p.26). In the definition, "utilitarian attributes" refer to the actual performance characteristics of the product and "referent attributes" are the important criteria used to estimate the performance characteristics (Johar and Sirgy 1991, p.26). Functional-congruity is named not only as a parallel with self-congruity, but also to indicate that the underlying psychological process of functional-congruity is similar to that of self-congruity (Sirgy et al. 1991). That is, both self-congruity and functional-congruity are evaluated by assessing attributes of a particular brand/product against some referent attributes (Sirgy et al. 1991). The referent attributes will be actual and/or ideal self-image in self-congruity, while performance-related utilitarian attributes will be the referent attributes in functional-congruity (Sirgy et al. 1991).

Functional congruity is emphasized by utilitarian ad appeals because they inform consumers about "one or more key benefits that are perceived to be highly functional or important to target audiences." (Johar and Sirgy 1991, p. 23) Thus, utilitarian ad appeals are appropriate for utilitarian products, for consumers might think about the superiority of the functional features when purchasing these products. For example, a specific brand of milk might be evaluated along a set of utilitarian attributes such as quenching thirst, healthiness, energy, and taste. Across these dimensions, while consumers might have beliefs about the advertised brand's characteristics, they also have referent standards used to judge the relative goodness of their

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beliefs about the advertised brand. In other words, one ad for milk brand A might emphasize higher calcium content while an ad for milk brand B might emphasize better taste. If consumers consider calcium content to be more important for milk, then they might have more functional congruity on brand A than on brand B. Because Brand A has more utilitarian value, there is a greater likelihood that these consumers will be persuaded by the Brand A advertisement (e.g., more like to buy the product). In sum, the greater the congruence between the utilitarian attributes of a certain brand/product and the consumers' referent beliefs about those attributes, the greater the likely persuasion effect. (Choi 2008, p.36).

However, different from the measurement of self-congruity, the measurement of functional-congruity (utilitarian function) is based on multi-attribute attitude models, such as the belief-evaluation model, the belief-importance model, the belief-only model, the extended belief-evaluation model, and the ideal point model (Bass and Talarzyk 1972; Johar and Sirgy 1991; Sirgy et al. 1991; Miniard and Cohen 1983; Oliver and Bearden 1985; Shimp and Kavas 1984). These researchers all assume that attitude change is more likely to occur when the object of evaluation is highly valued rather than lowly valued. In this sense, Sirgy et al. (1991) and Johar and Sirgy (1991) explained that functional-congruity and multi-attribute models are consistent in that an attitude is the outcome of the degree of individual satisfaction about each functional attribute (also see Han 2006; Choi 2008). Moreover, since the origin and goal of utilitarian function is maximizing external rewards and minimizing punishments (Katz 1960, p.192), it makes sense that the attitude toward utilitarian function is based on a summated evaluation of products' performance-related attributes (Sirgly et al. 1991; Johar and Sirgy 1991; Shavitt, 1992).

Among the several multi-attribute attitude models assessing functional-congruity, this research employed the belief-importance model because both belief strength and importance

weight were considered as additive and equally significant (see Rosenberg 1956 and Fishbein 1963). In this research, calculating functional-congruity (multi-attribute attitudes) consists of an individual's expectations (belief) toward an advertised product and value (weighted importance) for the product in general, as represented in the following formula:

$$\text{Functional-congruity} = \Sigma \, \text{Belief} \times \text{Importance}$$

Indeed, several studies have been used to measure the utilitarian function of attitude or functional-congruity. Bass and Talazyk (1972) proved that the summated index of the belief-importance model positively predicted consumer brand preference for several product categories. Sirgy et al. (1991) also used the belief-importance model to assess functional-congruity. Among the four studies using multi-attribute attitude models, they used the belief-importance model in the second and third studies to measure consumers' functional congruity. Han (2006) and Choi (2008) also used the belief-importance model to assess the functional-congruity predicting consumers' brand attitudes and ad responses.

In sum, functional-congruity represents consumers' utilitarian function in response to an ad, a brand, or a product (Choi 2008, p.38). Greater congruence between a product's functional attributes and the consumer's expectations of those attributes leads to more favorable consumer behavior (Choi 2008, p.38; Johar and Sirgy 1991). However, in contrast to measuring self-congruity by tapping consumer psychological experience, functional-congruity is assessed as a summed-index based on a specific expectancy-value model.

The causal model of self- and functional- congruity on ad responses

Based on the above literature, the reason for using self- and functional-congruity theory in this research is that the theory can measure and compare the predictive power of self- and functional-congruity on the evaluation of a food product or brand (Sirgy et al. 1991; also see

Choi 2008). Indeed, causal models based on self- and functional-congruity theory have been tested by researchers to determine if interrelationships between self- and functional-congruity are predictive of consumer behaviors (Sirgy and Samli 1981; Sirgy et al. 1991; Chon and Olsen 1991; Ericksen 1996; Sirgy and Johar 1999; Jamal and Goode 2001; Han 2006; Choi 2008).

[Figure 2-1 about here]

Sirgy and Samli (1981) first posited a causal model predicting consumer behavior based on self- and functional-congruity. According to their early model, while there is no direct effect of self-congruity on consumers' store loyalty, the indirect effect of self-congruity on consumer behavior exists through functional congruity. This early model was further developed by Sirgy et al. (1991) as a triadic interrelationship in which self- and functional-congruity predict consumer behavior together and self-congruity influences functional-congruity (see Figure 2-1; also see Choi 2008).

Using this advanced model, Sirgy et al. (1991) focused on the causal relationship between these two congruities and how these congruities simultaneously predict behaviors such as attitude toward brand and product and purchase intention. Using a set of regression analyses, they found that, though functional-congruity predicts consumer behavior more strongly than self-congruity, consumer behavior and functional-congruity are both predicted by self-congruity (Sirgy et al. 1991; also see Choi 2008).

The theoretical reasoning behind Sirgy et al.'s (1991, 1997) advanced model of the triadic relationship between self-congruity, functional-congruity, and consumer behavior is based on the fact that self-congruity, having a value-expressive function, is more affectively based, whereas functional-congruity, having a utilitarian function, is more cognitively based (Choi et al. 2011; McGuire 1976; Katz 1960; Ratchford 1987). Namely, the model assumes that when

consumers evaluate an ad for a utilitarian product, their information processing is more cognitive-oriented due to the need for utilitarian performance relative to one or more of the product's functional attributes. Conversely, it is assumed when consumers evaluate an ad for a value-expressive product, their information processing is more affectively oriented because a value-expressive motive to maintain or enhance self-image is dominant and activated (Choi et al. 2011; McGuire 1976; Ratchford 1987; Katz 1960).

Consistent with this line of reasoning, Johar and Sirgy (1991) also noted that the relationship between self- and functional-congruity in consumer behavior is similar to the mechanism of central and peripheral routes to persuasion in the Elaboration Likelihood Model (ELM) (Petty and Cacioppo 1986). Accordingly, a self-congruity route to persuasion might be viewed as a form of peripheral processing because consumers are more involved with peripheral cues, such as source cues that are more value-expressive and affective, than with the quality of the message argument. In contrast, a functional congruity route to persuasion might represent a form of central processing because consumers tend to cognitively evaluate the quality of the message argument, which involves the functional attributes of the product (Choi et al. 2011; McGuire 1976; Ratchford 1987). Thus, Sirgy et al. (1991) argued that both self- and functional-congruities will predict consumer behavior, noting that both peripheral and cognitive routes in the ELM model are likely to enhance audience persuasion.

Furthermore, Sirgy et al. (1991) posited that self-congruity affects functional-congruity while both congruities predict consumer behavior. Specifically, they argued that consumer processing of the functional attributes of a brand or product is affected by "the positive or negative motivational tendency developed through processing self-related or symbolic attributes." (p. 365) Because self-image schemes are more abstract, accessible, and likely to be processed

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before concrete schemes, Sirgy et al. (1991) noted the evaluation of self-congruity will occur prior to conscious evaluation of the brand or product's functional attributes (functional-congruity). Hence, pre-determined self-congruity also positively or negatively influences the evaluation of functional-congruity because consumers are likely to form new beliefs that are consistent with their self-concept and are less motivated to form beliefs that are inconsistent with their self-concept (Sirgy et al. 1991; Nisbett and Ross 1980; Snyder 1979).

Moreover, this theoretical reasoning is also supported by previous cognitive and affective information processing literature. Fabrigar and Petty (1999) found that affect-based attitudes influence cognition-based attitudes, and Shiv and Fedorikin (1999) found that affective reactions occur before cognitive reactions (also see Eisend and Langner 2010).

In sum, the advanced causal model for self- and functional-congruity explains that consumer behavior is predicted by both self- and functional-congruity while functional-congruity is also influenced by self-congruity. This causal path is strongly supported by previous research.

Although the causal directions between self-congruity, functional-congruity, and consumer behavior are generalized, the model does reliably indicate which type of congruity has more power to predict consumer behavior. The initial idea of Sirgy et al. (1991) was that consumer behavior is more strongly predicted by functional-congruity than self-congruity. Although the influential power of self-congruity on consumer behavior is significant, its direct effect on consumer behavior is relatively weaker. As a result, at times the direct effect of self-congruity on consumer behavior cannot be observed. Sirgy et al. (1991) demonstrated this idea through a set of surveys that measured attitudes/intensions toward a variety of products (e.g., department stores, automobiles, cameras, tires, watches, soft drinks, TVs, beer, and headache remedies).

Other research using the congruity framework found somewhat inconsistent results depending on product categories (Chon and Olsen 1991; Ericksen 1996; Sirgy and Johar 1999; Jamal and Goode 2001; Han 2006). Han (2006) explained that product categories might be another factor predicting consumer behavior (brand preference) because consumers exhibit different perceptions and buying behaviors toward different product categories (Kotler and Armstrong 2001; also see Choi 2008).

Additionally, research indicates the role of attribute-based ad appeals should also have a significantly influential role in the findings of the current study, where advertising stimuli is used as treatments rather than brands and products alone (Choi 2008). Here, the expectation is perceived self-congruity and functional-congruity for the food advertising stimuli should change not only with product type (healthy vs. unhealthy), but also with attribute-based appeal type (benefit-seeking vs. risk-avoidance vs. taste). As a result, this study observes (a) how self- and functional-congruity predict ad-related responses and (b) which type of congruity has greater predictive power for consumer behavior in different ad stimuli conditions, and (c) predicts that consumers' self- and functional-congruity, differentiated by each combination of food product and ad message, should differently predict various ad-related responses and outcomes (e.g., claim believability, attitude toward ad, attitude toward brand, attitude toward product, and purchase intention) (also see Choi 2008).

Few studies have used the theoretical framework regarding the relationship between self- and functional-congruity and dependent variables to test ad-related responses, especially attitude toward advertising (Choi 2008). However, considering that previous studies have found both affective feeling (Mitchelle and Olson 1988; Madden, Allen, and Twible 1988; Stayman and Aafer 1988; Chattopadhyay and Basu 1990; Golden and Johnson 1984; Batra and Ray 1986) and

cognitive elaboration (Mackenzie and Lutz 1989; Greenwald and Leavitt 1984) influence attitude toward advertising (also see the meta-analysis of Brown and Stayman 1992), the current study expects that attitude toward advertising will be predicted by self-congruity, because it is affectively based, and functional-congruity, because it is cognitively based. Additionally, if self- and functional-congruity predict attitude toward advertising, the expectation is other related types of ad response, such as claim believability, attitude toward brand, attitude toward product, and purchase intension, should be influenced because they significant correlate with attitude toward advertising (Brown and Stayman 1992) .

The Influence of Individual Propensities on Food Ad Responses

Based on the above theoretical framework, this study also posits that differences in individual characteristics and situational conditions affect the triadic relationship between self-congruity, functional-congruity, and response to food advertising. Past research has posited and found that individual differences affect self- and functional-congruity with a product.

Johar and Sirgy (1991) explained how audience-related determinants can impact a product's value-expressiveness and utilitarian quality. They suggested that self- and functional-congruity can be adjusted depending on an individual's involvement with and knowledge about a product. This conception was detailed by Sirgy, Grewal, and Mangleburg (2000) that various environmental and situational factors involving consumer's self-image and utilitarian attribute (i.e.: knowledge, prior experience, involvement, and time pressure) can moderate the predictive power balance between self- and functional-congruities on consumer responses. A follow-up study of Sirgy and Johar (1999) supported this notion, finding that the predictive power of self-congruity and/or functional-congruity on brand attitude increased as an individual's brand conspicuousness, differentiation, and involvement increased. Malär, Krohmer, Hoyer and

Nyffenegger (2011) also partially supported this conception that consumer's actual and ideal self-congruities on emotional brand attachment are moderated by consumers' product involvement, self-esteem, and public self-consciousness.

In this context, it is expected that various individual differences regarding food and health issues, caused by environmental, physiological, psychological, and situational reasons, will differentially affect self-congruity, functional-congruity, and food advertising processing. Specifically, the key individual differences of income, education, Body Mass Index (BMI), health consciousness, body esteem, and current dieting situation are proposed as influential factors.

Income and Education. Researchers have established that disparities in income and education are related to many health inequalities in the U.S., especially the obesity problem (Drewnowski and Specter 2004; Drewnowski and Darmon 2005; Johnson-Down et al. 1997). These researchers have found that low income and education levels correspond to health status and baseline weight problems. For example, Drewnowski and his associates (2004, 2005), reported that the highest rates of obesity are more likely to arise among the highest poverty groups with lowest income and education level. Low income and education levels were found to correlate with food insecurity problems because of the inverse relationship between energy density and energy cost. They also found poor and less educated people, who have less money to spend on food, were more likely to have inadequate healthy food consumption and lower-quality diets. Base on these findings, it can be assumed that consumers with low income and low education level might have weaker predictive effects of self-congruity and functional-congruity on the ads for foods perceived to be healthy or with ads that include HNR attribute-based appeals, because these food products are inconsistent with their general diet and they have relatively less

chance to get the education of functional benefit of advertised nutrients.

Body Mass Index. Body Mass Index (BMI) is defined as the extent to which individuals are physiologically under- or overweight (WHO 2013). Here, BMI is posited as an individual physiological factor that influences the way a consumer processes and evaluates food advertising.

As people become overweight, their BMI index increases. The World Health Organization (WHO 2013) has identified seven levels of BMI, indicating how far an individual's weight deviates from his/her normal or recommended weight per one's height: severely underweight, underweight, normal, overweight, obese class I, obese class II, and obese class III (WHO, 2013). For example, a BMI of 25-29.9 is classified as overweight and a BMI over 30 is classified as obese.

Considering that obesity is caused by an imbalance between "caloric intake and energy expenditure" (Ogden et al. 2002, p.1731) and that people tend to have more unhealthy dietary habits as their BMI increases into the overweight and obese levels (Harker, Harker, and Burns 2007), the current study assumes that consumers who are overweight or obese will exhibit weaker association between self-congruity and ads for foods perceived as healthy or food ads that use HNR attribute-based appeals, than the consumers who are not overweight. Plus, for those consumers who are overweight and obese, they will not think the healthy benefits from the ads for foods perceived as healthy or food ads as equally important as the consumers who are not overweight.

Health Consciousness. An individual's health consciousness is proposed as a psychological factor moderating the predictive effects of self- and functional-congruity on ad responses. According to Dutta-Bergman (2004a, 2004b, 2005), health consciousness is the

"individual's intrinsic motivation to maintain good health, reflecting his or her enduring involvement in health matters." (Dutta-Bergman 2005, p.3) The health conscious individual tends to be cognizant of health resources and information and is therefore usually more engaged in health-enhancing lifestyles, such as eating healthy, exercising, weight control, and unhealthy substance avoidance (Dutta-Bergman 2004b, Ardell 1977; Kraft and Goodell 1993). Thus, the current study assumes that because health conscious consumers are more careful of what they eat and focus more on the healthy benefits from food products, either benefit-seeking or risk-avoiding HNR attribute-based appeals will be more important to them, as well as food products perceived to be healthy.

Body Esteem. Body esteem, defined as "self-evaluation of one's body or appearance" (Mendelson, Mendelson, and White 2001, p.90), might also be a psychological factor affecting self-congruity and functional-congruity. The concept of body esteem is a sophisticated domain of self-esteem that has been studied in overweight individuals (Mendelson, White, and Mendelson 1996). Previous studies indicate that obese people have poorer body esteem than their normal-weight peers, a condition that is frequently associated with unhappiness (Mendelson et al. 1996; Allon 1979; Hendry and Gilies 1978). Therefore, it can be thought that food products perceived to be healthy in ads or foods advertised using risk-avoidance attribute-based appeals (e.g.: low calorie, low fat) could be an ideal option to enhance their body-esteem. In addition to the emotional reason related to self-congruity, people having lower body-esteem might also focus on the functional benefits provided from food products perceived to be healthy in ads or foods advertised using risk-avoidance attribute-based appeals (e.g.: low calorie, low fat), since they want to increase their body-esteem by reducing their weight.

Current Diet Behavior. An individual's current dieting behavior is a situational factor that could possibly influence self-congruity. Because obesity is directly caused by "an imbalance between caloric intake and energy expenditure" (Ogden et al. 2002; p.1731), the purpose of dieting is to lose weight by reversing the imbalance between caloric intake and energy expenditure. Thus, lower calorie intake and more energy expenditure might be the goal of individuals who are dieting. Thus, ads for food products perceived to be healthy (having low energy density) or that are advertised using risk-avoidance attribute-based appeals might strengthen the predictive effects of self- and functional-congruity on ad responses among individuals who are dieting or concerned about dieting.

In the next chapter, hypotheses and a research question derived from the reviewed literature are presented.

CHAPTER 3

HYPOTHESES AND RESEARCH QUESTION

Ten hypotheses and one research question were posed to test the predictive role of self- and functional-congruity in food advertising in relationship with key moderator variables (individual propensities), independent variables (food and attribute-based appeal types), and dependent variables (ad-related responses). As noted previously, the hypotheses and research question were derived from the literature reviewed in Chapter 2.

[Figure 3-1 about here]

To serve as a conceptual guide, Figure 3-1 presents the employed prediction model of self- and functional-congruity, illustrating the overall relationship between the variables.

Food Type by Attribute-based Appeal Type: Hypotheses 1 and 2. The conceptualization emphasizes the moderating role of various combinations of food types (healthy vs. unhealthy) and HNR attribute-based appeal types (benefit-seeking vs. risk-avoidance vs. taste) derived from the research on health halos (Roe, Levy, and Derby, 1999) and "unhealthy=tasty" intuition (see the bracket of independent variables) (Raghunathan, Naylor, and Hoyer 2006). Two hypotheses are posed regarding the expected moderating roles of independent variables in affecting ad responses (i.e., claim believability (hereafter Cb), attitude toward ad (hereafter Aad), attitude toward brand (hereafter Ab), attitude toward product (hereafter Ap), and purchase intension (hereafter PI), (Choi and Springston 2011Andrews et al. 1999, 2000; Kozup et al. 2003):

> H1: Controlling individual propensities, healthy food product ads with benefit-seeking attribute-based appeals and unhealthy food product ads with taste attribute-based

appeals will have greater (a) Cb, (b) Aad, (c) Ab, (d) Ap, and (e) PI responses than will healthy food product ads with taste attribute-based appeals
and unhealthy food product ads with benefit-seeking HNR attribute-based appeals.

H2: Controlling individual propensities, healthy food product ads with risk-avoidance HNR attribute-based appeals s and unhealthy food product ads with taste attribute-based appeals will have greater (a) Cb, (b) Aad, (c) Ab, (d) Ap, and (e) PI responses than will healthy food product ads with taste attribute-based appeals
and unhealthy food product ads with risk-avoidance HNR attribute-based appeals.

The expectation is that consumers will respond more favorably to ads that combine food products perceived to be healthy and HNR attribute-based appeals than other combinations because consumers expect healthiness in healthy foods. Conversely, it is expected that they will respond more favorably to ads that combine food products perceived to be unhealthy and taste attribute-based appeals than other combinations because consumers expect taste in unhealthy foods (see Choi et al. 2012; Choi and Springston in press). Because consumers' intuitions regarding "unhealthy = tasty" and "healthy = less tasty" are strong and work at an implicit level (Raghunathan, Naylor, and Hoyer 2006), the proposed relationships should be strong across the ad-related evaluations, under the assumption that consumers are unbiased by their health-related propensities and socio-economic status (also see Choi and Springston in press).

Self- and Functional Congruity: Hypotheses 3 and 4 and RQ1. A triadic mechanism between self- and functional-congruity and ad-related responses is proposed by the model (Sirgy et al., 1991). Based on the mechanism of self- and functional congruity, this research measures and compares the predictive power of self- and functional-congruity on the evaluation of a brand or product (Chon and Olsen 1991; Ericksen 1996; Jamal and Goode 2001; Han 2006; Sirgy and Johar 1999; Sirgy and Samli 1981; Sirgy et al. 1991;), investigating the extent to which the balance of predictive power between self- and functional-congruity relative to ad-related responses changes with different combinations of food and attribute-based appeal types in food

advertising. The general expectation is, while ad-responses will differ depending on the combination of food type and HNR attribute-based appeal type, self- and functional-congruity will account for the different ad responses for each combination.

In accordance with Sirgy et al. (1991), it is expected that respondents' self- and functional-congruities will positively predict ad-related responses, while functional congruity will be influenced by self-congruity. As noted previously in the literature review, self-congruity represents a value-expressive function having more affective base, whereas functional-congruity represents a utilitarian function having more cognitive base (Johar and Sirgy 1991; Petty and Caciopppo 1986). Therefore, it is expected that affect-based self-congruity influences cognition-based functional-congruity (Fabrigar and Petty 1999; Sirgy et al. 1991) and both congruities simultaneously predict consumer ad-related responses (Brown and Stayman 1992).

> H3: Self- and functional-congruity will positively predict (a) Cb, (b) Aad, (c) Ab, (d) Ap, and (e) PI responses.

> H4: Functional-congruity will be positively influenced by self-congruity.

The following research question is posed to explore the differential influence of congruity-types on respondent responses. No directional predictions are offered.

> RQ1. When self- and functional-congruity predict the ad-related responses of match-ups between food product types and HNR attribute-based appeal types, which type of congruity has a stronger influence on the dependent variables?

Hypotheses 5 through 10. As presented in the model, this research proposes that various individual propensities operate as antecedent variables which moderate the effects of self-congruity and functional-congruity on ad responses. Even though "unhealthy = tasty" intuition might be strong at the implicit level (Raghunathan, Naylor, and Hoyer 2006), it is expected that an individual's unique environmental, physiological, psychological, and situational

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propensities will influence his/her self- and functional-congruity, since those propensities are related to the individual's self-image and utilitarian attribute (Johar and Sirgy 1991; Sirgy and Johar,1999; Sirgy, Grewal, and Mangleburg 2000). Thus, the prediction here is that the influence of individual propensities will affect the predictive effects of self- and functional-congruity on ad-related responses. For instance, when an individual is under favorable social, physiological, psychological, and situational conditions to accept HNR claims, the individual might feel more self-congruence toward the HNR claimed product since the product matches with his/her self-image. In the same vein, the individual might also have more functional-congruence toward the HNR claimed product since he/she sees more utilitarian attributes relative to the HNR claims they prefer. Thus, such strengthened predictive effects of self- and functional-congruities will then increase ad-related responses as well. In contrast, when an individual is under unfavorable social, physiological, psychological, and situational conditions to accept HNR claims, his/her self- and functional-congruity toward a HNR claimed product will have weaker associations with ad-related responses. In this context, the following hypotheses focus on the moderating roles of antecedent variables regarding the predictive effects of self-congruity and functional-congruity on ad responses.

First, income and education are expected to influence self- and functional-congruity. Research has established that low income and less educated people tend to suffer food insecurity problems and to consume more cheap and energy-dense foods (Drewnowski and Darmon 2005; Drewnowski and Specter 2004; Johnson-Down et al. 1997). Since these poor and less educated people have less money to spend on healthy food and are likely less knowledgeable about healthy foods and dietary behavior, it is expected that respondents with low income and low education levels will feel less self-congruence and functional value with ads for food perceived

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to be healthy or with ads that include HNR attribute-based ad appeals, for such food products

and corresponding ads are inconsistent with their general dietary behavior. Thus, lower

predictive effects of self-congruity and functional-congruity on ad responses are predicted among

the consumers who are less educated and under the poverty threshold.

> H5: For ads for food products (a) perceived to be healthy and (b) advertised with HNR claims, the self- and functional-congruity of consumers who are below the poverty level will have weaker effect on ad responses than that of consumers who are above the poverty level.

> H6: For ads for food products (a) perceived to be healthy and (b) advertised with HNR claims, the self- and functional-congruity of consumers with a lower education level will have weaker effect on ad responses than that of consumers with a higher education level.

Second, Body Mass Index (BMI) is expected to influence the way a consumer processes

and responds to food advertising. As previously mentioned in literature review, people are likely

to exhibit more unhealthy dietary behaviors as their BMI increases from normal to overweight

and obese levels (Harker, Harker, and Burns 2007). Thus, it is expected that consumers who are

at the overweight level will exhibit weaker association between self-congruity and the ads for

foods perceived as healthy or food ads that use HNR attribute-based appeals, than the consumers

who are not overweight. Similarly, for those consumers who are overweight and obese, they will

not evaluate the healthy benefits from these ads as important evaluative criteria compared to the

consumers who are not overweight.

> H7: For ads for food products (a) perceived to be healthy and (b) advertised with HNR claims, self- and functional-congruity of consumers who are overweight or obese will have weaker effect on ad responses than consumers who are not overweight or obese.

Health consciousness is proposed as a psychological factor that moderates the predictive effects of self- and functional-congruity on ad responses. Health consciousness is defined as the "individual's intrinsic motivation to maintain good health, reflecting his or her enduring involvement in health matters." (Dutta-Bergman 2005, p.3) In this sense, it is expected here that highly health conscious respondents will exhibit greater involvement with the value and function of healthy food and HNR attribute-based appeals than respondents with lower health consciousness. Thus, it is assumed health consciousness is a consumer-related factor that influences self-congruity (Johar and Sirgy 1991), and high health conscious consumers will also focus on the utilitarian attributes provided by the healthy food and HNR attribute-based appeals. Thus, the predictive effects of self- and functional-congruity on ad responses will be increased among higher health conscious consumers than lower health conscious consumers.

> H8: Consumers who are highly health conscious will exhibit higher self- and functional-congruity on food products (a) perceived to be healthy and (b) advertised with HNR claims than consumers who are less health conscious.

The predictive effects of self- and functional-congruity are also proposed to be influenced by an individual's body-esteem, which is defined as "self-evaluation of one's body or appearance." (Mendelson, Mendelson, and White 2001, p.90). As noted in Chapter 2, people with lower body esteem tend to be less happy than their normal-weight peers (Allon 1979; Hendry and Gilies 1978; Mendelson et al. 1996). Therefore, it is expected that respondents with lower body-esteem will exhibit stronger self- and functional congruence associated with ad responses for food products perceived to be healthy or foods advertized using risk-avoidance attribute-based appeals (e.g.: low calorie, low fat) (i.e., an option to improve body esteem) and thus.

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H9: For ads with food products (a) perceived to be healthy and (b) advertised with risk-avoidance attribute-based appeals, self- and functional-congruity of consumers who have lower body esteem will have stronger effect on ad responses than consumers who have higher body esteem.

Finally, the model proposes that an individual's current dieting behavior is a situational factor that influences self-congruity. Because obesity is caused by an "imbalance between caloric intake and energy expenditure (Ogden et al., 2002, p.1731)", the purpose of dieting is to lose weight by reversing the imbalance between caloric intake and energy expenditure. Thus, lower calorie intake and more energy expenditure is likely an important goal of individuals who are dieting. Therefore, regarding food selection and advertising response, it is expected dieting respondents' self- and functional-congruity will show stronger association with food products perceived to be healthy (having low energy density) and advertised using risk-avoidance attribute-based appeals.

H10: For ads for food products (a) perceived to be healthy and (b) advertised with risk-avoidance attribute-based appeals, self- and functional-congruity of consumers who are currently dieting will have stronger effect on ad responses than consumers who are not currently dieting.

CHAPTER 4

METHODOLOGY

As noted in Chapter 1, a multi-stage research procedure was executed to experimentally test the ten hypotheses and research question relative to the proposed model. Two experiments were conducted.

Experiment 1 was executed using student subjects and was designed to examine whether advertisements for different food categories (i.e., healthy vs. unhealthy) and attribute-based ad appeal types (i.e., benefit-seeking vs. risk-avoidance vs. taste) result in different ad-related responses. Experiment 2 partially replicated Experiment 1 with non-students to improve the external validity of the research results. Simultaneously, Experiment 2 observed to what extent different individual propensities influence the triadic relationship between self-congruity, functional-congruity, and ad-related responses. Using non-student subjects enabled Experiment 2 to more accurately observe the influences of key individual propensities (e.g., demographics such as different income and education level).

Figure 4-1 presents the complete research process, including the experimental procedure.

[Figure 4-1 about here]

The three research stages were: preparation, developmental, and experimental. In the preparation stage, a background content analysis and two-pre-tests were conducted. The content analysis was executed to identify representative benefit-seeking and risk-avoidance attribute-based appeals in recent food advertising. The pre-tests were executed to identify and select representative healthy/unhealthy food categories and utilitarian evaluative criteria for food selection for the experimental stage. Based on preparation stage results, advertising stimuli combining food and attribute-based appeal types were created for testing in the

developmental stage. From the developmental stage, five ad stimuli were created for different food types, including two benefit-seeking attribute-based appeals, two risk-avoidance attribute-based appeals, and one taste attribute-based appeal. In the experimental stage, two 2 (healthy vs. unhealthy food) x 3 (benefit-seeking vs. risk-avoidance vs. taste) experiments were conducted. Details of the experiments are explained later.

Preparation Stage

A content analysis and a series of pre-tests were conducted to inform and facilitate the experimental stage. The content analysis was conducted to find and identify representative benefit-seeking and risk-avoidance attribute-based appeals associated with HNR claims in food advertising for both healthy and unhealthy product categories. The information was then used to develop ad stimuli (i.e., developmental stage) for experimental manipulation. The pretests were conducted to identify utilitarian evaluative criteria used by consumers to evaluate and select food products. The utilitarian evaluative criteria were then used to assess respondent's functional congruity in the second experimental setting.

Content analysis: Representative HNR Claims and Attribute-based Appeals

Sample. To identify the most frequently used benefit-seeking and risk-avoidance attribute-based appeals in food advertising, a content analysis of large circulation consumer magazines was conducted. Magazine advertisements for food products were selected for two reasons. First, print advertisements typically provide detailed product information (Shimp 2000). Second, advertisers of food, beverage, and candy categories spend a major part of their budgets in consumer magazines (about $2,315.8 million, 27.1% of 2010 media dollars) (*Advertising Age*, 2011).

Because women are the primary food shoppers (Parker, 2003; Food Marketing Institute, 2001), the collection of food advertisements was limited to large circulation, mainstream magazines that target women between the ages of 18 and older. Using MRI's

Magazine Audience Pocketpiece data (www.mriplus.com), five representative magazines

were chosen based on two criteria: (a) a million and above circulation and (b) 70% of total

readers were women. Then, five magazines were randomly chosen among the qualified

magazines. The selected magazines were: *People*, *Better Homes and Gardens*, *Cosmopolitan*,

Good Housekeeping, and *Prevention*. All food advertisements in the magazine issues from

September 2007 to September 2009 were collected because (a) this period encompasses the

most recent advertisements available and (b) analyzing ads from multiple years is reasonable

in print advertising due to the variations of media scheduling patterns (see Parker 2003).

A total of 1,375 food ads were collected from the five magazines. Of these, 952 were

unique ads and not duplications. Ads larger than one-quarter of a page were included. Full-

page and two-page spread ads, the most abundant ads in the five magazines, were counted as

one ad.

[Table 4-1 about here]

Coding scheme. The food advertisements were coded for two variables: (1) types of

HNR claims by attribute-based appeals— benefit-seeking or risk-avoidance and (2)

nutrients/ingredients emphasized in the ads. These categories were modified from previous

advertising studies (Dutta-Bergman 2004a, 2004b; Guthrie et al,. 1995; Parker, 2003). Table

4-1 reports detailed operational definitions and categories.

To code mutually exclusive and exhaustive categories (Wimmer and Dominick 2006),

each HNR claim was coded as either a benefit-seeking or risk-avoidance attribute-based

appeal (see Table 4-1). If a HNR claim emphasized a consumer health benefit, the claim was

considered a benefit-seeking attribute-based appeal. Likewise, if a HNR claim emphasized a

reduced health risk for consumer health, it was considered a risk-avoidance attribute-based

appeal. The same decision criteria were applied when multiple HNR claims appeared in an

advertisement. Multiple claims were less common than single claims – most food advertisements with HNR claims presented only one HNR attribute-based appeal type (63%).

Coding procedure. Two coders, who were blind to the purpose of the study, independently coded the advertisements. The coders were trained through a series of training sessions, group discussions, and pilot-testing. Based on these training procedures, the coding scheme was further developed (e.g., with more detailed operational definitions) and then applied in the final coding phase.

For inter-coder reliability computation, Perreault and Leigh's (1989) Index (P/L Index) was adopted. The P/L Index is appropriate when there are only two coders and the items are nominal. In addition, the index is known to be relatively rigorous and to take chance agreements into account (Rust and Cooil 1994). All computed reliability coefficients exceeded the rule-of-thumb coefficient size of .75 (Rust and Cooil 1994), and ranged from .97 to .99 (see also Table 4-1 for inter-coder reliabilities). To achieve consensus, the two coders and a third judge re-examined the coding data following reliability computation.

Results. From the sample of 952 unduplicated food ads, 448 (47%) ads were found to contain at least one HNR claim-type. The majority of food ads with HNR claims emphasized nutrient-content (83.9% ($N = 376$). In those 448 ads with HNR claims, 681 claims were identified that emphasized either benefit-seeking or risk-avoidance attribute-based appeals for advertised food products. Table 4-2 reports detailed descriptive statistics for the results.

Almost two thirds of the 681 HNR claims ($N = 436$, 64.0%) contained risk-avoidance attribute-based appeals. Reduced fat ($N = 189$, 27.8%), calories ($N = 174$, 25.6%), and reduced sugar ($N = 43$, 6.3%) were the most commonly used risk-avoidance claims. In ads with benefit-seeking attribute-based appeals ($N = 245$, 36.0%), fiber was the most common fortified nutrient emphasized ($N = 103$, 15.1%), followed by fortified protein ($N = 67$, 9.8%) and vitamins ($N = 40$, 5.9%).

[Table 4-2 about here]

Two conclusions were drawn from these results regarding the creation of ad stimuli for the experimental stage of this research. The first conclusion is that the nutrient-content claim should be the representative HNR claim type in the created ad stimuli. The second conclusion is that fortified fiber, protein, and vitamins should represent benefit-seeking attribute-based appeals, while reduced fat, calories, and sugar should represent representative risk-avoidance attribute-based appeals.

The dominance of the nutrient-content claim in the ads analyzed here is consistent with previous studies examining HNR claims in food advertising (Paker 2003; Yoon et al. 2010). Moreover, nutrient-content claims are the most problematic HNR claim type because of their potential to mislead consumers (Andrews et al. 1998, 2000; Burton and Creyer 2004; Mazis and Raymond 1997; Parker 2003; Wansink and Chandon 2006).

Pretest 1-1: Selecting perceived healthy and unhealthy food categories

A pre-test was conducted to select food products perceived as healthy versus unhealthy. An initial pool of 16 product categories was drawn from the Simmons Choice 3 data, the electronic consumer data resource of *Simmons Study of Media and Markets*.

The Simmons Choice 3 reports consumer buying behavior and media usage data for 25,000 adults (18 years of age and older), representing the entire U.S. population. Using the criterion of "regular eating by more than 60% of U.S. consumers", 16 food categories were selected based on whether they might be perceived to be healthy beneficial or unhealthy risky: *multigrain cereal, multigrain granola bars, plain yogurt, whole wheat bread, dried fruits, whole wheat bagels, grilled chicken,* and *whole milk* were selected as healthy food categories, while *chocolate chip cookies, chocolate ice cream, sugar glazed donuts, French fries, pepperoni pizza, fried chicken, chocolate chipped bagels,* and *ranch dressing* were selected as unhealthy food categories.

Consumer perceptions of the a priori categorization were collected from a convenience sample of 41 adults: 20 undergraduate students and 21 non-student adults (26.8% male, 73.2% female). Respondents were asked to evaluate the perceived healthiness and perceived tastiness of each of the sixteen food product types using 7-point bipolar scales. Perceived healthiness was evaluated on a scale where "1" meant "not very nutritious/ not very healthy" and "7" meant "very nutritious/ very healthy". Perceived taste was measured on a scale where "1" meant "not very delicious/ not very tasty" and "7" meant "very delicious/ very tasty". These attributes were drawn from past literature and modified to fit the current study (Andrews et al., 1998; Guthrie et al., 1995). The perceived healthiness and perceived taste items exhibited strong internal consistency ranging from .75 to 1.00 (see Table 4-3 for detail).

Additionally, two other questions were asked: "In general, how beneficial do you consider each of the following food products to be to your health as a whole?" and "In general, how risky do you consider each of the following food products to be to your health as a whole?" Responses were measured on 7-point bipolar scales where "1" meant "not at all risky (beneficial)" and "7" meant "very risky (beneficial)." The questions were modified from Alhakami and Slovic's study (1994).

[Table 4-3 about here]

[Table 4-4 about here]

As expected, the healthy food categories were perceived to be healthy and nutritious, whereas the unhealthy food categories were seen as less healthy and not nutritious (see Table 4-3). Specifically, the healthy foods, *multigrain cereal, plain yogurt, whole wheat bread, dried fruits, grilled chicken, multigrain granola bars, whole wheat bagels, and whole milk,* were perceived more healthy than the unhealthy foods, *chocolate chipped bagels, ranch*

dressing, chocolate ice cream, pepperoni pizza, fried chicken, chocolate chipped cookies, French fries, and *sugar glazed donuts.*

Whole milk had the lowest mean value on perceived healthiness among the healthy foods, and *chocolate chipped bagels* had the highest mean value among the unhealthy foods. The mean difference between the perceived healthiness of the two product types was significant ($\Delta = 1.61$, t = 6.84, $p < .001$). The healthy food categories tended to have higher perceived healthiness than perceived taste, whereas the unhealthy food categories tend to have higher perceived taste than perceived healthiness. As shown in Table 4-3, almost all of the food categories exhibited statistical significance ($p < .05$) or at least expected mean differences on perceived healthiness/perceived taste. G*rilled chicken* and *whole milk* categories were exceptions (see Table 4-3 for detail).

In sum, the results largely confirm the unhealthy = tasty intuition, and the inverse relationship between perceived healthiness and perceived taste.

Similarly and as expected, the healthy foods were perceived to be more beneficial and less risky, whereas the unhealthy foods were seen as less beneficial and more risky (see Table 4-4). *Plain yogurt, whole wheat bread, dried fruits, multigrain granola bars, multigrain cereal, grilled chicken, whole wheat bagels, and whole milk* were perceived as having more healthy benefits and less unhealthy risk than *ranch dressing, chocolate chipped bagels, chocolate ice cream, chocolate chipped cookies, pepperoni pizza, fried chicken, French fries,* and *sugar glazed donuts.*

W*hole milk* had the lowest mean value for perceived healthy benefit among the healthy food categories; *ranch dressing* had the highest mean value among the unhealthy food categories. The mean difference for healthy benefit between the two foods was significant ($\Delta = 1.73$, t = 6.75, $p < .001$). Regarding unhealthy risk, *whole milk* had the highest mean value among the healthy foods, and *chocolate ice cream* had the lowest mean

value among the unhealthy foods. The mean difference for unhealthy risk between the two foods was also significant ($\Delta = -.73$, t = -2.40, $p < .05$).

Consistent with the comparisons between perceived healthiness and taste, the healthy food categories were found to have higher perceived healthy benefit than unhealthy risk, whereas the unhealthy food categories were found to have higher perceived unhealthy risk than healthy benefit. All of the food categories exhibited statistical significance ($p < .05$) on healthy benefit/unhealthy risk, with the exception of *whole milk* (see Table 4-4 for detail).

In sum, the results indicate that the respondents evaluated healthy food categories as more beneficial and less risky, and unhealthy food categories as less beneficial and more risky for their health.

Based on the above results, and considering (a) product attribution, (b) the mean difference between perceived healthiness and taste, and (c) the mean difference between perceived benefit and risk of each food category, two healthy and unhealthy food match-ups were selected for the experimental stage of the research: *multigrain cereal* vs. *chocolate chip cookies* and *plain yogurt* vs. *pepperoni pizza.* Regarding product attribution, *multigrain cereal* and *chocolate chip cookies* are grain-based products, while *plain yogurt* and *pepperoni pizza* are diary-based products (i.e., ingredients). Moreover, according to the mean differences, all four products are significantly either healthy beneficial but less tasty (*multigrain cereal* and *plain yogurt*) or unhealthy risky but more tasty (*chocolate chip cookies* and *pepperoni pizza*) at $p < .001$ level. The expectation is that the greater mean differences between healthy and unhealthy food products will optimize the observation of mean differences of the dependent variables in the experimental conditions.

Pretest 1-2: Selecting utilitarian evaluative criteria on food selection

As part of the pre-test to select perceived healthy and unhealthy foods, utilitarian factors for food selection were also measured for use later in the assessment of subject's

functional congruity. Because Ajzen and Fishbein (1980) specify that evaluative criteria should be obtained from the populations from which samples are drawn, the 41 student and non-student respondents were asked to rate factors they consider most important when purchasing food products.

Rather than using an open-ended question format, an objective measurement technique developed by Steptoe, Pollard, and Wardle (1995) was employed. From a factor analysis of the responses of 358 British adults from 18 to 87 years old, they identified 36 question items representing nine motives underlying the selection of food: health, mood, convenience, sensory appeal, natural content, price, weight control, familiarity, ethical concern.

Utilizing the question items, this pretest asked respondents to evaluate the statement, "It is important to me that the food I eat on a typical day . . .", for each of the 36 items by choosing between seven responses: (1) not at all important, (4) moderately important, and (7) very important. Question items for each motive are presented below (see Steptoe, Pollard, and Wardle 1995, p.271-272):

- Health: 1) Contains a lot of vitamins and minerals, 2) Keeps me healthy, 3) Is nutritious, 4) Is high in protein, 5) Is good for my skin/teeth/hair/nails etc., 6) Is high in fiber and roughage.

- Mood: 7) Helps me cope with stress, 8) Helps me to cope with life. 9) Helps me relax, 10) Keeps me awake/alert, 11) Cheers me up, 12) Makes me feel good.

- Convenience: 13) Is easy to prepare, 14) Can be cooked very simply, 15) Takes no time to prepare, 16) Can be bought in shops close to where I live or work, 17) Is easily available in shops and supermarkets.

- Sensory Appeal: 18) Smells nice, 19) Looks nice, 20) Has a pleasant texture, 21) Tastes good.

- Natural Content: 22) Contains no additives, 23) Contains natural ingredients, 24) Contains no artificial ingredients.

- Price: 25) Is not expensive, 26) Is cheap, 27) Is good value for money.

- Weight Control: 28) Is low in calories, 29) Helps me control my weight, 30) Is low in fat.

- Familiarity: 31) Is what I usually eat, 32) Is familiar, 33) Is like the food I ate when I was a child.

- Ethical Concern: 34) Comes from countries I approve of politically, 35) Has the country of origin clearly marked, 36) Is packaged in an environmentally friendly way.

[Table 4-5 about here]

As a result the above, sensory appeal, health, weight control, convenience, price, and natural content were identified as the important factors for food choice (see Table 4-5). These factors were all significantly higher than the value "moderately important (4)" at the level of $p <.05$ according to One-Sample T-Tests.

Interestingly, these factors are also largely consistent with another study examining the reasons for choosing HNR claimed foods (Urala and Lähteenmäki 2003). Urala and Lahteenmaki (2003) found that healthiness, taste/pleasure, security/familiarity, and convenience/price to be central motivations for assessing HNR claimed foods. However, unlike Steptoe et al. (1995) and (Urala and Lähteenmäki 2003), familiarity was not found in this pretest to be perceived as significantly important for food selection among these U.S. respondents ($\Delta = .28$, t $= 1.26$, $p > .05$).

Thus, taking Ajzen and Fishbein's (1980) suggestion that at least five beliefs are appropriate for measuring a subject's cognitive reactions toward an object, six factors were selected as evaluative criteria to assess respondents' functional congruity in the experiment stage of the research: sensory appeal, health, weight control, convenience, price, and natural

content. The decision was made to substitute taste as the descriptor for the sensory appeal.

Taste was selected to represent "sensory appeal" for two reasons. First, the item "tastes good" exhibited the highest mean value ($M = 6.54$, $SD = .64$) among all items representing the sensory appeal factor, and also among the 36 question items of the present pretest. Second, Urala and Lähteenmäki's laddering interview (2003) described taste as the key value of sensory quality, and other research identified taste as the key issue for most food categories (Nielsen et al., 1998; Zanoli and Naspetti, 2002).

In sum, based on the pretest, the six identified evaluative criteria form this research's assessment of functional congruity.

Developmental Stage

Pretest 2: Developing ad stimuli and manipulation check

Developing ad stimuli. Five print advertisements (one taste attribute-based appeal + two benefit-seeking attribute-based appeals + two risk-avoidance attribute-based appeals) were created for each product-type selected in the first pretest (i.e., *multigrain cereal* vs. *chocolate chip cookies* and *plain yogurt* vs. *pepperoni pizza*). The advertisements were modified from real food advertisements that appeared in the analyzed consumer magazines.

Creating ad stimuli modeled after real advertisements is important. The use of real ads tends to enhance external validity (see Kim et al. 2009; Choi et al. 2012; Lagerwerf and Meijers 2008). Thus, the execution features (i.e., layout, type, visuals, etc.) of the five food product ads were held constant, but modified by featured brand, brand identifiers, and ad-copy.

"Familia," a real but not well known brand distributed in US markets, was used in order to gain external validity and to negate bias from existing attitudes. The brand was used for all five food products, with the brand and brand identifiers featuring "Familia." The copy in the ads was modified to communicate benefit-seeking and risk-avoidance attributes:

benefit-seeking attribute-based appeals were enhanced by inflating the beneficial nutrients offered by a specific food product, while risk-avoidance attribute-based appeals were enhanced by reducing the risky nutrients of a food product.

For the *multigrain cereal* vs. *chocolate chip cookies* match-up, "protein" and "vitamins" claims were used for benefit-seeking attribute-based appeals while "calorie" and "sugar" content claims were used for risk-avoidance attribute-based appeals. For the *plain yogurt* vs. *pepperoni pizza* match-up, "calcium" and "fiber" claims were used for benefit-seeking attribute-based appeal while "fat" and "cholesterol" content claims were used for risk-avoidance attribute-based appeals. These nutrient-content claims were selected based on 1) the results of Pretest 1-1, 2) Nutrition Facts Panel of the four products' packaging, and 3) real food products sold in U.S. food markets. Everything but attribute-based appeal type was constant across the five ads for a food product-type. The headline, sub-head, and body copy were modified by claim types; however, the ads displayed the same type, type size, and font color, the same visual images of the product, the same brand logo, and the same ad component position.

A total of 20 different ad stimuli were created for the experiment stage of the research: ten ad stimuli for each food product match-up (i.e., *multigrain cereal* vs. *chocolate chip cookie,* and *plain yogurt* vs. *pepperoni pizza*). The 20 ads were reviewed and refined by a university instructor who has professional experience as an advertising copywriter.

Procedure. Seventy-two undergraduate students participated in the second pretest (i.e., not respondents from pre-test 1). The respondents were directed to an online survey site, which presented a subset of the 20 ads for the four product types. A questionnaire followed each ad exposure (see Appendix B). Each subset consisted of two ad sets: ten advertisements with differing benefit-seeking, risk-avoidance, and taste attribute-based appeals. After brief instructions, one of the two subsets was randomly distributed to each respondent, and the

participants were asked to complete a questionnaire for each advertisement. The claim/product type combinations and the sequence of ads exposed to respondents were systematically determined (see Table 4-6).

[Table 4-6 about here]

Respondents and Measures. Thirty-four respondents (47.2%) evaluated the first ad set, and 38 respondents (52.8%) evaluated the second set. To check the manipulation of attribute-based appeal types, respondents were asked to answer the question: "Compared with a regular XXX (e.g. plain yogurt) product, please indicate how likely or unlikely it is that the advertised product possesses each of listed attributes." For the *multigrain cereal* vs. *chocolate chip cookies* match-up, respondents were asked to evaluate the protein, vitamin, sugar, and calorie levels featured in a particular ad; for the *plain yogurt* vs. *pepperoni pizza* match-up, they were asked to evaluate the calcium, fiber, cholesterol, and fat levels. Seven-point bipolar scales were used to measure evaluations, scored 1 (much lower than regular product) to 7 (much more than regular product). Thus, judgment of the success of the manipulation check was determined by whether respondents successfully perceived enhanced healthy or reduced unhealthy contents by advertised HNR attribute-based ad appeals, compared to its control condition (taste attribute-based ad appeals).

[Table 4-7 about here]

[Table 4-8 about here]

Results. As shown in Table 4-7 and 4-8, Independent Samples T-tests revealed that all of the ad copy messages were properly and significantly manipulated. Across the product match-ups, respondents perceived the benefit-seeking attribute-based appeal ads to have significantly higher healthy content than the taste attribute-based appeal ads while they perceived the risk-avoidance attribute-based appeal ads to have significantly lower unhealthy content than the taste attribute-based appeal ads ($p < .001$). Thus, the results indicate the 20

advertisements were appropriate manipulations for use in this study's experimental stage.

Additional analysis. In addition to the basic manipulation check, the pretest also checked whether benefit-seeking and risk-avoidance attribute-based appeals differentially increased perceived healthiness and decreased perceived taste by enhancing evaluations of healthy benefit while reducing unhealthy risk. This additional test checked the manipulation for the theoretical framework regarding "health halos" and "unhealthy = tasty intuition" (Chandon and Wansink 2007; Raghunathan, Naylor, and Hoyer 2006; Roe et al. 1999; Wansink and Chandon 2006;).

As described above, the respondents were asked to evaluate perceived benefit, risk, healthiness, and taste for each ad stimulus. The products and attribute-based appeals were categorized to approximate the design of the study's experimental stage: two product types (healthy vs. unhealthy) x three attribute-based appeal types (benefit-seeking vs. risk-avoidance vs. taste). In other words, *multigrain cereal* and *plain yogurt* vs. *chocolate chip cookie* and *pepperoni pizza* x more fiber, calcium, protein, and vitamins vs. less fat, cholesterol, sugar, and calories vs. taste.

[Table 4-9 about here]

[Figure 4-2 about here]

Table 4-9 displays the mean values of the respondents' evaluations of the perceivably unhealthy and healthy food ads with different HNR attribute-based appeal conditions. For this experimental set, multiple sets of 2 x 3 ANOVA were conducted to check the manipulations. Figure 4-2 shows the graphs of mean differences relative to the experimental design.

Ad attribute type had significant main effects across all measurements (for perceived benefit: $F (2, 714) = 45.81$, $p < .001$; for perceived risk: $F (2, 714) = 11.47$, $p < .001$; for perceived healthiness: $F (2, 714) = 124.18$, $p < .001$; for perceived taste: $F (2, 714) = 8.95$, p

< .001). Boferroni post-hoc tests of attribute types revealed ads with benefit-seeking attribute-based appeals resulted in significantly higher perceived benefit than the ads with risk-avoidance (4.86 vs. 4.61, $p < .001$) and taste attribute-based appeals (4.86 vs. 4.06, $p < .001$). The ads with risk-avoidance attribute-based appeals also showed significantly higher perceived benefit than the ads with taste attribute-based appeals (4.61 vs. 4.06, $p < .001$).

For perceived risk, the ads with risk-avoidance attribute-based appeals were found to have significantly lower perceived risk than those with taste attribute-based appeals (3.85 vs. 3.46, $p < .001$). The ads with benefit-seeking attribute-based appeals also revealed significantly lower perceived risk than those with taste attribute-based appeals (3.85 vs. 3.52, $p < .001$). However, there was no main effect for attribute-based appeal type between the ads with benefit-seeking and risk-avoidance appeals (3.52 vs. 3.46, $p > .05$).

These enhanced benefit and reduced risk by both benefit-seeking and risk-avoidance attribute-based appeals also increased perceived healthiness of advertised products. While the ads with benefit-seeking attribute-based appeals were perceived as healthier than the ads with taste attribute-based appeals (4.60 vs. 3.65, $p < .001$), the ads with risk-avoidance attribute-based appeals were perceived as healthier than the ads with taste attribute-based appeals (4. 51 vs. 3.65, $p < .001$). There was no significant difference between the ads with benefit-seeking and risk-avoidance attribute-based appeals (4.60 vs. 4.51, $p > .05$). However, these two HNR attribute-based appeal types were associated with decreased perceived taste of advertised products. Compared to the ads with taste attribute-based appeals, respondents showed lower perceived taste for the ads with benefit-seeking (4.64 vs. 4.33 $p < .05$) and risk-avoidance attribute-based appeals (4.64 vs. 4.11 $p < .001$).

Thus, the additional analysis supported the theoretical framework regarding "health halos" and "unhealthy = tasty intuition." That is, although HNR attribute-based appeals enhance perceived healthiness of advertised products by enhancing benefit and reducing risk

for health, they also decrease perceived taste because consumers have intuition that healthy foods are less tasty (Raghunathan, Naylor, and Hoyer 2006; Choi, Paek, and King 2012).

In sum, the pretest results indicate that the 20 ad stimuli were properly manipulated for use in experimental stage of the research. However, the researcher decided to make some adjustments in the ad stimuli with taste attribute-based appeals.

Since ads with benefit-seeking and risk-avoidance attribute-based appeals used comparative claims (e.g., low fat, more vitamins), it was decided the ads with taste attribute-based appeals also needed comparative claims. Thus, comparative descriptors such as "tastier" or "better taste" were used in the ads in the taste condition. Appendix A represents the final version of ad stimuli.

Experimental Stage

The experimental design used in the two experiments was the same. The design is presented in Table 4-10. As shown in the table, a 2 (product type: healthy vs. unhealthy) x 3 (attribute-based appeal type: benefit-seeking vs. risk-avoidance, vs. taste) mixed factorial design was used. Five survey sets representing taste (set 1), benefit-seeking (set 2 and 3), and risk-avoidance (set 4 and 5) attribute-based appeals were developed (see Table 4-11). Respondents were randomly assigned to one of five response sets, and evaluated four ads with different attribute-based appeals for each product type. However, the measurements assessed between the two experiments were different. While manipulation checks, perceived healthiness and taste, and ad-related responses were assessed in Experiment 1, the questionnaire assessing respondents' self- and functional-congruity for ad stimuli was additionally asked in Experiment 2.

[Table 4-10 about here]

[Table 4-11 about here]

Using this 2 x 3 mixed factorial design allowed the examination of the interaction effects between different attribute-based appeal types by different food product types. As a consequence, the results should indicate the extent to which health halos from HNR claims influence consumers' unhealthy=tasty intuition for food products; how consumer self- and functional-congruities differently predict ad responses for each ad combination (attribute-based appeals and product types); and also allow the assessment of how individual propensities (i.e., psychological, physiological, and socio-economical factors) influence consumer self-/functional- congruities and ad responses in sequence.

Experiment 1: Student Subjects

Procedure. For Experiment 1, undergraduate students were recruited from mass communication classes at the University of Georgia. Six hundred fifty-eight undergraduate students participated in the experiment (79.5% female vs. 20.5% male).

A web-based questionnaire was used to collect data. Participants were asked to connect to a special web page. Once connected, they were then randomly assigned to one of five response sets located on an on-line survey website (www.surveymonkey.com). Each response set contained three sections.

The first section consisted of the questionnaire used to assess respondents' personal importance of the utilitarian attributes of food choice (i.e., selected in pretest 1-2). The second section presented randomly generated ad stimuli followed by post-stimuli questions, including a manipulation check and measures of the dependent variables. Before a set of ad stimuli was exposed, a brief explanation about the *Familia* brand was given to respondents. The *Familia* brand was explained as follows:

"*Familia* Foods Inc. is a confectionery, food and beverage company. The company plans to launch several food products in the U.S. market. In the next section, the research group of Familia's advertising agency is soliciting feedback from consumers on early-stage advertisements. The advertisements might eventually appear in

magazines and newspapers across the U.S. The *Familia* brand name will be associated with a number of sub-brands."

Holding the experimental conditions and procedures constant, each participant considered one advertisement at a time before moving to another ad**.** The third section included items measuring individual propensities (i.e., healthy consciousness, body esteem, dieting, and BMI), age, and gender. The number of participants in each on-line survey set ranged from 121 to 136.

Measurements of the Variables. The full questionnaires are presented in Appendix B. The following sub-sections describe the origins of the dependent and antecedent variables in Experiment 1 and how they were measured.

<u>*Dependent Variables*</u>. After viewing each advertisement, participants completed an attitude questionnaire measuring: claim believability (hereafter Cb), attitude toward ad (hereafter Aad), attitude toward product (hereafter Ap), attitude toward brand (hereafter Ab), and purchase intention (hereafter PI). Cb was measured by three 7-point items regarding the extent to which the ad information was believable, trustworthy, and credible (Cronbach's alpha = .93; Andrews et al. 1998). Five 7-point bipolar items (bad/good, dislike/like, uninteresting/interesting, negative/positive, and unfavorable/favorable) were used to measure Aad (Cronbach's alpha = .89; Mitchell and Olson 1981). Ab and Ap were measured using four bipolar question items (bad/good, low quality/high quality, unappealing/appealing, and unpleasant/pleasant) (Cronbach's alpha = 0.96 for Ab, .91 for Ap; Simons and Carey, 1998). PI was measured using items from Bearden et al. (1984) by four bipolar scales – unlikely/likely; improbable/probable; uncertain/certain; and definitely not/definitely (Cronbach's alpha = 0.93).

<u>*Moderator Variables.*</u> Health consciousness was measured using ten items anchored on 7-point scales ranging from 1 (*definitely disagree*) to 7 (*definitely agree*) (Dutta-Bergman

2005, p. 8). These 10 items were averaged (Cronbach's alpha = .92), and the mean value of health consciousness was 4.53 (*SD* = 1.27) for the respondents.

Body esteem (hereafter BE) was measured using 22 items anchored on 5-point scales ranging from 1 (*Never*) to 5 (*Always*) (Mendelson et al., 1996, 2001). The original BE questionnaire has 23 items, but the question " My looks help me to get dates." was removed because the question item might be inappropriate for the respondents who already have their spouse or beloved. Additionally, since the original question items are mixed with positive and negative statements (e.g.: "My looks upset me." vs. "I'm looking as nice as I'd like to."), the responses of negative statements were flipped to positive anchors. Thus, high mean value means high BE. The BE measurement consists of three sub-categories: BE-appearance (general feelings about appearance), BE-weight (weight satisfaction), and BE-attribution (judgments of how other's view one's appearance). BE-appearance has 10-items, and its mean value was 3.45 (*SD* =.82), and its internal consistency was .93. BE-weight has 8-itmes, and its mean value was 3.25 (*SD* =.90), and has strong internal consistency (Cronbach's alpha = .91). BE-attribution consists of 4-items, and the mean value was 3.70 (*SD* =.73) and internal consistency was .90.

Current dieting was measured using the question: "Are you currently dieting? (Yes/No)" (Lindberg, et al. 2006). Of the respondents, 29.3 % were currently dieting and 70.7 % were not. BMI was measured using two questions "About how tall are you without shoes?" and "About how much do you weigh without shoes?" (WHO 2013). The formula calculating individual's BMI index was like following (NHLBI 2012):

$$BMI = (Weight)/(Height \times Height) \times 703$$

The mean value of respondents' BMI was 22.51 (*SD* =.73), which is under Normal weight category (18.5–24.9).

Experiment 2: Adults

Procedure and added variables. Experiment 2 replicated Experiment 1, using non-student adults rather than students. The procedures and measures were the same, except a marketing research firm with expertise in online sampling and survey research administered the experiment. The firm solicited an equal proportion of female and male adults from its national online panel ($N = 354$). Ages within the sample ranged from 20 to 87 ($M = 49.55$, $SD = 14.26$), and 77.1% of the participants finished the response task. Racially, 85.1% of respondents were white, 8.8% was black, and 3.2% was Asian.

In Experiment 2, self- and functional-congruity and two additional antecedent factors were additionally measured as well. The following sub-sections describe the origins of additional measurements and how they were measured.

Self- and functional-congruity. During the experiment, each participant's self- and functional-congruity was assessed immediately after the viewing of each advertisement. Actual self-congruity was assessed by four items modified from Sirgy et al. (1997). Ideal self-congruity was assessed by four items modified from Han (2006). The self-congruity items are presented in Table 4-12**.**

[Table 4-12 about here]

Actual and ideal self-congruity items were measured by seven-point Likert scales, with values ranging from 1 (strongly disagree) to 7 (strongly agree). The internal consistency scores were .95 for the actual self-congruity, and .97 for the ideal self-congruity items, respectively. Indices for the two forms of self-congruity were created by summating the responses to the items.

Functional congruity for the ad stimuli was measured by the Belief-Importance model (Rosenberg, 1956; Bass and Talarzyk, 1972; Sirgy et al. 1991). To avoid bias caused by ad stimuli, each participant was asked to assess his/her importance perceptions of the six

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evaluative criteria (taste, health, weight control, convenience, price, and natural content;

criteria produced in Pre-test 1-2) for each product before viewing each food advertisement:

"If you were considering purchasing (e.g.) yogurt, how important or unimportant would the

following characteristics be to you?"

After viewing each advertisement, each participant was then asked to assess his/her

believability that the advertised product possessed the functional criteria: "*For each of these*

attributes, please indicate how likely or unlikely it is that the advertised product would

possess each attribute." The believability and importance of each criterion was multiplied,

and an index for functional congruity created by summating the multiplied values.

Dependent Variables. After the questionnaire assessing self- and functional-congruity,

ad-related evaluations were also assessed in Experiment 2. The measurements of dependent

variables representing ad-related responses were same as the first experiment. Cb

(Cronbach's alpha = .95), Aad (Cronbach's alpha = .95), Ap (Cronbach's alpha = .95), Ab

(Cronbach's alpha = .97), and PI (Cronbach's alpha = .95) all exhibited strong internal

consistencies.

Moderator Variables. Unlike Experiment 1, income and education were additionally

measured as socio-economic antecedents. Respondent income level was calculated by using

two question: "Including yourself, how many people live in your household?" and "Thinking

about members of your family living in this household, what is your combined annual income,

meaning the total pre-tax income from all sources earned in the past year?" Using this

information, it was then determined whether a respondent income level was below or above

poverty line, based on the 2011 HHS Poverty Guidelines (2012, see Table 4-13). As a result,

42.6% of respondents were below the poverty line (coded as "1"), while 57.4% were above

the poverty line (coded as "2").

[Table 4-13 about here]

Regarding education, the question, "What is the highest level of school you completed?" was employed to measure the highest level of school the respondents had completed: 1 (*Less than high school*: 3.3%), 2 (*High School Graduate*: 19.5%), 3 (*Some College*: 32.1%), 4 (*Bachelor's Degree*: 30.5%), and 5 (*Post-Baccalaureate degree*: 14.6%).

Other than the income and education, the moderator variables measured in Experiment 1 were also measured in Experiment 2.The internal consistency of health consciousness was .93, and its mean value was 4.82 (SD = 1.35). Regarding body esteem (BE), the mean value of BE-appearance was 3.22 (SD =.88) and its internal consistency was .89. The mean value of BE-weight was 3.25 (SD =.90) and its internal consistency was .85. BE-attribution also has strong internal consistency (Cronbach's alpha = .90) and its mean value was 3.35 (SD =.99). In addition, 30.8 % of respondents were currently dieting and 68.3 % were not. The mean value of respondents' BMI was 28.91 (SD =7.08), which is under Overweight category (25–29.9).

CHAPTER 5

RESULTS

Since each participant was exposed to four ad stimuli across both experiments, the number of total responses was 2632 in Experiment 1(658 participants x 4 ads), and 1416 in Experiment 2 (354 participants x 4 ads). Some of the total responses were excluded from the final analysis because participants 1) were knowledgeable of the *Familia* brand, 2) they did not complete the survey, or 3) they had not eaten the advertised product in the last six months. Consequently, 436 of the 2632 total responses in Experiment 1 were excluded from the final analysis ($N = 2196$). In Experiment 2, 312 of the 1416 total responses were excluded ($N = 1104$). The following results describe the outcomes of each experimental study, including manipulation checks and hypotheses testing.

Result of Experiment 1

Manipulation Checks

A manipulation check of the ad stimuli was conducted in the same manner as described for Pretest 2. As shown in Table 5-1 and 5-2, Independent Samples T-tests revealed that all the ad copy messages were properly manipulated. Across the product match-ups, respondents perceived the benefit-seeking attribute-based appeal ads to have significantly higher healthy content than the taste attribute-based appeal ads, while they perceived the risk-avoidance attribute-based appeal ads to have significantly lower unhealthy content advertised than the taste attribute-based appeal ads ($p < .001$). Thus, the 20 advertisements were successfully manipulated as intended.

[Table 5-1 about here]

[Table 5-2 about here]

Furthermore, Experiment 1 also checked the manipulation for the theoretical framework regarding "health halos" and "unhealthy = tasty intuition" (Chandon and Wansink 2007; Raghunathan, Naylor, and Hoyer 2006; Roe et al. 1999; Wansink and Chandon 2006;). That is, whether benefit-seeking and risk-avoidance attribute-based appeals differentially increased perceived healthiness and decreased perceived taste by enhancing evaluations of healthy benefit while reducing unhealthy risk. As in Pretest 2, multiple sets of 2 x 3 ANOVA were conducted to check the manipulations.

[Table 5-3 about here]

[Figure 5-1 about here]

[Table 5-4 about here]

Table 5-3 displays the mean values of the respondents' evaluations of the perceivably unhealthy and healthy food ads with different HNR attribute-based appeal types and taste attribute-based appeal conditions. Figure 5-1 shows the graphs of mean differences relative to the experimental design, and Table 5-4 describes the Univariate F-values of main and interaction effects on each variable. As shown in Table 5-4, attribute-based ad appeal type and product type had significant main effects across perceived benefit, risk, healthiness, and taste.

Regarding the manipulation check of theoretical framework, Boferroni post-hoc tests on attribute types revealed ads with benefit-seeking attribute-based appeals resulted in significantly higher perceived benefit than the ads with risk-avoidance attribute-based appeals (4.84 vs. 4.66, $p < .001$) and taste attribute-based appeals (4.86 vs. 4.11, $p < .001$). The ads with risk-avoidance attribute-based appeals also showed significantly higher perceived benefit than the ads with taste attribute-based appeals (4.66 vs. 4.11, $p < .001$) (also see Figure 5-1).

For perceived risk, the ads with risk-avoidance attribute-based appeals were found to have significantly lower perceived risk than those with taste attribute-based appeals (3.56 vs. 3.90, $p < .001$). The ads with benefit-seeking attribute-based appeals also revealed significantly lower perceived risk than those with taste attribute-based appeals (3.53 vs. 3.90, $p < .001$). However, there was no main effect for attribute-based appeal type between the ads with benefit-seeking and risk-avoidance attribute-based appeals (3.53 vs. 3.56, $p > .05$) (also see Figure 5-1).

The enhanced benefit and reduced risk by both benefit-seeking and risk-avoidance attribute-based appeals also increased perceived healthiness of advertised products. While the ads with benefit-seeking attribute-based appeals were perceived as healthier than the ads with taste attributes (4.71 vs. 4.20, $p < .001$), the ads with risk-avoidance attribute-based appeals were also perceived as healthier than the ads with taste attribute-based appeals (4. 67 vs. 4.20, $p < .001$). However, there was no significant difference between the ads with benefit-seeking and risk-avoidance attribute-based appeals (4.71 vs. 4.67, $p > .05$). In contrast, these two HNR attribute-based appeal types decrease perceived taste of advertised products. Compared to the ads with taste attribute-based appeals, respondents exhibited lower perceived taste for the ads with benefit-seeking (4.05 vs. 4.56 $p < .001$) and risk-avoidance attribute-based appeals (3.75 vs. 4.56, $p < .001$). Additionally, Table 5-4 indicates there were significant interaction effects on perceived healthiness and taste. As shown in Figure 5-1, benefit-seeking and risk-avoidance attribute-based appeals were more influential for unhealthy food products than for healthy food products. The attributes were associated with increased perceived healthiness and decreased perceived taste.

In sum, consistent with Pretest 2, the 20 ad stimuli in Experiment 1 were successfully manipulated, and the manipulation check also supported the theoretical frameworks of health halos and unhealthy = tasty intuition (Raghunathan, Naylor, and Hoyer 2006; Choi, Paek, and

King 2012).

Hypotheses Testing in Experiment 1

Hypothesis 1 and 2 Test: Health Halos vs. Unhealthy = Tasty Intuition. As previously described in Chapter 3, Hypothesis 1 and 2 were proposed as follows:

H1: Controlling individual propensities, healthy food product ads with benefit-seeking attribute-based appeals and unhealthy food product ads with taste attribute-based appeals will have greater (a) Cb, (b) Aad, (c) Ab, (d) Ap, and (e) PI responses than will healthy food product ads with taste attribute-based appeals and unhealthy food product ads with benefit-seeking HNR attribute-based appeals.

H2: Controlling individual propensities, healthy food product ads with risk-avoidance HNR attribute-based appeals and unhealthy food product ads with taste attribute-based appeals will have greater (a) Cb, (b) Aad, (c) Ab, (d) Ap, and (e) PI responses than will healthy food product ads with taste attribute-based appeals and unhealthy food product ads with risk-avoidance HNR attribute-based appeals.

In other words, the hypotheses predicted that HNR attribute-based appeals will have greater advertising effects than taste attribute-based appeals on healthy food ads while taste attribute-based appeals will have greater advertising effects than HNR attribute-based appeals on unhealthy food ads, especially when controlling consumers' individual propensities.

[Table 5-5 about here]

Table 5-5 shows the subjects' ad responses to the perceivably unhealthy and healthy food ads with benefit-seeking, risk-avoidance, and taste attribute-based appeal conditions. Initially, 2 x 3 MANCOVA was considered to be an appropriate analysis technique, but Box's M-test revealed that the dependent variables of Experiment 1 did not satisfy the homogeneity of covariance matrices (Box's M = 133.02, $F = 1.76$, $p < .001$). Thus, multiple sets of ANCOVA controlling individual propensities were used to test the hypotheses. Respondents' current dieting status, BMI, three types of body esteem, and health

consciousness were included as possible covariates/blocking factors to control individual propensities.

[Figure 5-2 about here]

[Table 5-6 about here]

As described in Table 5-6, multiple 2 x 3 ANCOVAs resulted in significant interaction effects for claim believability, attitude toward ad, attitude toward product, and purchase intension at $p < .01$, and for attitude toward brand at $p < .10$. As shown in Figure 5-2, respondents exhibited more favorable ad responses when perceivably healthy food products were advertised with benefit-seeking and risk-avoidance attribute-based appeals than with taste attribute-based appeals, and when perceivably unhealthy food products were advertised with taste attribute-based appeals than with benefit-seeking and risk-avoidance attribute-based appeals.

For claim believability (Cb), a significant interaction effect between attribute-based appeal type and product type was found ($F (2, 2071) = 5.61$, $p < .01$). Bonferroni pair wise comparisons revealed that, when the advertised products were perceivably healthy, both benefit-seeking and risk-avoidance attribute-based appeals showed significantly higher Cb than taste attribute-based appeals ($M_{benefit\text{-}seeking} = 4.99$ versus $M_{taste} = 4.65$, $p < .01$; $M_{risk\text{-}avoidance} = 4.97$ versus $M_{taste} = 4.65$, $p < .01$), while there was no significant mean difference between benefit-seeking and risk-avoidance attribute-based appeals ($M_{benefit\text{-}seeking} = 4.99$ versus $M_{risk\text{-}avoidance} = 4.97$, $p > .05$). When the advertised products were perceivably unhealthy, the mean differences among benefit-seeking, risk-avoidance, and taste attribute-based appeals were not significantly different ($M_{benefit\text{-}seeking} = 4.33$ versus $M_{risk\text{-}avoidance} = 4.35$ versus $M_{taste} = 4.47$, $p > .05$). Thus, hypothesis 1a and 2a were partially supported.

For attitude toward ad (Aad), a significant interaction effect between attribute-based appeal type and product type was also found ($F (2, 2071) = 5.24$, $p < .01$). When the

advertised products were perceivably healthy, both benefit-seeking and risk-avoidance attribute-based appeals showed significantly higher Aad than taste attribute-based appeals ($M_{benefit-seeking}$ = 4.34 versus M_{taste} = 4.13, p < .05; $M_{risk-avoidance}$ = 4.33 versus M_{taste} = 4.13, p < .05), while there was no significant mean difference between benefit-seeking and risk-avoidance attribute-based appeals ($M_{benefit-seeking}$ = 4.34 versus $M_{risk-avoidance}$ = 4.33, p > .05). When the advertised products were perceivably unhealthy, the mean difference between benefit-seeking and taste attribute-based appeals closely approached the significant level ($M_{benefit-seeking}$ = 4.06 versus M_{taste} = 4.31, p = .06), but the mean differences between risk-avoidance and taste attribute-based appeals and between benefit-seeking and risk-avoidance were not significant ($M_{risk-avoidance}$ = 4.15 versus M_{taste} = 4.06, p > .05; $M_{benefit-seeking}$ = 4.06 versus $M_{risk-avoidance}$ = 4.15, p > .05). Thus, hypothesis 1b and 2b were partially supported.

For attitude toward product (Ap), a significant interaction effect between attribute-based appeal type and product type produced a significant interaction effect ($F_{(2, 2071)}$ = 5.46, p < .01). When the advertised products were perceivably healthy, benefit-seeking attribute-based appeals showed significantly higher Ap than taste attribute-based appeals ($M_{benefit-seeking}$ = 4.53 versus M_{taste} = 4.32, p < .05;); the Ap of risk-avoidance attribute-based appeals was not significantly higher than that of taste attribute-based appeals ($M_{risk-avoidance}$ = 4.45 versus M_{taste} = 4.32, p > .05). The mean difference between benefit-seeking and risk-avoidance attribute-based appeals on Ap was also not significant ($M_{benefit-seeking}$ = 4.53 versus $M_{risk-avoidance}$ = 4.45, p > .05). When the advertised products were perceivably unhealthy, taste attribute-based appeals showed significantly higher Ap than risk-avoidance attribute-based appeals (M_{taste} = 4.44 versus $M_{risk-avoidance}$ = 4.20, p < .05), while the mean difference between taste and benefit-seeking attribute-based appeals approached the significant level (M_{taste} = 4.44 versus $M_{benefit-seeking}$ = 4.21, p = .08). Thus, hypothesis 1c and 2c were partially supported.

For attitude toward brand (Ab), the interaction effect between attribute-based appeal type and product type approached a significant level (F (2, 2071) = 2.58, p = .08). When the advertised products were perceivably healthy, both benefit-seeking and risk-avoidance attribute-based appeals showed significantly higher Ab than taste attribute-based appeals (M $_{benefit-seeking}$ = 4.42 versus M $_{taste}$ = 4.17, p < .05; M $_{risk-avoidance}$ = 4.36 versus M $_{taste}$ = 4.17, p < .05), while there was no significant mean difference between benefit-seeking and risk-avoidance attribute-based appeals (M $_{benefit-seeking}$ = 4.42 versus M $_{risk-avoidance}$ = 4.36, p > .05). When the advertised products were perceivably unhealthy, however, there were no significant mean differences among the three types of ad attribute-based appeals (M $_{benefit-seeking}$ = 4.10 versus M $_{risk-avoidance}$ = 4.05 versus M $_{taste}$ = 4.15, p > .05). Thus, hypothesis 1d and 2d were partially supported.

For purchase intension (PI), a significant interaction effect between attribute-based appeal type and product type was found (F (2, 2071) = 6.35, p < .01). According to Bonferroni pair wise comparisons, when the advertised products were perceivably healthy, benefit-seeking attribute-based appeals showed significantly higher PI than taste attribute-based appeals (M $_{benefit-seeking}$ = 3.77 versus M $_{taste}$ = 3.45, p < .05), while the mean difference between taste and benefit-seeking attribute-based appeals approached the significant level (M $_{risk-avoidance}$ = 3.62 versus M $_{taste}$ = 3.45, p = .07). The mean difference between benefit-seeking and risk-avoidance attribute-based appeals was not significant (M $_{benefit-seeking}$ = 3.77 versus M $_{risk-avoidance}$ = 3.62, p > .05). Otherwise, when the advertised products were perceivably healthy, taste attribute-based appeals showed significantly higher PI than benefit-seeking attribute-based appeals (M $_{taste}$ = 3.63 versus M $_{risk-avoidance}$ = 3.31, p > .05), but not significantly higher than risk-avoidance attribute-based appeals (M $_{taste}$ = 3.63 versus M $_{risk-avoidance}$ = 3.36, p > .05). Thus, hypothesis 1e and 2e were partially supported.

In addition, current dieting status, BMI, BE-Appearance, BE-Weight, and health consciousness were found to function as significant covariates on many of dependent variables. Among the covariates, while health consciousness was the most influential covariate since it consistently showed the highest F-values on Aad, Ap, Ab, and PI, BE-Appearance did not function as a significant covariate on all dependent variables.

Result of Experiment 2

Based on the significant results of Experiment 1 supporting the theoretical relationship between health halo and unhealthy=tasty intuition, the results of Experiment 2 were analyzed 1) to determine whether the theoretical relationship is also consistent among non-students, 2) how respondents' self- and functional congruity differently predict ad-related evaluations, and 3) to what extent individual propensities affect the predictive effects of self- and functional congruity.

Manipulation Checks

For Experiment 2, a manipulation check of the ad stimuli was conducted in the same manner as Pretest 2 and Experiment 1. As shown in Table 5-7 and 5-8, Independent Samples T-tests revealed that all the ad copy messages were properly and significantly manipulated. Across the product match-ups, respondents perceived the benefit-seeking attribute-based ads to have significantly higher healthy content advertised than the taste attribute-based ads while they perceived the risk-avoidance attribute-based ads to have significantly lower unhealthy content advertised than the taste attribute-based ads (more than $p < .01$). Thus, the 20 advertisements were successfully manipulated as intended.

[Table 5-7 about here]

[Table 5-8 about here]

Experiment 2 also conducted manipulation checks for the theoretical framework regarding "health halos" and "unhealthy = tasty intuition" (Chandon and Wansink 2007;

Raghunathan, Naylor, and Hoyer 2006; Roe et al. 1999; Wansink and Chandon 2006;). As in Pretest 2 and Experiment 1, multiple sets of 2 x 3 ANOVA were conducted to check the manipulations.

[Table 5-9 about here]

[Figure 5-3 about here]

[Table 5-10 about here]

Table 5-9 describes the mean values of the respondents' evaluations of the perceivably unhealthy and healthy food ads with different HNR attribute-based appeal conditions. Figure 5-3 shows the graphs of mean differences relative to the experimental design, and Table 5-10 describes the Univariate F-values of main and interaction effects on each variable. As indicated in Table 5-10, ad attribute-based appeal type had significant main effects on perceived benefit, risk, healthiness, and taste. Boferroni post-hoc tests on attribute types revealed that ads with benefit-seeking attribute-based appeals resulted in significantly higher perceived benefit than the ads with taste attribute-based appeals (4.78 vs. 4.19, $p < .001$). The ads with risk-avoidance attribute-based appeals also showed significantly higher perceived benefit than the ads with taste attribute-based appeals (4.74 vs. 4.19, $p < .001$) However, there was no main effect for attribute type between the ads with benefit-seeking and risk-avoidance attribute-based appeals (4.78 vs. 4.74, $p > .05$).

For perceived risk, the ads with risk-avoidance attribute-based appeals were found to have significantly lower perceived risk than those with taste attribute-based appeals (3.79 vs. 4.05, $p < .01$). The ads with benefit-seeking attribute-based appeals also revealed significantly lower perceived risk than those with taste attribute-based appeals (3.86 vs. 4.05, $p < .005$). However, as the case of perceived benefit, there was no main effect for attribute-based appeal type between the ads with benefit-seeking and risk-avoidance attribute-based appeals (3.79 vs. 3.86, $p > .05$) (also see Figure 5-3).

These enhanced benefit and reduced risk by both benefit-seeking and risk-avoidance attribute-based appeals also increased perceived healthiness of advertised products. While the ads with benefit-seeking attribute-based appeal type were perceived as healthier than the ads with taste attribute-based appeal type (4.40 vs. 4.02, $p < .01$), the ads with risk-avoidance attribute-based appeals were also perceived as healthier than the ads with taste attribute-based appeals (4. 45 vs. 4.02, $p < .001$). However, there was no significant difference between the ads with benefit-seeking and risk-avoidance attribute-based appeals (4.45 vs. 4.45, $p > .05$). In contrast, these two HNR attribute-based appeal types decreased perceived taste of advertised products. Compared to the ads with taste attribute-based appeals, respondents exhibited lower perceived taste for the ads with benefit-seeking (4.23 vs. 4.53 $p < .05$) and risk-avoidance attribute-based appeals (4.22 vs. 4.53, $p < .05$).

In sum, as in Pretest 2 and Experiment 1, the 20 ad stimuli were successfully manipulated, and the manipulation check also supported the theoretical frameworks of health halos and unhealthy = tasty intuition (Raghunathan, Naylor, and Hoyer 2006; Choi, Paek, and King 2012).

Hypotheses Testing in Experiment 2 - ANCOVAs

Hypothesis 1 and 2 Test: Health Halos vs. Unhealthy = Tasty Intuition. Hypothesis 1 and 2 predicted the following:

> H1: Controlling individual propensities, healthy food product ads with benefit-seeking attribute-based appeals and unhealthy food product ads with taste attribute-based appeals will have greater (a) Cb, (b) Aad, (c) Ab, (d) Ap, and (e) PI responses than will healthy food product ads with taste attribute-based appeals and unhealthy food product ads with benefit-seeking HNR attribute-based appeals.

> H2: Controlling individual propensities, healthy food product ads with risk-avoidance HNR attribute-based appeals and unhealthy food product ads with taste attribute-based appeals will have greater (a) Cb, (b) Aad, (c) Ab, (d) Ap, and (e) PI responses than will healthy food product ads with taste attribute-based appeals and unhealthy

food product ads with risk-avoidance HNR attribute-based appeals.

[Table 5-11 about here]

Table 5-11 presents the subjects' ad responses of the perceivably unhealthy and healthy food ads with benefit-seeking, risk-avoidance, and taste attribute-based appeal conditions. As in Experiment 1, Box's M-test revealed that the dependent variables did not satisfy the homogeneity of covariance matrices (Box's M = 301.63, F = 3.97, $p < .001$). Thus, multiple sets of ANCOVA were used to test the hypotheses controlling for individual propensities. Respondents' current dieting status, BMI, three types of body esteem, health consciousness, poverty status, and education level were included as possible covariates/blocking factors to control individual propensities.

[Figure 5-4 about here]

[Table 5-12 about here]

As described in Table 5-12, multiple 2 x 3 ANCOVAs resulted in significant interaction effects for claim believability, attitude toward ad, attitude toward product, attitude toward brand, and purchase intension at $p < .05$ or $p < .01$.

For claim believability (Cb), a significant interaction effect between attribute-based appeal type and product type was found (F (2, 992) = 4.27, $p < .05$). Bonferroni pair wise comparisons revealed that, when the advertised products were perceivably healthy, both benefit-seeking and risk-avoidance attribute-based appeals showed significantly higher Cb than taste attribute-based appeals (M $_{benefit-seeking}$ = 4.98 versus M $_{taste}$ = 4.21, $p < .05$; M $_{risk-avoidance}$ = 4.88 versus M $_{taste}$ = 4.21, $p < .05$), while there was no significant mean difference between benefit-seeking and risk-avoidance attribute-based appeal types (M $_{benefit-seeking}$ = 4.98 versus M $_{risk-avoidance}$ = 4.88, $p > .05$). When the advertised products were perceivably unhealthy, the mean differences among benefit-seeking, risk-avoidance, and taste attribute-

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based appeal types were not significantly different (M $_{\text{benefit-seeking}}$ = 4.35 versus M $_{\text{risk-avoidance}}$ = 4.49 versus M $_{\text{taste}}$ = 4.57, $p > .05$). Thus, hypothesis 1a and 2a were partially supported.

For attitude toward ad (Aad), a significant interaction effect between attribute-based appeal type and product type was also found (F (2, 992) = 3.14, $p < .05$). When the advertised products were perceivably healthy, risk-avoidance attribute-based appeals exhibited significantly higher Aad than taste attribute-based appeals (M $_{\text{risk-avoidance}}$ = 4.69 versus M $_{\text{taste}}$ = 4.25, $p < .05$); benefit-seeking attribute-based appeals did not exhibit significantly higher Aad than taste attribute-based appeals M $_{\text{benefit-seeking}}$ = 4.59 versus M $_{\text{taste}}$ = 4.25, $p > .05$). There was also insignificant mean difference between benefit-seeking and risk-avoidance attribute-based appeal types (M $_{\text{benefit-seeking}}$ = 4.69 versus M $_{\text{risk-avoidance}}$ = 4.59, $p > .05$). When the advertised products were perceivably unhealthy, the mean differences among benefit-seeking, risk-avoidance, and taste attribute-based appeals were not significantly different (M $_{\text{benefit-seeking}}$ = 4.35 versus M $_{\text{risk-avoidance}}$ = 4.58 versus M $_{\text{taste}}$ = 4.53, $p > .05$). Thus, hypothesis 1b and 2b were partially supported.

For attitude toward product (Ap), a significant interaction effect between attribute-based appeal type and product type produced a significant interaction effect (F (2, 992) = 5.88, $p < .01$). When the advertised products were perceivably healthy, both benefit-seeking and risk-avoidance attribute-based appeals exhibited significantly higher Ap than taste attributes (M $_{\text{benefit-seeking}}$ = 4.56 versus M $_{\text{taste}}$ = 4.13, $p < .05$; M $_{\text{risk-avoidance}}$ = 4.70 versus M $_{\text{taste}}$ = 4.13, $p < .01$), while the mean difference between benefit-seeking and risk-avoidance attribute-based appeals on Ap was not significant (M $_{\text{benefit-seeking}}$ = 4.70 versus M $_{\text{risk-avoidance}}$ = 4.56, $p > .05$). When the advertised products were perceivably unhealthy, the mean differences among benefit-seeking, risk-avoidance, and taste attribute-based appeal types were not significantly different (M $_{\text{benefit-seeking}}$ = 4.30 versus M $_{\text{risk-avoidance}}$ = 4.58 versus M $_{\text{taste}}$ = 4.54, $p > .05$). Thus, hypothesis 1c and 2c were partially supported.

For attitude toward brand (Ab), the interaction effect between attribute-based appeal type and product type approached a significant level ($F (2, 992) = 4.41, p < .05$). When the advertised products were perceivably healthy, both benefit-seeking and risk-avoidance attribute-based appeals exhibited significantly higher Ab than taste attribute-based appeals ($M_{benefit-seeking} = 4.56$ versus $M_{taste} = 4.13, p < .05$; $M_{risk-avoidance} = 4.67$ versus $M_{taste} = 4.13, p < .01$), while there was no significant mean difference between benefit-seeking and risk-avoidance attribute-based appeals ($M_{benefit-seeking} = 4.56$ versus $M_{risk-avoidance} = 4.67, p > .05$). When the advertised products were perceivably unhealthy, however, there were no significant mean differences between the three types of attribute-based appeal types ($M_{benefit-seeking} = 4.27$ versus $M_{risk-avoidance} = 4.45$ versus $M_{taste} = 4.44, p > .05$). Thus, hypothesis 1d and 2d were partially supported.

For purchase intension (PI), a significant interaction effect between attribute-based appeal type and product type was found ($F (2, 992) = 5.22, p < .01$). According to Bonferroni pair wise comparisons, when the advertised products were perceivably healthy, risk-avoidance attribute-based appeals exhibited significantly higher PI than taste attribute-based appeals ($M_{risk-avoidance} = 4.12$ versus $M_{taste} = 3.54, p < .05$), while the mean difference between taste and benefit-seeking attribute-based appeals approached the significant level ($M_{benefit-seeking} = 3.97$ versus $M_{taste} = 3.54, p = .10$). The mean difference between benefit-seeking and risk-avoidance attribute-based appeal types was not significant ($M_{benefit-seeking} = 3.97$ versus $M_{risk-avoidance} = 4.12, p > .05$). Otherwise, when the advertised products were perceivably healthy, there were no significant mean differences between the three types of attribute-based appeal types ($M_{benefit-seeking} = 3.78$ versus $M_{risk-avoidance} = 3.89$ versus $M_{taste} = 4.05, p > .05$). Thus, hypothesis 1e and 2e were partially supported.

In addition, current dieting status, BMI, BE-Appearance, BE-Weight, health consciousness, poverty, and education level were found to function as significant

covariates/blocking factors on many of the dependent variables. Among the covariates, health consciousness was the most influential covariate since it consistently showed the highest F-values on all ad responses.

Hypotheses Testing in Experiment 2 – Basic SEM Analysis

Hypothesis 3, 4, and Research Question 1 Test: Self- and Functional Congruities. Using the theoretical framework of self- and functional- congruities, the following two hypotheses and one research question were posed to explore consumers' psychological processing of ads for different food categories by different attribute-based appeal types:

> H3: Self- and functional-congruity will positively predict (a) Cb, (b) Aad, (c) Ab, (d) Ap, and (e) PI evaluations.
>
> H4: Functional-congruity will be positively influenced by self-congruity.
>
> RQ1. When self- and functional-congruity predict the ad-related responses of match-ups between food product types and HNR attribute-based appeal types, which type of congruity has a stronger influence on the ad responses?

H3 and H4 focus on the overall predictive mechanism of self- and functional-congruity in affecting ad-based responses (Sirgy et al., 1991). RQ1 examines how the strength of relationships between variables is changed across the match-ups between food product types and HNR attribute-based appeal types.

[Figure 5-5 about here]

As described earlier, AMOS 16.0 was used to test the structural relationships of the model relative to H3, H4, and RQ1. In Figure 5-5, actual and ideal self-congruities were defined as two first-order latent variables representing the second-order overall self-congruity. To validate such relationship, a second order confirmatory factor analysis (CFA) was conducted before the overall CFA of the proposed model.

[Figure 5-6 about here]

As shown in Figure 5-6, the second-order model produced an acceptable model fit to the sample data (χ^2 (19) = 362.71, p < .01; IFI=.985; GFI=.960; AGFI=.924; NFI=.984; CFI=.985; RMSEA=.091). Responses representing actual and ideal self-congruity significantly loaded on each congruity (.88 to .95) and the two congruities also significantly loaded on the second-order overall self-congruity (.99 for actual self-congruity, and .89 for ideal self-congruity).

[Table 5-13 about here]

[Table 5-14 about here]

Based on the confirmed second-order self-congruity, overall CFA was conducted with functional-congruity and each of the ad-based responses (i.e., claim believability (Cb), attitude toward ad (Aad), attitude toward product (Ap), attitude toward brand (Ab), and purchase intension (PI)). For the overall CFA and SEM analysis, functional-congruity was constructed as the observed variable: respondents' perceived belief and importance for the six evaluative criteria (taste, health, weight control, convenience, price, and natural content) for each advertised product were multiplied and then combined together as per as the belief-importance model (Bass and Talazyk 1972).

In the overall CFA model, all of the factor loading scores of the ad-based response variables were within the acceptable range (from .54 to .98) and statistically significant (p < .001), indicating good convergent validity. Correlations between measures were also examined to test discriminant validity. As shown in Table 5-13, examination of the correlations reveals sufficient discriminant validity: all measures had higher correlations with the corresponding latent variable than with the other latent variables. Finally, the measurement model for each ad-based response exhibited a good fit (see Table 5-14).

Following model and measurement verification procedures, proposed models were estimated by SEM (*Structural Equation Modeling*) analysis. To determine whether H3 and H4 were supported, each structural path coefficient was examined with fit indices of the models presented in Figure 5-5. As described in Table 5-14, the fit indices revealed a good fit for the proposed models.

[Table 5-15 about here]

For H3 and H4, while self- and functional-congruity positively predicted Cb, Aad, Ab, Ap, and PI, functional-congruity was positively influenced by self-congruity. All of the relationships were statistically significant ($p < .05$).

The partial mediation role of functional-congruity was tested by a set of bootstrap analyses, since the analysis is a more rigorous and powerful tool to prove assess mediation than the Sobel test (Preacher and Hayes 2004; Zhao, Lynch, and Chen 2010). As shown in Table 5-16, the bootstrap results for indirect effects did not include 0 within the 95% confidence interval. Thus, partial mediation is established and significant for each ad response.

Thus, H3 and H4 were fully supported across the ad-responses (see Table 5-16 and Figure 5-7).

[Table 5-16 about here]

[Figure 5-7 about here]

For RQ1, the direct effects of self- and functional congruity on each ad-response were initially compared to observe which congruity had stronger predictive power (Sirgy et al. 1991). As shown in Table 5-16, while self-congruity exhibited higher path coefficients than functional-congruity on Aad, Ap, and PI, functional-congruity exhibited higher path coefficients than self-congruity on Cb and PI. The coefficients of the two congruities were about same for Ab.

The direct effects of self- and functional-congruities on ad responses were also compared by experimental groups (see Table 5-17). For the food products advertised with HNR claims, functional-congruity exhibited higher direct effect than self-congruity on Cb, Aad, Ap, and Ab. In contrast, for the unhealthy food ads with taste attribute-based appeal type, the direct effect of self-congruity on Cb, Aad, Ap, and PI was higher than that of functional-congruity. Additionally, for PI only, the direct effect of self-congruity was higher than the functional-congruity effect across experimental groups, except for unhealthy food ads with the risk-avoidance attribute-based appeal type.

Hypotheses Testing in Experiment 2 – Multi-group SEM Analysis

Earlier, it was also proposed that key variables might moderate the relationship between self- and functional-congruity and ad responses. Based on previous literature, it was predicted that consumers' self- and functional-congruity might differentially affect ad responses depending on individual characteristics and propensities. Hypotheses were tested for the moderators of poverty, education, Body Mass Index (BMI), health consciousness, body esteem, and dieting, assuming congruities would be stronger or weaker for consumers with certain characteristics or predispositions.

Hypothesis 5 Test: Poverty. H5 tested the moderating role of poverty:

> H5: For ads for food products (a) perceived to be healthy and (b) advertised with HNR claims, the self- and functional-congruity of consumers who are below the poverty level will have weaker effect on ad responses than that of consumers who are above the poverty level.

To test H5, multi-group structural equation modeling was conducted. First, the experimental sets of healthy food ads and HNR claimed ads were selected from the experimental data. The experimental set of healthy food ads included the multi-grain cereal

and plain yogurt ads, irrespective of attribute-based appeal type. The experimental set of HNR claims included all ads with benefit-seeking and risk-avoidance attribute-based appeals, irrespective of food type. These data sets were then divided into "below poverty" and "above poverty" groups, and compared by using the basic model (Figure 5-5). Table 5-18 and Table 5-19 present the parameter estimates for the different groups. These tables also present the bootstrap results for each group's indirect effect. The bootstrap results did not include 0 within the 95% confidence interval. Thus, partial mediation is established and significant for each ad response.

[Table 5-18 about here]

[Table 5-19 about here]

For advertised food products perceived to be healthy, it was found that consumers who are above the poverty level exhibited stronger associations between self-congruity and the ad responses. The statistical significance of the moderating effects of self-congruity across ad responses was also confirmed by Chi-square analysis. In contrast, the moderating effect of functional-congruity was observed only for PI. Consumers below the poverty threshold exhibited stronger association between functional-congruity and PI than consumers above poverty threshold.

The above tendency (i.e.,, self-congruity is more influential among above-poverty respondents while functional-congruity is more influential among below-poverty respondents) was more pronounced for the food products advertised with HNR claims (see Table 5-19). The impact of self-congruity on ad responses was stronger with consumers above the poverty threshold compared with consumers below poverty threshold, and the moderating effects were statistically significant according to chi-square tests. In contrast, consumers below the poverty threshold exhibited stronger associations between functional-congruity and ad responses than consumers above the poverty threshold. The moderating effects were also

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statistically significant except for claim believability. Thus, H5a and H5b were partially

supported by these results.

Hypothesis 6 Test: Education. The second moderator tested was consumers'

education level. H6 predicted the following regarding the moderating role of education level:

> H6: For ads for food products (a) perceived to be healthy and (b) advertised with
> HNR claims, the self- and functional-congruity of consumers with a lower education
> level will have weaker effect on ad responses than that of consumers with a higher
> education level.

To test the hypothesis, samples were divided into low and high education levels.

Consumers who graduated until high school were categorized into a lower education group,

while consumers having more than bachelor's degree were categorized into a higher

education group. Based on the categorization, the experimental sets of healthy food ads and

HNR claimed ads were selected respectively. These data sets were then compared by using

multi-group SEM. Table 5-20 and Table 5-21 present the parameter estimates for the

different groups. The bootstrap results for each group did not include 0 within the 95%

confidence interval. Thus, partial mediation is established and significant for each ad

response.

[Table 5-20 about here]

[Table 5-21 about here]

Chi-square tests and the differences of standardized estimates between the lower and

higher education groups reveal the higher education group exhibited significantly stronger

association between self-congruity and ad responses across all of the healthy food product

ads, whereas lower education group exhibited the significant association only on purchase

intention (see Table 5-20). In contrast, the moderating effect of functional-congruity was

observed only for PI. The lower education group exhibited a stronger association between

functional-congruity and PI than the higher education group.

Similarly, for the food products advertised with HNR claims (see Table 5-21), the impact of self-congruity on ad responses was also stronger in the higher education group compared with the lower education group. Chi-square test confirmed such moderating effects across all ad responses. Conversely, the lower education group exhibited stronger associations between functional-congruity and ad responses than the higher education group. Moderating effects were statistically significant for Aad, Ab, and PI. Thus, H6a and H6b were partially supported.

Hypothesis 7 Test: Body Mass Index. The third moderator tested was Body Mass Index (BMI). H7 predicted:

> H7: For ads for food products (a) perceived to be healthy and (b) advertised with HNR claims, self- and functional-congruity of consumers who are overweight or obese will have weaker effect on ad responses than consumers who are not overweight or obese.

Samples were divided into not-overweight and overweight groups to test the hypothesis. Based on the BMI categorization explained in Chapter 3, consumers who are over 25 BMI score were categorized into the "overweight" group, while consumers who are under 25 BMI score were categorized into the "not-overweight" group. The experimental sets of healthy food ads and HNR claimed ads were then selected respectively from each group. Table 5-22 and Table 5-23 presents the parameter estimates for the two groups. The bootstrap results for each group did not include 0 within the 95% confidence interval. As a result, partial mediation is established and significant for each ad response.

[Table 5-22 about here]

[Table 5-23 about here]

As indicated by chi-square tests, the direct effects of self-congruity on ad responses were not significantly different between the over and not-overweight groups in either of the data sets (i.e., healthy product ads and HNR claimed ads). However, for the associations between functional-congruity and ad responses, the overweight group exhibited stronger associations than the not-overweight group. These differences were significant for Aad and Ap in the healthy product ad data set at $p < .05$ level. Thus, H7a and H7b were not supported.

Hypothesis 8 Test: Health Consciousness. The next moderator tested was level of health consciousness. H8 proposed the moderating role of health consciousness as follows:

> H8: : For ads for food products (a) perceived to be healthy and (b) advertised with HNR claims, self- and functional-congruity of consumers who are highly health conscious will have a stronger effect on ad responses than consumers who are less health conscious.

To test the hypotheses, samples were divided into consumers who are highly health conscious and consumers who are lowly health conscious. A median split (mean value "4") was used to create the high and the low health conscious groups. Based on the categorization, the experimental sets of healthy food ads and HNR claimed ads were then selected respectively. Table 5-24 and Table 5-25 present the parameter estimates for the two groups.

[Table 5-24 about here]

[Table 5-25 about here]

For the ads with food products perceived to be healthy, the low health conscious group exhibited stronger associations between self-congruity and ad responses than the high health conscious group (see Table 5-25). Chi-square tests revealed that this tendency was statistically significant on Aad and Ap. In contrast, the high health conscious group exhibited stronger associations between functional-congruity and ad responses than the low health conscious group. Chi-square test confirmed these moderating effects for Aad, Ap, Ab, and PI.

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Likewise, for the food products advertised with HNR claims (see Table 5-25), the impact of self-congruity on ad responses was also stronger for the low health conscious group compared with the high health conscious group. Chi-square test confirmed these moderating effects on Aad, Ap, and PI. Conversely, the high health conscious group exhibited stronger associations between functional-congruity and ad responses than the low health conscious group. These moderating effects were statistically significant across all HNR ad responses, except for Cb.

The bootstrap results for each group did not include 0 within the 95% confidence interval, except for the PIs of both healthy food product and HNR claimed ads. Such exceptions are due to insignificant direct effects of functional-congruity on PI. Thus, H8a and H8b were partially supported.

Hypothesis 9 Test: Body Esteem. Consumers' level of body esteem was the next moderator tested. H9 proposed the following about the moderating role of body esteem:

> H9: For ads with food products (a) perceived to be healthy and (b) advertised with risk-avoidance claims, self- and functional-congruity of consumers who have lower body esteem will have stronger effect on ad responses than consumers who have higher body esteem.

First, consumers' body esteem (BE) was divided into three categories (Mendelson, White, and Mendelson, 1996): BE Appearance, BE Attribution, and BE weight. A median split (mean value "4") was then applied to create BE Appearance, BE Attribution, and BE weight groups and the experimental sets of healthy food ads and HNR claimed ads were then selected from those data sets. Table 5-26 to Table 5-31 present the parameter estimates for the different groups for the body esteem sets.

According to the bootstrap results for indirect effects, all the mediation models did not include 0 within the 95% confidence interval. Thus, partial mediation is established and

significant for each ad response across the three body esteem types (see Table 5-26 to Table 5-31).

[Table 5-26 about here]

[Table 5-27 about here]

For BE Appearance, not many significant moderating effects between low and high BE Appearance groups were observed (see Table 5-26 and 5-27). For the food products perceived to be healthy, the low BE Appearance group exhibited stronger direct effects of self-congruity than the high BE Appearance group only for PI ($p < .05$). Similar results were observed for the food products advertised with HNR claims, but statistical significance was not reached at $p < .05$ level.

[Table 5-28 about here]

[Table 5-29 about here]

For BE Attribution, a statistically significant moderating effect was observed for PI only for the ads for food products perceived as healthy (see Table 5-28). The low BE Attribution group exhibited stronger association between self-congruity and PI, while the high BE Attribution group exhibited stronger association between functional-congruity and PI. For the food products advertised with HNR claims, significant moderating effects of self-congruity on ad responses were observed for Aad and PI. Similar to the healthy food ad set, the moderating effect of functional-congruity was only observed for PI (see Table 5-29 for detail).

[Table 5-30 about here]

[Table 5-31 about here]

For the BE Weight category, in contrast to the two body esteem categories, significant moderating effects were observed across all ad responses ($p < .05$). For both data sets of food advertising, the low BE weight group exhibited stronger associations between

self-congruity and ad responses than the high BE weight group. Conversely, the high BE weight group exhibited stronger associations between functional-congruity and ad responses than the low BE weight group. Thus, H9a and H9b were partially supported.

Hypothesis 10 Test: Current dieting status. The last moderator tested was consumers' level of current diet status. H10 proposed the following about the moderating role of current dieting status:

> H10: For ads for food products (a) perceived to be healthy and (b) advertised with risk-avoidance claims, self- and functional-congruity of consumers who are currently dieting will have stronger effect on ad responses than consumers who are not currently dieting.

Samples were divided into not-dieting and dieting groups to test the hypothesis. Based on the categorization, the experimental sets of healthy food ads and the ads with risk-avoidance attribute-based appeals were then selected respectively from each data set. Table 5-32 and Table 5-33 present the parameter estimates for the different groups.

[Table 5-32 about here]

[Table 5-33 about here]

For the ads for food products perceived to be healthy, the moderating effects of functional-congruity on ad responses were more prominent than those of self-congruity. Consumers who were currently dieting exhibited stronger associations between functional-congruity and ad responses than consumers who were not dieting. As revealed by chi-square tests, the moderating effects of self-congruity were not significant across ad responses, while those of functional-congruity were significant for Cb, Aad, Ap, and PI. However, for the food products advertised with risk-avoidance attribute-based appeals, while the direct effects of self-congruity on ad response tended to be stronger among the consumers who were not dieting, the direct effects of functional congruity on ad responses tended to be stronger

among the consumers who were currently dieting. As revealed by chi-square tests, the moderating effects of self-congruity were significant for Aad, Ap, and Ab, while those of functional-congruity were significant for PI.

The bootstrap results of all mediation models did not include 0 within the 95% confidence interval. As such, partial mediation is established and significant for each ad response. Thus, H10a and H10b were partially supported.

CHAPTER 6

SUMMARY, DISCUSSION AND RESEARCH DIRECTIONS

A multi-stage research procedure was executed to experimentally test a model of the key moderators, mediators, and outcomes of food advertising. Specifically, the research tested the empirical relationships between individual propensities (income, education, BMI, health consciousness, body esteem, and diet), food product types (healthy and unhealthy), ad-attribute-based appeal types (benefit-seeking vs. risk avoidance vs. taste), consumer psychological motivations (self- and functional-congruities), and ad-related responses (e.g., product preference, attitude toward ad, attitude toward brand, and purchase intention) in two experiments. The two experiments were preceded by a content analysis (first stage) and a series of product and attribute selection pretests (second stage). The first two stages were executed to inform the research's experimental design.

The content analysis analyzed the frequency of HNR claim types (e.g., nutrient-content, structure/function, and health claims) in a sample of 952 magazine food advertisements. The identified 681 HNR claims were then categorized into benefit-seeking and risk-avoidance attribute-based appeal types based on consumer motivation orientations (Dutta-Bergman 2004a, 2004b; Guthrie et al., 1995; Heimbach 1987) in accordance with the conceptual framework of halo effect in cognitive consistency theory (Alhakami and Slovich 1994). Consistent with prior research (e.g. Parker 2003), nutrient-content claims were present overwhelmingly more often in the analyzed food advertisements than structure/function and health claims. Fortified fiber, protein, and vitamins were predominantly used in nutrient-content claims in association with benefit-seeking attribute-based appeals, while less fat, calories, and sugar were more frequent in association with risk-avoidance attribute-based

appeals. Almost two thirds of the 681 HNR claims contained risk-avoidance attribute-based appeal types ($N = 436$, 64.0%). The other third contained benefit-seeking attribute-based appeal types ($N = 245$, 36.0%).

The two pre-tests were conducted to identify and select (1) healthy versus unhealthy food products (i.e., food products were classified based on perceived healthiness and unhealthiness) and (2) utilitarian evaluative criteria associated with consumer food choice. Multigrain cereal and plain yogurt were selected as healthy food products while chocolate chip cookies and pepperoni pizza were selected as unhealthy food products to be featured in the experimental ads. Taste, health, weight control, convenience, price, and natural content were identified as evaluative criteria for food choice.

From the content analysis and the pretests, the experimental ad stimuli were created manipulating benefit-seeking/risk-avoidance attribute-based appeals by healthy/unhealthy food types. The evaluative criteria were used in the measurement of consumer response to the ad stimuli to access food choice judgments. A series of manipulation checks for the created ad stimuli were also executed during the product and attribute selection pretests (second stage).

The goal of the experimental stage of the research was three fold: (1) to examine differential consumer responses to food advertisements matched or mismatched by different advertising attribute-based appeal types (i.e. benefit-seeking vs. risk-avoidance vs. taste attributes) and product types (i.e., healthy vs. unhealthy products); (2) to compare the predictive effects of self- versus functional-congruities on consumer responses to food advertisements with the different attribute-based appeals and product types; and (3) to identify how individuals' various social/physiological/ psychological propensities moderate the predicted effects of self- and functional-congruities. Ten hypotheses and one research question were proposed to accomplish the three-part experimental goal:

(1) H1 and H2 were posed to test the match-up effect between advertising attribute-based appeal type and product type in the food advertisements;

(2) H3, H4, and R1 were proposed to assess the role of the self- and functional-congruity mechanism in predicting ad-related responses;

(3) H5 through H10 were asked to test the moderating effects of individual propensities (e.g.: income, education, health consciousness, body-esteem, and dieting status) on the predictive effects of self- and functional-congruity on ad-related responses.

To test the hypotheses and research question, two 2 (healthy vs. unhealthy products) x 3 (benefit-seeking vs. risk-avoidance vs. taste attribute-based appeals) experiments were conducted using the ad stimuli developed from the first two steps of the multi-stage research procedure. Experiment 1 tested the theoretical relationship between the health halo effect and unhealthy=tasty intuition concepts using a sample of students. ANCOVA technique was employed to test the interaction effect between ad attribute-based appeals and food product types. Experiment 2 used a non-student sample to replicate the first experiment, and to test the predictive mechanism of self- and functional-congruity on ad responses. ANCOVA technique was employed for the replication while a set of SEM analyses was used to examine the predictive mechanism. Additionally, multi-group SEM was also conducted to test the moderating effects of individual propensities on the relationships between self-/functional-congruity and ad responses.

Summary of the Major Findings of the Experiments

ANCOVA Results

In the advertisements for healthy foods, H1 and H2 predicted that both benefit-seeking and risk-avoidance ad attribute-based appeals would produce greater advertising effects than taste attribute-based appeals. In the ads for unhealthy foods, taste attribute-based

appeals were expected to produce greater advertising effects than both benefit-seeking and risk-avoidance attribute-based appeals, especially after controlling consumers' individual propensities (H2). The experiments found that consumers' unhealthy=tasty intuition was a stronger influence on ad responses than the influence of health halos in the form of nutrient-content associated attribute-based ad appeals.

[Table 6-1 about here]

Both experiments found higher ad-related responses when healthy food products were advertised with benefit-seeking or risk-avoidance attribute-based appeals than with taste attribute-based appeals. However, higher ad-relates responses were found when unhealthy food products were advertised with taste attribute-based appeals than with benefit-seeking or risk-avoidance ad attribute-based appeals. In other words, although the two nutrient content paired attribute-based appeals enhanced perceived healthiness of the advertised food products by increasing perceived benefit and reducing perceived risk, the presence of the two ad attribute-based appeal types decreased the perceived taste of the advertised food products. Consequently, the first and second hypotheses were supported across the different types of ad-related evaluations.

SEM Results

Hypotheses 3 and 4 predicted that both self- and functional-congruity would positively predict ad responses while self-congruity would also positively predict functional-congruity. Research Question 1 asked which congruity would have stronger predictive effects on ad responses by match-ups of benefit seeking/risk avoidance attribute-based appeals and healthy/unhealthy product types.

The respondents' actual self-congruity and ideal self-congruity were not found to function as different constructs in the evaluation of food advertising. Thus, these two self-congruity types were used to represent overall self-congruity (i.e., second-order). Based on

second-order self-congruity, it was found that ad responses were positively predicted by self- and functional-congruity, while self-congruity positively predicted functional-congruity. Thus, hypothesis 3 and 4 were generally supported.

The analysis for RQ1 found a diverse balance of effects between self-congruity and functional-congruity on ad-related responses for each attribute type/product-type match-up (see Table 5-17 for the results). For the ads featuring healthy foods, functional-congruity had stronger predictive effects on claim believability (Cb), attitude toward ad (Aad), attitude toward product (Ap), and attitude toward brand (Ab) than self-congruity, irrespective of attribute type. For the unhealthy food products, functional-congruity also had stronger predictive effects when the products were advertised with benefit-seeking and risk-avoidance attribute-based appeals. However, when unhealthy food products were advertised with taste attribute-based appeals, self-congruity had stronger predictive effects on Cb, Aad, and Ap. For purchase intension (PI), the predictive power of self-congruity was stronger than functional-congruity across the attribute-type/product type match-ups, except for unhealthy food products advertised with nutrient content associated risk-avoidance attribute-based appeals.

Hypotheses 5 through 10 stated predictions about the moderating effects of individual propensities (i.e., income, education, body mass index (BMI), health consciousness, body esteem, and current dieting status) on the relationships between self-/functional-congruity and ad responses. Generally speaking, the expectation of the hypotheses was that the predictive effects of self- and functional-congruity on ad responses would vary depending on individual factors. A results summary of Hypotheses 5 through 10 testing is presented in Table 6-2.

[Table 6-2 about here]

Concerning the moderating effect of income level for the healthy product ads (Hypothesis 5a), self-congruity had a stronger effect on Aad, Ap, Ab, and PI among

consumers who were above the poverty level than those below the poverty level. In contrast, functional-congruity had a stronger effect on PI among consumers who were below the poverty level than those above the poverty level.

For the moderating effect of income level on the ads with nutrient-content claims (Hypothesis 5b), self-congruity had a stronger effect on Cb, Aad, Ap, Ab, and PI among consumers who were above the poverty level than those below the poverty level. Functional-congruity had a stronger effect on Aad, Ap, Ab, and PI among consumers below the poverty level than those above the poverty level.

Hypothesis 6a tested the moderating effect of education level in the ads for healthy products. Self-congruity had a stronger predictive effect on Aad, Ap, Ab, and PI among consumers with a higher education level than those with a lower education level. Functional-congruity, in contrast, had a stronger effect on PI among lower education level consumers that their higher education level counterparts. Similarly, for hypothesis 6b testing the moderating effect of income level on ads with nutrient-content claims, self-congruity had a stronger effect on Cb, Aad, Ap, Ab, and PI among consumers with a higher education level than lower education level consumers. Functional-congruity, however, had a stronger effect on Ap, Ab, PI among lower education level consumers than those with a higher level of education.

Concerning Hypothesis 7, BMI level only produced a significant moderating effect for healthy product ads. Functional-congruity had a stronger effect on Aad and Ap among overweight consumers.

For the moderating effect of health consciousness for healthy products ads (Hypothesis 8a), self-congruity had a stronger effect on all ad responses among less health conscious consumers than higher health conscious counterparts. In contrast, functional-congruity had a stronger effect on Aad, Ap, Ab, and PI among highly health conscious

consumers than consumers who were less health conscious.

For Hypothesis 8b, which tested the moderating effect among ads with nutrient-content claims, self-congruity had a stronger effect on Aad, Ap, and PI among less health conscious consumers than their higher health conscious counterparts. Functional-congruity, however, had a stronger effect on Aad, Ap, Ab, and PI among consumers who were highly health conscious than those who were less health conscious.

For hypothesis 9, individual body esteem level was divided by three sub-categories: BE-Appearance, BE-Attribution, and BE-Weight. BE-Appearance had no significant moderating effects on the ad-related responses, with one exception: self-congruity had a stronger effect on the PI for ads featuring healthy products among low BE-Appearance consumers than their high BE-Appearance counterparts. For healthy product ads, self-congruity had a stronger effect on PI among low BE-Attribution consumers than high BE-Attribution consumers. Functional-congruity, in contrast, had a stronger effect on PI among high BE-Attribution consumers than their low BE-Attribution counterparts.

Similarly, for the ads with nutrient-content claims, self-congruity had a stronger effect on Aad and PI among low BE-Attribution consumers, while functional-congruity had a stronger effect on PI among high BE-Attribution individuals. For BE-Weight, across both healthy products and HNR claimed product ads, self-congruity had a stronger effect on all of the ad-related responses among low BE-Weight consumers than their high BE-Weight counterparts, whereas functional-congruity had a stronger effect among high BE-Weight consumers than low BE-Weight individuals.

Concerning the effects of current dieting status on ads for healthy product (H10a), self-congruity had no significant moderating effects. Functional-congruity, in contrast, had a strong effect on Cb, Aad, Ap, and Ab among dieting consumers than non-dieters. For food products advertised with risk-avoidance attribute-based appeals (H10b), self-congruity had a

stronger effect on Aad, Ap, and Ab among non-dieting individuals than those dieting, while functional-congruity had a stronger effect on PI among those dieting than non-dieters.

Theoretical and Practical Implications

The research's ANCOVA and SEM results have theoretical and practical implications for both the food advertising and public health domains. In the following sections, these implications are discussed. It should be noted that the implications of the experiment results pertain to food ads making nutrient-content claims in association with benefit-seeking and risk-avoidance attribute-based appeals only.

Implications of the ANCOVA Analysis

First, the results are suggestive of how the "health halo effect" associated with nutrient-content claims functions in food advertising to influence consumers' perceived healthiness of advertised products: perceived healthiness of the advertised products was enhanced by the benefit-seeking attribute-based appeal type while perceived risk was reduced by the risk-avoidance attribute-based appeal type. Regardless of the advertised food product types, benefit-seeking attributes enhanced perceived healthy benefit and reduced perceived unhealthy risk. Similarly, risk-avoidance attribute-based appeals reduced perceived unhealthy risk for the advertised food products and enhanced perceived benefit.

These results are consistent with Alhakami and Slovic's (1994) expectation about the inverse relationship between perceived benefit and risk (also see Choi and Springston in press). According to their research, the halo effect of strong benefit or risk leads to cognitive bias toward the object or behavior because consumers want to establish cognitive consistency. Although previous studies have discussed the effects and side effects of the health halo (Chandon and Wansink 2007; Kozup, Creyer, and Burton 2003; Roe, Levy, and Derby 1999; Wansink and Chandon 2006), few studies have empirically examined how the health halo works in the context of food advertising to affect the perceived healthiness of advertised food

products (Choi and Springston in press; Wansink and Chandon 2006). This study more fully explains the halo effect as a mechanism through which HNR-based benefit-seeking and risk-avoidance attribute-based appeals operate at the perceptual level to enhance perceptions of healthy benefit and to reduce perceptions of unhealthy risk simultaneously.

On other hand, this study suggests the halo effect mechanism is not always universal because of the unhealthy = tasty intuition phenomenon, which also operates in the context of food advertising (also see Choi and Springston in press). Even though consumers evaluated the food ads with benefit-seeking and risk-avoidance attribute-based appeals as healthier than those with taste attribute-based appeals irrespective of the advertised foods' healthiness, they exhibited higher ad-related responses for healthy food products advertised with nutrient-content claims than healthy food products advertised with taste attribute-based appeals and higher evaluations for unhealthy food products advertised with taste attribute-based appeals than unhealthy food products advertised with nutrient-content claims. Compared to taste attribute-based appeal types, benefit-seeking and risk-avoidance attribute-based appeal types produced better advertising effects for perceivably healthy food products; the two attribute-based appeal types did not work in the same way for perceivably unhealthy food products. Rather, benefit-seeking attribute-based appeals were less persuasive than taste attribute-based appeals across the two experiments, and risk-avoidance attribute-based appeals were also less persuasive or at least not better than taste attribute-based appeals.

These findings suggest that attribute-based appeal type/product-type match-up effects are primarily based on consumers' unhealthy = tasty intuition (Choi and Springston in press; Raghunathan et al., 2006). Even though benefit-seeking and risk-avoidance attribute-based appeals enhanced the perceived healthiness of advertised food products, these attributes produced better advertising effects for perceivably healthy products only. The "healthy products only" effect is in all likelihood the result of the nutrient-content claim mismatch

with consumers' taste expectation for unhealthy food products. Indeed, this study found that while nutrient-content-based benefit-seeking and risk-avoidance attribute-based appeal types increased perceived healthiness across food product types, these attribute-based appeals also decreased perceived taste of the advertised products compared to taste attribute-based appeals (also see Choi et al. 2012).

Given that previous studies have focused mainly on the regulatory issues of HNR claims (Andrews et al. 1998, 2000; Chandon and Wansink 2007; Heller 2001; Kozup et al. 2003; Parker 2003; Wansink and Chandon 2006), the findings of this research suggest that the effects of nutrient-content claims will differ depending on food's healthiness, and advances a recent study by Choi, Paek, and King (2012). Their study found that "more calcium" and "more vitamin A" claims produced better advertising effects for perceivably healthy than unhealthy food products. In light of the preponderance of regulatory focused studies, these results provide more generalizability for the differential effects of claim types in food advertising because it investigated (1) a specific and dominant HNR claim type paired with attribute-based appeals (benefit-seeking and risk-avoidance) based on consumer motivation; (2) examined effects for a wider array of advertised healthy and unhealthy food products; and (3) measured the responses of adults as well as students.

Several practical implications for food advertising practitioners are suggested by the above theoretical contributions. First, and perhaps foremost, is the indication that level of perceived healthiness is an important factor for messaging about perceivably healthy products, while the level of perceived taste is an important factor for messaging about perceivably unhealthy products (also see Choi and Springston in press). For advertising practitioners, the implication is rather straightforward – when creating food advertising, they must seriously consider consumers' perceptions of the healthiness of advertised food products before using particular types of benefit-seeking and risk-avoidance attribute-based appeals in association

with nutrient content claims

Based on these specific results, the use of benefit-seeking and risk-avoidance attribute-based appeals is strongly recommended in advertising for perceivably healthy food products, but not in advertising for perceivably unhealthy foods (also see Choi and Springston in press). As noted earlier, benefit-seeking and risk-avoidance attribute-based appeal types enhance the advertising effects for perceivably healthy food products, but not for perceivably unhealthy food products (i.e., benefit-seeking ad attribute-based appeals were less persuasive than taste attribute-based appeals across the two experiments, and risk-avoidance ad attribute-based appeals were also less persuasive or at least no better than taste attribute-based appeals). Thus, in the case of the advertising of unhealthy products, the use of the two nutrient content-based attribute appeal types would not only likely result in unsuccessful advertising effects, but such attributes would also result in decreased perceived taste since consumers expect taste in unhealthy food products (Raghunathan et al. 2006). Moreover, considering the criticism that the misuse of nutrient-content claims in advertising for unhealthy food products contributes to unhealthy eating disorders and behaviors in the U.S. (Chandon & Wansink 2007; Wansink & Chandon 2006), there is no reason for advertising practitioners to use the problematic claim type for unhealthy food products.

Consider the following marketplace examples which support the above reasoning. Kellogg All-Bran cereal, an arguably healthy product, had great success in the 1980s placing emphasis on fortified fiber and reduced cancer risk (Freimuth et al. 1988; Nestle 2007), while Dannon enjoyed market success by focusing on the benefits of fortified Bifidus Regularis1 and Probiotics2 in its Activia yogurt (as cited in Choi, Paek, and King 2012; Martin 2007). McDonald's, in contrast, failed in its introduction of the McLean Burger in the early the 1990s. The product, which emphasized low-fat content, was unsuccessful in the market since consumers felt the product less tasty than regular burgers (Gladwell 2001; Raghunathan et al.

2006). Similarly, Diet Coke Plus, which was launched with an emphasis on the combination of fortified mineral and vitamin claim, has not demonstrated much success in the market place (Alarcon 2008; Choi and Springston in press).

Nevertheless, if food advertisers choose to use benefit-seeking and risk-avoidance attribute-based appeals in ads for perceivably unhealthy food products, care must be taken to make sure the used attribute-based appeals do not to contribute to a decrease in consumers' perceived taste. Three possible solutions should be considered for the purpose.

The first solution is to use healthy nutrients which are perceived as more delicious (Choi, Paek, and King 2012). The use of perceivably healthy nutrients may not dampen consumer's expectation of taste, and could also sidestep some of the social criticisms frequently leveled at unhealthy food products. Indeed, Five Guys and Chick-fil-A emphasize that their fast food products are cooked in peanut oil, which is relatively healthier than other cooking oil options (Mayo Clinic staff 2011). Despite the HNR claim, these products are perceived as both healthy and tasty (Consumer Reports.org 2011), and enjoy success in the U.S. marketplace.

The second solution is to craft food advertisements to convey a greater degree of "deliciousness". Although the findings of this research suggest that both benefit-seeking and risk-avoidance attribute-based appeals decrease the perceived taste of advertised products, advertising practitioners could attempt to mitigate any decrease in taste by using food visuals that make sure products are portrayed as deliciously as possible. Because consumers process advertising information both verbally and visually (also Bakratsas and Ambler 1999; Rossiter and Percy 1978, 1983), imagery of "delicious looking" food might possibly offset the decrease in perceived taste of foods advertised with the two HNR claim/attribute-based appeals.

The third alternative would be emphasizing both taste and claimed nutrient content in food advertising in an effort to maintain perceived taste. While Raghunathan and his colleagues (2006) found a strong unhealthy = tasty intuition in their research, they also suggested that emphasizing health and taste together in association with a product might break the unhealthy = tasty intuition. Since the current study found that consumers' perceived healthiness and taste were differentially influenced by different ad attribute-based appeals, emphasizing nutrient-content and taste for an advertised product could be a feasible option to enhance both perceived healthiness and taste in consumer minds. Moreover, as Raghunathan and his colleagues (2006) suggested, marketing strategies featuring credible sources and opinion leaders could facilitate consumers' acceptance of such advertising messages.

For public health policy officials, the findings are also actionable (also see Choi and Springston in press). Although benefit-seeking and risk-avoidance attribute-based appeals were not found to produce better advertising effects than taste attribute-based appeals for perceivably unhealthy foods, the research reaffirmed the finding of previous studies that even a simple nutrient-content claim can enhance perceived healthiness of advertised products (Andrews et al. 1998, 2000; Choi et al. 2012). Additionally, the findings indicate that the perceived healthiness of an advertised food product may be differentially affected by nutrient content associated attribute-based appeals. As established by this research, a benefit-seeking attribute-based appeal enhanced perceived benefit while a risk-avoidance attribute-based appeal reduced perceived risk among consumers. The statistical difference for advertising effects between risk-avoidance and taste ad attribute-based appeal types for unhealthy food category was not as distinctive as the difference between benefit-seeking and taste attribute-based appeals. Thus, policy officials must exercise caution in making absolute judgments about the effects of nutrient-content associated benefit-seeking and risk-avoidance attribute-based appeals, especially for the unhealthy food category. There is the possibility that

nutrient-content claimed food advertisements with varying attribute-based appeals for unhealthy products could be more persuasive among some consumer groups than others. For instance, if consumers wish to lose weight or engage in healthy dietary behaviors, inappropriately claimed food products could mislead them to believe the advertising products are as equally healthy as natural healthy foods. In this sense, these findings suggest that public officials should be vigilant in their efforts to promote accurate food product literacy and to educate consumers on healthy dietary behaviors. More is said about the research's theoretical and practical implications in the following sections.

Implications of the Basic SEM Analysis

Like the ANCOVA results, the SEM results also suggest a number of theoretical and practical implications. On the theoretical level, the research found that consumers' actual self-congruity and ideal self-congruity are identical when they evaluate food advertisements. Previous studies on consumer self-concept have reported conflicting results indicating consumers' actual and ideal self-congruities are similar or dissimilar constructs (Delozier and Tillman 1972; Dolich 1969; Ericksen 1996; Han 2006; Hattie 1992; Jamal and Goode 2001; Malär et al. 2011; Sirgy 1982, 1985; Sirgy et al.1991; Zinkhan and Hong 1991). It is reasonable to speculate that the different results generated by different studies are partially due to the fact that a wide range of different product categories were represented in the studies (see Choi 2008; Ericksen 1996; Han 2006; Malär et al. 2011; Sirgy 1982, 1985; Sirgy et al.1991; Zinkhan and Hong 1991).

The failure of the present research to find distinctions between actual and ideal self-congruities in ad responses might have occurred for several reasons. The first possible reason is linked to consumers' general purchase patterns regarding food products. Food products are more routinely and easily purchased by consumers than many other products. Unlike the purchase of products such as luxury or prestigious items which require a high degree of

decisional processing, decisions about foods fall into the category of mundane, everyday-type occurrences. Thus, it is reasonable to speculate that actual and ideal self-congruities may not be functionally different when consumers think about and make purchase decisions involving food products, as least as represented by the foods featured in the manipulated ads. Accordingly, the practical implication of this finding for advertising practitioners is that they should not overly concern themselves about appealing to one type of consumer self-image in food advertising over the other. Since the congruence between self-image and product user-image positively predicts ad responses, portraying positive self-imagery regarding proper dietary behaviors might work to enhance food advertising effects.

Another reason for the failure is the fact that a well-know brand was not used in this research. The measurement of actual and ideal self-congruities in previous studies was primarily to assess the emotional attachment of brand (Malar et al. 201; Sirgy et al. 1991). Here, a not-so-well-known brand was used in the experiments to control for internal validity in assessment of consumers' emotional attachment to the mix of product and attribute categories. Thus, follow-up studies are needed using well-known food products, such as McDonalds, Weight Watchers, to name a few.

The finding that self-congruity and functional-congruity have different predictive power across the combinations of food products and attribute-based appeal types is also important. Three distinctive patterns were found by the overall SEM analyses (see Table 5-17). First, the predictive effect of functional-congruity tended to be stronger for the ad stimuli featuring healthy foods with nutrient-content claims. For the healthy food ads including all attribute-based appeal types, consumers' functional-congruity was a stronger predictor than self-congruity among 11 of 15 combinations. Similarly, for the attribute-based food ads including all product types, functional-congruity was also a stronger predictor among 17 of 20 combinations.

Second, the predictive effect of self-congruity tended to be stronger for the unhealthy food ads with taste attribute-based appeals. Self -congruity was a stronger predictor than functional-congruity across all ad responses except for attitude toward advertisement.

Third, when ad response moves to the level of purchase intension (PI), the predictive power of self-congruity became stronger than that of functional-congruity across ads for both healthy and unhealthy food products, except for in the case of ads for unhealthy food products using risk-avoidance ad attribute-based appeals.

Theoretically, these findings contribute to the existing food advertising literature in several ways. First, since self-congruity represents the value-expressive function of consumers where as functional-congruity represents the utilitarian function (Johar and Sirgy 1991), this study suggests consumers perceive healthy and nutrient-content claimed advertised foods as more utilitarian and unhealthy food with taste claims as more value-expressive. This reasoning is supported by previous studies which report that healthy foods and nutrient-content claimed foods are perceived as products enhancing functional benefit (Bech-Larsen and Grunert 2003; Verbeke 2006), whereas consumer taste motivations for unhealthy foods comes from affective and hedonic desires (Raghunathan et al. 2006). Further, this research suggests consumers see the congruence between a product's user-image and self-image (self-congruity) as more important than the match between utilitarian attributes of advertised food product and consumers' expectation of those attributes (functional-congruity) when making purchase decisions.

In addition to the previously noted practical implication for advertising messaging, other implications for practitioners are suggested by the SEM results. When advertisers choose to use benefit-seeking and risk-avoidance attribute-based appeals in ads for their healthy food products, satisfying consumers' functional-congruity or utilitarian function would apparently be important factor to the enhancement advertising effects. As noted

previously, this research indicates consumers tend to perceive healthy foods as utilitarian products because functional-congruity was found to have stronger predictive power than self-congruity on ad responses. Therefore, if advertisers can positively affect consumer functional-congruity by emphasizing nutrient-contents which are personally important to the target audience, then enhanced functional-congruity should produce better advertising effects for healthy foods.

In the light of the above, food advertisers would be wise to focus on the identification and use of nutrient-content claims which satisfy utilitarian needs of consumers. To accomplish the task, precise and targeted audience research is needed to drive advertising planning. Additionally, when advertising practitioners determine the kinds of nutrient-content claims consumers prefer, it would also be important to link benefit-seeking and risk-avoidance attribute-based appeals to consumers' positive self-imagery in food advertising. As shown in Figure 5-7, although functional-congruity had stronger predictive value than self-congruity, functional-congruity was significantly predicted by self-congruity, and self-congruity itself was also significant predictor of ad responses. Of particular importance, the predictive power of self-congruity was even stronger for purchase intention, the closest measured proxy to actual purchase behavior (see Table 5-17).

The implication is that enhancement of consumer self-congruity should positively influence the increase of functional-congruity as well as positively influence advertising effects. Accordingly, advertising practitioners need to emphasize and pair reliable/preferable nutrient-content ad claims and product user images in food advertising. Such pairing is especially needed when the timing of consumer behavior is more proximate to the purchase decision (e.g., point of purchase, special sale ads, in-store messaging technologies).

For public policy officials, the SEM results shed additional light on why inappropriate nutrient-content claims in food advertising need to be regulated. While healthy

food products are normally perceived as utilitarian, benefit-seeking and risk-avoidance attribute-based appeals in association with nutrient content claims affect food products perceptions making unhealthy food products seem utilitarian. Therefore, although consumers usually expect good taste for unhealthy foods, it is reasonable to suggest the possibility that some consumer groups may prefer unhealthy HNR claimed food products for their utilitarian needs, such as losing weight or enhancing health (Choi, Paek, and King 2012; Wansink and Chandon 2006) and thus may be more vulnerable to the persuasion of food ads for unhealthy products featuring benefit-seeking and risk-avoidance attribute-based appeals. This regulatory issue is discussed more detail in the next section.

Implications of the Multi Group SEM Analyses

The multi-group SEM examined the moderating effects of different individual propensities on the predictive mechanism of self- and functional-congruities on ad responses. The results revealed many significant moderating effects, which have valuable theoretical and practical implications for food advertising.

To explain the theoretical contributions of the multi group analyses, it necessary to revisit some background information on self- and functional-congruity theory. According to Johar and Sirgy (1991), self- and functional-congruity theory shares the same persuasion foundation as the Elaboration Likelihood Model (ELM). In their view, self-congruity's route to persuasion reflects peripheral processing, while functional-congruity's route reflects central processing (p. 27). Consequently, when consumers believe functional-congruity is important for evaluating encountered advertising, they cognitively elaborate on the quality of the ad message and its information. However, in situations where message quality (and other forms of information) is believed less important, they focus on peripheral source cues, thus making consumer self-congruity a more important predictor of advertising evaluations (Johar and Sirgy 1991). Additionally, when consumers cognitively process advertising, they are

active processors of message content and more carefully scrutinize message arguments. However, when consumers peripherally process advertising, information processing is passive and decision making is more often based on simplistic cues, not message arguments (Petty, Priester, and Brinol 2002).

Given the above theoretical background, the results of multi group SEM suggest the following theoretical implications. First, the strength of the predictive effects between self- and functional-congruity is negatively related. Initially, the hypotheses in this research posited self- and functional-congruity would be enhanced when consumers are more involved in message processing. However, the multi group SEM results indicate that while the predictive power of functional-congruity was increased, that of self-congruity decreased. Taking into consideration that value-expressive and utilitarian functions are opposite (Johar and Sirgy 1991; Shavitt 1990, 1992), and that the increase of cognitive processing reduces peripheral processing (see Petty, Priester, and Brinol 2002), it would seem reasonable to speculate that these results suggest people having more personal relevance are more likely to process information conveyed in food advertisement cognitively, while people having less personal relevance are likely to process the information peripherally (Petty, Priester, and Brinol 2002). In other words, it would seem consumers, who are more involved in health and nutrition related issues, evaluate the utilitarian value of nutrient-content claims in food advertisements (functional-congruity) more thoroughly than consumers who are less involved. In contrast, consumers, who are less involved in health and nutrition related issues, would appear to evaluate the congruence between product user-image and self-image (self-congruity) more thoroughly than more involved consumers.

Of special importance, these results provide important implications regarding consumer group differences involving healthy foods and ad-based nutrient-content claims. For healthy food product ads, below poverty consumers with low education, high health

consciousness, high body esteem, and those dieting tend to be more actively involved in the processing of the message content (arguments) of advertisements for healthy foods. In contrast, above poverty consumers with high education, low health consciousness, low body esteem, and not dieting are more likely to be less involved and to process advertisements for healthy products peripherally.

Though there were some differences, the same patterns were found for evaluations of the food ads with benefit-seeking/risk-avoidance ad attribute-based appeals. Below poverty consumers with low education, and high health consciousness were more likely to cognitively process the ad-conveyed information, while consumer above poverty and with higher education tended to process the ad content more peripherally. The pattern was also consistent for the food ads with risk-avoidance attribute-based appeals. Consumers having high body esteem and dieting tended to actively process the food ads with risk-avoidance attribute-based appeals more than the opposed groups, and vice versa.

The above results might be explained by previous studies. Poverty is highly related with low education and with eating disorders such as obesity (Drenowski et al. 2004; Kim and Willis 2007). Thus, it is quite plausible that consumers with less money for purchasing food makes them more likely to evaluate foods and the advertisements for those foods in an utilitarian manner in an effort to satisfy their energy and nutritional needs (see Nestle 2007).

The finding that BE-weight level (weight satisfaction) is the most influential moderating factor of three representative body esteem factors is also suggestive (i.e., compared to BE-Appearance: general feelings about appearance and BE-Attribution: evaluations attributed to others about one's body and appearance). This result implies that the level of consumer weight satisfaction is the most important factor in the processing of the health information in food advertising. Apparently, the more satisfied consumers are with their weight, the more carefully they seem to manage their weight. Indeed, the correlation

between individuals' BE-weight and BMI was significantly negative in this research ($r = -.520, p < .001$). Thus, in contrast to lower BE-weight consumers, consumer having higher BE-weight would seem to be more actively involved in processing ads for healthy foods, especially those ads with risk-avoidance attribute-based appeals.

Furthermore, this research also found physiological difference (BMI) is a less important moderator than other social and psychological propensities. The research indicates information processing of food advertising was affected by BMI in only two instances. For healthy foods, functional-congruity had the predictive effects on Aad and Ab. In contrast, income, education, BE-weight, dieting status, and health consciousness had consistent moderating effects across the ad responses. Thus, consumer information processing of food advertising featuring healthy food products or nutrient-content claims is more affected by the social and psychological backgrounds of consumers than their physiological states. In other words, the results suggest that, even if consumers are more involved with health and nutrition-related information in food advertising, their BMIs are not likely be related to the processing of ad-conveyed information about different foods.

For advertising practitioners, the results of the multi group SEM have implications about the appropriate use of nutrient-content claims with different attribute-based appeals in food advertisements relative to specific target audiences. For below poverty consumers with low education, high health consciousness, high body esteem (especially for high BE-weight), and those currently dieting, it would be appropriate to use strong benefit-seeking and risk-avoidance attribute-based appeals (more utilitarian) because message argument and information are more persuasive to people who are actively involved in an issue (Petty, Priester, and Brinol 2002). Less involved consumers would be more likely the targets of attribute-based appeals to self-congruity (e.g., employing favorable food visuals, advertising endorsers, and credible sources would be important to persuade them, rather than strong ad

messages), since these consumers tend to make decision based on peripheral cues (Petty, Priester, and Brinol 2002).

For public policy officials, the multi-group results also speak to the need to regulate food advertisements with possibly inappropriate nutrient-content claims more rigorously. In the previous section, it was argued that inappropriate nutrient-content claims need to be regulated since paired benefit-seeking and risk-avoidance attribute-based appeal types might influence consumers to process ads for unhealthy foods as they process those for healthy food products, namely in an utilitarian manner. Although people centrally processing a message tend to scrutinize message content more thoroughly (Petty, Priester, and Brinol 2002), the ANCOVA results indicate that respondents perceive unhealthy foods featured in ads with nutrient-content claims as significantly healthier than those with taste attribute-based appeals. Thus, more involved consumers who centrally process health information are more likely to be misled by inappropriate nutrient-content claims for unhealthy food products since ad-conveyed health information is more important and meaningful to them than to other consumers who the health issue is not as relevant.

Accordingly, concern about nutrient-content claims and their potential to mislead some consumers should remain on the regulatory radar of public policy officials. Since the nutrient-content claim is the most problematic of the three legal HNR claim types (Andrews et al. 1998; Choi, Paek, and King 2012; Parker 2003), future regulatory actions should work to improve the regulation of nutrient-content claims in both advertising and non-advertising communication through consumer education programs. These programs should be based on the need to supply accurate information to consumers.

One example of such action would be programs designed to educate the public about precise nutritional information or realistic serving sizes of all advertised food products (Choi, Paek, and King 2012; Wansink 2004; Wansink & Chandon 2006). As noted by others,

regulators need to focus on educating consumers to read and understand the Nutrition Fact Panel attached to food product packaging before they make purchase decisions (Nestle, 2007; also see Choi, Paek and King 2012). Such education would greatly improve consumer product literacy and help protect them against being misled by inappropriate nutrient-content claims.

Educating consumers about healthy dietary behavior would be another useful public policy action. As Nestle (2007) has indicated, health dietary behavior means the consumption of appropriate portions of diverse foods, rather than the consumption of single nutrient-manipulated junk foods. Therefore, continuing health campaigns, such as "ChooseMyPlate" (Choi, Paek and King 2012; see http://www.choosemyplate.gov/), are needed to educate consumers about recommended healthy dietary patterns.

Though the above education efforts do not directly change the content character of food advertising, they would have possible effects on the potential of nutrient-based claims and appeals to influence consumers. Such information would provide consumers with nutritional and dietary knowledge to be employed when they encounter and process the content of food advertisements, especially nutrient-content claims for unhealthy foods.

Limitations and Future Studies

Despite the suggestive importance of the study's findings, the research has several limitations which should be noted. First, even though the study attempted to reflect a wide array of food categories, the results are not "generalizable" to all food product categories or to all forms of food advertising. Consequently, future research needs to replicate the current study using other food product categories and other advertising media (e.g., TV) and message formats (commercials).

The second limitation is inherent in the experimental setting used to manipulate and measure responses. The two experiments were conducted online. Online experiments have

less internal validity than experiments conducted in other settings due to a lower degree of experimental control (Reips, 2000). Thus, replication is needed under both laboratory and field experimental conditions. Of particular importance, research is needed in non-artificial settings (e.g., grocery stores, mart, and restaurants) where researchers can observe whether consumers' actual food choice behavior is consistent with this attitudinal-type study.

Third, this research used an unknown, but real brand in the manipulated ad stimuli. Even though the brand treatment enhanced internal validity, it decreased the study's level of external validity. Future research should be conducted using multiple well known real brands to increase external validity. One interesting approach would be to study a wide array of different real and unreal food brands to determine how they influence the predictive mechanism of self- and functional-congruity on ad responses. The approach would be especially informative since the relationship between self-congruity and emotional brand attachment is important subject of advertising and marketing research (see Malär et al. 2011).

Fourth, this research only used nutrient-content claim types in the two experiments. Although the preliminary content analysis established prominence nutrient-content claim types in food ads appearing in women's magazine, the results of two experiments are not "generalizable" to structure/function and health claim types. Thus, claim-type comparisons should be the focus future research that compares benefit-seeking vs. risk-avoidance attribute-based appeals in association with structure function or health claims.

Regarding the above, future research also needs to investigate the other two types of HNR claims: structure/function claims and health claims. Since this study's two experiments focused on nutrient-content claims only, generalizations about the relationship between health halo effects and consumer unhealthy=tasty intuition and the predictive mechanism of self- and functional-congruity on ad responses is limited. Follow-up research is needed to replicate whether these results would hold up for the other types of HNR claims in association with

benefit-seeking and risk-avoidance attribute-based appeals across different food categories.

Other questions related to HNR claims, attribute-based appeal types, and food product categories also need attention to more fully understand the effects of food advertising on different consumer segments. At the very least, the results of this research contribute to an incremental gain in such understanding, and hopefully will lead to an increase in interest in the research subject of food advertising effects.

References

Advertising Age. (2002), Domestic Advertising Spending by Category, available at http://adage.com/datacenter/datapopup.php?article_id=106667 (accessed December 9, 2010).

Advertising Age. 2005. Domestic Advertising Spending Totals by Category, available at http://adage.com/datacenter/datapopup.php?article_id=106882 (accessed December 9, 2010).

Advertising Age. 2011. Domestic Advertising Spending by Category, available at http://adage.com/datacenter/datapopup.php?article_id=228233 (accessed December 9, 2010).

Ajzen, Icek, and Martin Fishbein (1980). *Understanding Attitudes and Predicting Social Behavior.* Englewood Cliffs, NJ: Prentice-Hall.

Alarcon, Camille (2008), Poor Sales Drive Diet Coke Plus from Supermarkets, *MarketingWeek* (August 7)

Allon, Natalie. (1979). Self-perceptions of the Stigma of Overweight in Relationship to Weight-losing Patterns. *American Journal of Clinical Nutrition, 32. 470-480.*

Alhakami, Ali S. and Paul Slovic (1994), "A Psychological Study of the Inverse Relationship between Perceived Risk and Perceived Benefit," *Risk Analysis*, 14 (6), 1085-1096.

Andrews, Craig J., Richard G. Netemeyer, and Scot Burton (1998). "Consumer Generalization of Nutrient Content Claims in Advertising," *Journal of Marketing,* 62 (October), 62-75.

_____, J. Craig, Scot Burton, and Richard G. Netemeyer (2000). "Are Some Comparative Nutrition Claims Misleading? The Role of Nutrition Knowledge, Ad Claim Type and Disclosure Conditions," *Journal of Advertising,* 29(3), 29-42.

Ardell, D. B. (1977). *High level wellness*. Emmaus, PA: Rodal Press.

Bagozzi, Richard, P. (1996), "The Role of Arousal in the Creation and Control of the Halo Effect in Attitude Models," *Psychology and Marketing,* 13 (3), 235–264.

Balasubramanian, Siva K., and Catherine Cole (2002), "Consumers' Search and Use of Nutrition Information: The Challenge and Promise of the Nutrition Labeling and Education Act," *Journal of Marketing*, 66(3), 112-127.

Batra, Rajeev and Michael L. Ray (1986), "Affective Responses Mediating Acceptance of Advertising," *Journal of Consumer Research*, 13 (September), 234-49.

Bass, Frank M., and W. Wayne Talarzyk (1972), An Attitude Model for the Study of Brand Preference," *Journal of Marketing Research* 9 (1) 93-96.

Bech-Larsen, Tino and Klaus G. Grunert (2003). "The Perceived Healthiness of Functional Foods: A Conjoint Study of Danish, Finnish and American Consumers' Perception of Functional Foods," *Appetite*, 40 *(1)*, 9-14.

Bell, Robert A, Diana Cassady, Jennifer Culp, Rina Alcalay, and Klaus G. Grunert (2009). "Frequency and Types of Foods Advertised on Saturday Morning and Weekday Afternoon English- and Spanish-Language American Television Programs," *Journal of Nutrition Education and Behavior*, 41 *(6)*, 406-413.

Beckwith, Neil E., and Donald R. Lehmann (1975), "The Importance of Halo Effects in Multi-Attribute Attitude Models." *Journal of Marketing Research,* 12(3), 265–275.

Bearden, William O., Donald R. Lichtenstein, and Jesse E. Teel (1984), "Comparison Price, Coupon, and Brand Effects on Consumer Reactions to Retail Newspaper Advertisements," *Journal of Retailing*, 60 (2), 11-36.

Brownell, Kelly D. (2002), "The Environment and Obesity," in *Eating Disorders and Obesity*, Christopher G. Fairburn and Kelly D. Brownell, eds., New York, NY: The Guilford Press, 433-444.

Brown, Steve P. and Douglas M. Stayman (1992), "Antecedents and Consequences of Attitude Toward the Ad: A Meta-Analysis," *Journal of Consumer Research*, 19 (June), 34-51.

Burton, Scot, and Elizabeth H. Creyer (2004), "What Consumers Don't Know Can Hurt Them: Consumer Evaluations and Disease Risk Perceptions of Restaurant Menu Items," *Journal of Consumer Affairs,* 38(1), 121-145.

Centers for Disease Control and Prevention (CDC) (2005a), *CDC Efforts to Reduce or Prevent Obesity.* available at http:==www.cdc.gov=od=media=pressrel=fs050419.htm (accessed December 19, 2011).

Centers for Disease Control and Prevention (CDC) (2005b), *Overweight and Obesity.* available at http:==www.cdc.gov=nccdphp=dnpa=obesity (accessed December 19, 2011).

Centers for Disease Control and Prevention (CDC) (2009), New Obesity Data From the US: Obesity Continues to Increase.

Chandon, Pierre, Brian Wansink and Gilles Laurent (2000). A Benefit Congruency Framework of Sales Promotion Effectiveness. *Journal of Marketing* , 64 *(4)* 65-81.

Chandon, Pierre, and Brian Wansink (2007), "The Biasing Health Halos of Fast-Food Restaurant Health Claims: Lower Calorie Estimates and Higher Side-Dish Consumption Intentions," *Journal of Consumer Research,* 34, 301-314.

Chattopadhyay, Amitava and Kunal Basu (1990), "Humor in Advertising: The Moderating Role of Prior Brand Evaluation," *Journal of Marketing Research*, 27 (November), 466-476.

Chernev, A., and Pierre Chandon (2011), "Calorie Estimation Biases in Consumer Choice," in *Leveraging Consumer Psychology for Effective Health Communications: The Obesity Challenge,* R. Batra, P. A. Keller, and V. J. Strecher, eds., New York: M.E. Sharpe, 104-121.

Choi, Hojoon (2008). *Are Nutrient Content Claims Always Effective for Food Ads? Match-up Effect between Product Type and Nutrient Content Claim through Self- and Functional-congruity* (Master's Thesis). University of Georgia, Athens, GA.

_____, KyungaYoo, Wendy Macias, and Nahray Han (2010). Health and Nutrition- Related (HNR) Claims in Magazine Food Advertising: A Comparison of Benefit-Seeking and Risk-Avoidance Claims. *Paper presented at the annual meeting of the Association for Education in Journalism and Mass Communication, The Denver Sheraton, Denver, CO*, Aug 04, 2010.

_____, Hye JinYoon, Hye-Jin Paek, and Leonard N. Reid. (2012). 'Thinking and feeling'products and 'utilitarian and value-expressive'appeals in contemporary TV advertising: A content analytic test of functional matching and the FCB model. *Journal of Marketing Communications*, *18*(2), 91-111.

_____, Hye-Jin Paek, and Karen W. King (2012), "Are Nutrient-Content Claims Always Effective? Match-up Effects between Product and Claim Type in Food Advertising", *International Journal of Advertising*, 31(2), 421-443.

_____, and Jeffrey K. Springston (in press), "How to Use Health and Nutrition-Related (HNR) Claims Effectively on Food Advertising: Comparison of Benefit-seeking, Risk-avoidance, and Taste Appeals on Different Food Categories." *Journal of Health Communication.*

Chon, Kye-Sung, and Michael D. Olsen (1991). "Functional and Symbolic Congruity Approaches to Consumer Satisfaction/Dissatisfaction in Consumerism." *Journal of the International Academy of Hospitality Research, 28*, 1-20.

Consumer Reports.org (2011) Winners and losers (5 August). Available online at: http://www.consumerreports.org/cro/magazine-archive/2011/august/food/fast-food/winners-andlosers/index.htm. (accessed 12 March 2012)

Delozier, W., & Tillman, R. (1972). "Self-image Concepts – Can They be Used to Design Marketing Programs?" *Southern Journal of Business, 7*(1), 9-15.

Dietary Supplement Health and Education Act of 1994 (DSHEA). 1994. Public Law 103-417, 103rd Congress, 21 USC 301.

Dolich, I. J. (1969). "Congruence Relationships between Self-images and Product Brands." *Journal of Marketing Research, 6*, 80-84.

Drewnowski, Adam, and S. E. Specter (2004), "Poverty and Obesity: The Role of Energy Density and Energy Costs," *American Journal of Clinical Nutrition*, (79) 6–16.

_____, and Nicole Damon (2005), "The Economics of Obesity: Dietary Energy Density and Energy Cost," *American Journal of Clinical Nutrition*, (82) 265S-273S.

Dutta-Bergman, Mohan J. (2004a), "An Alternative Approach to Social Capital: Exploring the Linkage Between Health Consciousness and Community Participation." *Health Communication*, 16 (4), 393-409.

Dutta-Bergman, Mohan J. (2004b), "Reaching Unhealthy Eaters: Applying a Strategic Approach to Media Vehicle Choice." *Health Communication*, 16 (4), 493-506.

Dutta-Bergman, Mohan J. (2005), "Developing a Profile of Consumer Intention to Seek Out Additional Information Beyond a Doctor: The Role of Communicative and Motivation Variables." *Health Communication* 17*(1)*, 1-16.

Ebbeling, Cara B, Dorota B. Pawlak, and David S. Ludwig (2002), "Childhood Obesity: Public-Health Crisis, Common Sense Cure," *The Lancet*, 360 (9331), 473-482.

Eggerton, John (2007), "FCC to Congress: Take Action on Violence," *Broadcasting & Cable*, 137 (18), 10.

Eisend, Martin, & Tobias Langner. (2010). Immediate and Delayed Advertising Effects of Celebrity Endorsers' Attractiveness and Expertise. *International Journal of Advertising*, *29*(4), 527-546.

Elliot, Andrew J. (2008), "Approach and Avoidance Motivation," in *Handbook of Approach and Avoidance Motivation,* Andrew J. Elliot, eds., New York: Psychology Press, 3-14.

Ericksen, M. K. (1996). "Using Self-congruity and Ideal Congruity to Predict Purchase Intention: A European Perspective." *Journal of Euro-Marketing, 6*(1), 41-56.

Fabrigar, Leandre. R., & Petty, Richard. E. (1999). The Role of the Affective and Cognitive Bases of Attitudes in Susceptibility to Affectively and Cognitively Based Persuasion. *Personality and Social Psychology Bulletin, 25*(3), 363-381.

Fishbein, M. (1963). "An Investigation of the Relationships between Beliefs about an Object and the Attitude toward that Object." *Human Relations, 16*, 233-240.

Flegal, Katherine M., Barry I. Graubard, David F. Williamson, and Mitchell H. Gail (2007), "Cause-Specific Excess Deaths Associated With Underweight, Overweight, and Obesity." *Journal of the American Medical Association.* 17, 2028–2037.

_____, Margaret D. Carroll, Cynthia L., Ogden, and Lester R. Curtin (2010), "Prevalence and Trends in Obesity Among US Adults, 1999-2008." *Journal of the American Medical Association, 303*, 235–241.

Food and Drug Administration (FDA) (2001). *Claims That Can Be Made for Conventional Foods and Dietary Supplements.* FDA Center for Food Safety and Applied Nutrition, Office of Nutritional Products, Labeling, and Dietary Supplements (March 20).

Food and Drug Administration Modernization Act of 1997 (FDAMA).1997. Public Law 105-115 (S303, S304).

Food Marketing Institute. 2001. *Trends in the United States: Consumer Attitudes and the Supermarket, 2001,* Washington, DC: Food Marketing Institute.

Friedman, Michael A., and Kelly D. Brownell (1995), "Psychological Correlates of Obesity: Moving to the Next Research Generation." *Psychological Bulletin,* 117(1) 3-20.

FTC Enforcement Policy Statement on Food Advertising (1994). May, Washington, DC: Federal Trade Commission, 1-28.

Gladwell, Malcolm (2001). "The Trouble with Fries: Fast Food Is Killing Us. Can It Be Fixed?" *The New Yorker,* (March 5), (accessed September 12, 2012), [available at http://www. gladwell.com/2001/2001_03_05_a_fries.

Golden, Linda L. and Keren A. Johnson (1984), "The Impact of Sensory Preference and Thinking versus Feeling Appeals on Advertising Effectiveness," in *Advances in Consumer Research, Vol. 10*, Richard P. Bagozzi and Alice M. Tybout, eds., Ann Arbor, MI: Association for Consumer Research, 203-208.

Goodman, Elizabeth, and Robert C. Whitaker (2002). A Prospective Study of the Role of Depression in the Development and Persistence of Adolescent Obesity. *Pediatrics,* 110*(3),* 497-504

Greenwald, Anthony G. and Clark Leavitt (1984), "Audience Involvement in Advertising: Four Levels," *Journal of Consumer Research*, 11 (June), 581-92.

Guthrie, Joanne F., J. J. Fox, L. E. Cleveland, and S. Welsh (1995), "Who Uses Nutrition Labelling and What Effects Does Label Use Have on Diet Quality." *Journal of NutritionEducation,* 17(4) 163-72.

Guthrie, Joanne F., and Joan F. Morton (2000), "Food Sources of Added Sweeteners in the Diets of Americans." *Journal of the American Dietetic Association,* 100(1) 43-51.

Han, J. W. (2005). *The Impact of Self-Concept/Product-Image Congruity And Functional Congruity On Brand Preference: Three Product Categories* (Doctoral dissertation, Florida State University, 2006). Available at http://etd.lib.fsu.edu/theses/available/etd-11132006-153320/unrestricted/MANUSCRIPT.pdf (accessed December 9, 2010).

Harker, Debra, Michael Harker, and Robert Burns. (2007), "Tackling Obesity: Developing a Research Agenda for Advertising Researchers. *Journal of Current Issues and Research in Advertising,"* 29(2): 39–51.

Hattie, J. (1992). *Self-concept*. Hillsdale, NJ: Erlbaum.

Heimbach, J.T. (1987), "Risk Avoidance in Consumer Approaches to Diet and Health." *Clinical Nutrition,* 6 (4), 159-62.

Heller, Ilene R. (2001), "Functional Foods: Regulatory and Marketing Developments." *Food and Drug Law Journal,* 56, 197–225.

Hendry, Leo B., and Pamela Gillies (1978). "Body Type, Body Esteem, School, and Leisure: A Study of Overweight, Average, and Underweight Adolescents." *Journal of Youth and Adolescence,* 7(2), 181-195.

Hickman, B. W., G. E. Gates, and R. P. Dowdy (1993), "Nutrition Claims in Advertising: A Study of Four Women's Magazines." *Journal of Nutrition Education,* 25(September/October): 227–235.

Hippel, William von, and Robert Trivers (2011), "The Evolution and Psychology of Self-Deception." *Behavioral and Brain Sciences*, 34(1) 1-56.

Hoek, J., Gendall, G. (2006), "Advertising and Obesity: A Behavioral Perspective." *Journal of Health Communication, 11 (4),* 409–423.

Ippolito, Pauline M., and Alan D. Mathios (1993), "New Food Labeling Regulations and the Flow of Nutrition Information to Consumers." *Journal of Public Policy & Marketing*, 12(2) 188-205.

Jamal, A., and Goode, M. H. (2001). "Consumer and Brands: A Study of the Impact of Self Image Congruence on Brand Preference and Satisfaction." *Marketing Intelligence & Planning, 19* (7), 482-492.

Jeffery, R. W., and S. A. French (1998), "Epidemic Obesity in the United States: Are Fast Foods and Television Viewing Contributing?" *American Journal of Public Health,* 88(2) 277-280.

Johnson, Michael D. (1984), "Consumer Choice Strategies for Comparing Noncomparable Alternatives." *Journal of Consumer Research*, 11(December), 741-753.

Kim, Sei-Hill, and L. Anne Willis (2007), "Talking about Obesity: News Framing of Who Is Responsible for Causing and Fixing the Problem." *Journal of Health Communication*, 12(4) 359-376.

Johar, J.S., and Sirgy, M. J. (1991), "Value-Expressive versus Utilitarian Advertising Appeals: When and Why to Use Which Appeal." *Journal of Advertising*, 20, (3), 23-34.

Johnson-Down, Louise, Jennifer O'Loughlin, Kristine G. Koski, and Katherine Gray-Donald (1997). High Prevalence of Obesity in Low Income and Multiethnic Schoolchildren: A Diet and Physical Activity Assessment. *The Journal of nutrition*, *127*(12), 2310-2315.

Kahle, L. R., and Homer, P. (1985), "Physical Attractiveness of the Celebrity Endorser: A Social Adaptation Perspective." *Journal of Consumer Research*, 11 (March), 954-961.

Kamins, M. A. (1990), "An Investigation into the "Match-Up" Hypothesis in Celebrity Advertising: When Beauty May be Only Skin Deep." *Journal of Advertising*, 19, (1), 4-13.

Kang, J. H. (1996), *Decision Making Process for the Initiation of Physical Activity: The Moderating Effects of Self-esteem and Action Control on the Relationships among Attitudes, Self-image Congruency, and Intention to Exercise*. Unpublished doctoral dissertation, The University of Michigan, Ann Arbor, Michigan.

_____ (2002). "A Structural Model of Image-based and Utilitarian Decision-making Process for Participant Sport Consumption." *Journal of Sport Management,16,*173-189.

Knowles, Eric S., and Jay A. Linn (2004), "Approach-Avoidance Model of Persuasion: Alpha and Omega Strategies for Change." In *Resistance and Persuasion*, Eric S.Knowles and Jay A. Linn, eds., Mahwah, NJ: Erlbaum, 117-148.

Kotler, Philip, & Armstrong, Gary (2009). *Principles of Marketing* (13th Ed.). NJ: Prentice Hall.

Kozup, John C., Elizabeth H. Creyer, and Scot Burton (2003), "Making Healthful Food Choices: The Influence of Health Claims and Nutrition Information on Consumers' Evaluations of Packaged Food Products and Restaurant Menu Items." *Journal of Marketing,* 67 (April), 19-34.

Kraft, Frederic B., and Phillips W. Goodell (1993). Identifying the Health Conscious Consumer. *Journal of Health Care Marketing,* 18–25.

Lavine, Howard, and Mark Snyder (1996). Cognitive Processing and the Functional Matching Effect in Persuasion: The Mediating Role of Subjective Perceptions of Message Quality. *Journal of Experimental Social Psychology,* 32 (July), 580–604.

Leuthesser, Lance, Chiranjeev S. Kohli, and Katrin R. Harich (1995), "Brand Equity: The Halo Effect Measure." *European Journal of Marketing,* 29(4): 57–66.

Livingstone, Sonia, and Ellen J. Helsper (2006). "Does Advertising Literacy Mediate the Effects of Advertising on Children? A Critical Examination of Two Linked Research Literatures in Relation to Obesity and Food Choice." *Journal of Communication,* 56(3): 560-584.

Lobstein, T., and S. Dibb (2005), "Evidence of a Possible Link Between Obesogenic Food Advertising and Child Overweight." *Obesity reviews* 6 (6), 203–208.

Lohmann, Janet, and Ashima K. Kant (2000), "Comparison of Food Groups and Health Claims Appearing in Food Advertisements in 3 Popular Magazine Categories." *Journal of the American Dietetic Association*, 100(11), 1396-1399.

Lord, John B., Joseph O. Eastlack Jr., and John L. Stanton Jr. (1987), "Health Claims in Food Advertising: Is There a Bandwagon Effect?" *Journal of Advertising Research,* 27(2), 9-15.

Madden, Thomas J., Chris T. Allen, and Jacquelyn L. Twible (1988), "Attitude Toward the Ad: An Assessment of Diverse Measurement Indices Under Different Processing Sets," *Journal of Marketing Research*, 25 (August), 242-52.

MacKenzie, Scott B. and Richard J. Lutz (1989), "An Empirical Examination of the Structural Antecedents of Attitude toward the Ad in an Advertising Pretesting Context," *Journal of Marketing*, 53 (April), 48-65.

Mendelson, Beverley K., Morton J. Mendelson, and Donna R. White (2001). "Body-esteem Scale for Adolescents and Adults." *Journal of Personality Assessment 76(1),* 90-106.

_____, Donna R. White, and Morton J. Mendelson (1996). "Self-esteem and Body Esteem: Effects of Gender, Age, and Weight." *Journal of Applied Developmental Psychology* 17*(3),*

321-346.

_____, Richard J. Lutz, and George E. Belch (1986), "The Role of Attitude Toward the Ad as a Mediator of Advertising Effectiveness: A Test of Competing Explanations," *Journal of Marketing Research*, 23 (May), 130-43.

Malär, Lucia, Harley Krohmer, Wayne D. Hoyer, and Bettina Nyffenegger (2011). "Emotional Brand Attachment and Brand Personality: The Relative Importance of the Actual and the Ideal Self." *Journal of Marketing*, 75 (July), 35 –52

Mathios A. D., and Ippolito P. (1999), "Health Claims in Food Advertising and Labeling." in *America's Eating Habits: Changes & Consequences*. Frazao E, eds. Washington, DC: United States Department of Agriculture, Economic Research Service; 1999:189-212. Agriculture Information Bulletin Number 750.

Martinez, Steve W. (2007), "The U.S. Food Marketing System: Recent Developments, 1997-2006." *United States Department of Agriculture*. http://www.agr.unipi.it/labrural/collaboratori/gianluca-brunori/2007-usa-food-systemchanges.pdf.

Martin, A. (2007). "In Live Bacteria, Food Makers See a Bonanza," *The New York Times* (January 22).

Mayo Clinic staff (2011) *Dietary Fats: Know which Types to Choose*. Available online at: http://www.mayoclinic.com/health/fat/NU00262 (accessed 12 March 20012).

Mazis, Michael B. and May A. Raymond (1997), "Consumer Perceptions of Health Claims in Advertisements and on Food Labels." *Journal of Consumer Affairs,* 31(1), 10-26.

McGuire, William J. (1976). Some Internal Psychological Factors Influencing Consumer Choice. *Journal of Consumer Research, 2(4)*, 302–319.

Miniard, Paul W., and Joel B. Cohen (1983), "Modeling Personal and Normative Influences on Behavior." *Journal of Consumer Research*, 10 (2), 169-180.

Mitchell, Andrew A. and Jerry C. Olson (1981), "Are Product Attribute Beliefs the Only Mediator of Advertising Effects on Brand Attitudes?" *Journal of Marketing Research*, 18 (August), 318-22.

Montague, Mamie C. (2003), "The Physiology of Obesity." *ABNF Journal*, 14, 56–60.

Munson, J. Michael, and W. A. Spivey (1981). "Product and Brand User Stereotypes among Social Classes." *Advances in consumer research, 8(1)*, 696-701.

Myers, James H (1976). "Benefit Structure Analysis: A New Tool for Product Planning." *Journal of Marketing*, 40 *(4)*, 23-32.

Neumark-Sztainer, Dianne, Mary Story, Cheryl Perry, and Mary A. Casey. (1999), "Factors Influencing Food Choices of Adolescents: Findings from Focus-Group Discussions with Adolescents*." Journal of the American Dietetic Association*, 99(8), 929-937.

Nestle, Marion (2007), *Food Politics: How the Food Industry Influences Nutrition and Health (2nd edition)*. Berkeley, CA: University of California Press.

Nestle, M, and Jacobson, M. F. (2000), "Halting the Obesity Epidemic: A Public Health Policy Approach." *Public Health Reports*, 115(1), 12-24.

Nisbett, Richard E., and Lee Ross. (1980). *Human Inference: Strategies and Shortcomings of Social Judgment* (p. 167). Englewood Cliffs, NJ: Prentice-Hall.

Nutrition Labeling and Education Act. 1990. Public Law 101-535, 104 Stat. 2355.

Nutrition Data (2007). *Nutrition Facts, Calories in Food, Labels, Nutritional Information and Analysis,* Retrieved June 30, 2008, from http://www.nutritiondata.com/

Ogden, Cynthia L., Katherine M. Flegal, Margaret D. Carroll, and Clifford L. Johnson. (2002). "Prevalence and Trends in Overweight among US Children and Adolescents, 1999–2000." *Journal of the American Medical Association*, 288, 1728–1732.

Oliver, Richard L., and William O. Bearden (1985). "Disconfirmation Processes and Consumer Evaluations in Product Usage." *Journal of Business Research, 13*(3): 235-246.

Osgood, C. E., and Tannenbaum, P. H. (1955), "The Principles of Congruity in the Prediction of Attitude Change." *Psychological Review*, 62, 42-55.

Park, C. Whan, Bernard J. Jaworski, and Deborah J. MacInnis (1986). "Strategic Brand Concept-Image Management." *The Journal of Marketing*, 50*(4),* 135-145.

Parker, Betty J. (2003), "Food for Health." *Journal of Advertising,* 32(3), 47-55.

Perreault Jr., William D., and Laurence E. Leigh (1989), "Reliability of Nominal Data Based on Qualitative Judgments." *Journal of Marketing Research,* 26(2), 135-148.

Petty, Richard E., and John T. Cacioppo (1986). The Elaboration Likelihood Model of Persuasion. in *Communication and Persuasion* (pp. 1-24). Springer New York.

Petty, Richard E., Joseph R. Priester, and Pablo Brinol (2002). "Mass Media Attitude Change: Implications of the Elaboration Likelihood Model of Persuasion. In J. Bryant & D. Zillmann (eds.), *Media Effects: Advances in Theory and Research*, 2nd ed., (pp. 155-198) Mahwah, NJ:Erlbaum

Pollard, J., S.F Kirk, and J. E. Cade. (2002), "Factors Affecting Food Choice in Relation to Fruit and Vegetable Intake: A Review." *Nutrition Research Reviews*, 15, 373-387.

Powell, Lisa. M., Glen Szczypka, Frank J. Chaloupka and Carol L. Braunschweig (2007). Nutritional Content of Television Food Advertisements seen by Children and Adolescents in the United States. *Pediatrics*, *120*(3), 576-583.

Preacher, Kristopher J., and Andrew F. Hayes. (2004), "SPSS and SAS Procedures for Estimating Indirect Effects in Simple Mediation Models." *Behavior Research Methods*, *36*(4),

717-731.

_____ and _____ (2008). "Asymptotic and Resampling Strategies for Assessing and Comparing Indirect Effects in Multiple Mediator Models. *Behavior research methods*, *40*(3), 879-891.

Rogers, Carl R. (1961), *On Becoming a Person: A Therapist's View of Psychotherapy*. Boston: Houghton Mifflin.

Raghunathan, Rajagopal, Rebecca W. Naylor, and Wayne D. Hoyer, (2006). "The Unhealthy = Tasty Intuition and Its Effects on Taste Inferences, Enjoyment, and Choice of Food Products." *Journal of Marketing,* 70(4), 170-184.

Ratchford, Brian.T. (1987). New Insights about the FCB Grid. *Journal of Advertising Research,* 27 *(4)* 24–38.

Roe, Brian, Alan S. Levy, and Brenda M. Derby (1999), "The Impact of Health Claims on Consumer Search and Product Evaluation Outcomes: Results from FDA Experimental Data." *Journal of Public Policy &Marketing*, 18(1), 89-105.

Rossiter, John R. and Larry Percy (1978), "Visual Imagery Ability as a Mediator of Advertising Response," in *Advances in Consumer Research*, Vol. 5, H. Keith Hunt, ed. Ann Arbor, MI: Association for Consumer Research, 52-56.

Rosenberg, Milton. J. (1956). Cognitive Structure and Attitudinal Affect. *Journal of Abnormal and Social Psychology, 53*, 367-372.

_____ and _____ (1983), "Visual Communication in Advertising," in *Information Processing Research in Advertising*, Richard J. Harris, ed. Hillsdale, NJ: Lawrence Erlbaum Associates, 83-125.

Rust, Roland T., and Bruce Cooil. (1994). "Reliability Measures for Qualitative Data: Theory and Implications." *Journal of Marketing Research*, 31(1), 1-14.

Shavitt, Sharon. (1990). "The Role of Attitude Objects in Attitude Functions." *Journal of Experimental Social Psychology*, 26 (March), 124-148.

_____ (1992). "Evidence for Predicting the Effectiveness of Value-Expressive versus Utilitarian Appeals: A Reply to Johar and Sirgy." *Journal of Advertising,* (1992), 47-51.

_____, and Michelle R. Nelson (2002). "The Role of Attitude Functions in Persuasion and Social Judgment" in *The Persuasion Handbook: Developments in Theory and Practice*, James Price Dillard and Michale Pfau, eds., Thousand Oaks, CA: Sage, 137-53.

Shimp, Terence A. (2000). *Advertising and Promotion: Supplemental Aspects of Integrated Marketing Communications*. Fort Worth,TX: Dryden.

_____, and Alican Kavas (1984). "The Theory of Reasoned Action Applied to Coupon Usage." *Journal of Consumer Research*, 11 (3), 795-809.

Shiv, Baba, and Alexander Fedorikhin. (1999). Heart and Mind in Conflict: The Interplay of Affect and Cognition in Consumer Decision Making. *Journal of Consumer research*, *26*(3), 278-292.

Sirgy, Joseph. M. (1982). "Self-concept in Consumer Behavior: A Critical Review." *Journal of Consumer Research, 9*, 287-300.

_____ (1985). "Using Self-congruity and Ideal Congruity to Predict Purchase Motivation." *Journal of Business Research, 13*, 195-206.

_____, and Samli, A. C. (1991). "A Path Analytic Model of Store Loyalty involving self-concept, Store Image, Geographic Loyalty, and Socioeconomic Status." *Journal of Academy of Marketing Science, 13* (3), 265-291.

_____, Johar, J. S., Samli, A. C., & Claiborne, C. B. (1991). "Self-Congruity Versus Functional Congruity: Predictors of Consumer Behavior." *Journal of the Academy of Marketing Science*, *19*, 363-375.

_____, Grewal, D., Mangleburg, T. F., Park, J., Chon, K., Claiborne, C. B., Johar, J. S., & Berkman, H. (1997). "Assessing the Predictive Validity of Two Methods of Measuring Self-Image Congruence." *Journal of the Academy of Marketing Science*, *25*, 229-241.

Skelton, Joseph. A., Stephen R. Cook, Peggy Auinger, Jonathan D. Klein, and Sarah E. Barlow (2009). Prevalence and Trends of Severe Obesity among US children and Adolescents. *Academic pediatrics*, *9*(5), 322-329.

Snyder, Mark L. 1979. "Self-Monitoring Processes." in *Advances in Experimental Social Psychology*, Vol. 12, 86-128. Ed. Leon Berkowitz. New York, Ny: Academic Press.

_____, and DeBono, K. G. (1985). "Appeals to Image and Claims about Quality: Understanding the Psychology of Advertising." *Journal of Personality and Social Psychology,* 49 (3), 586-597.

_____, and _____(1987). "Understanding the Functions of Attitudes: Lessons from Personality and Social Behavior" in *Attitude Structure and Function*, Anthony R. Pratkanis, Steven J. Breckler, and Anthony G. Greenwald, eds., Hillsdale, NJ: Erlbaum, 339-359.

Stayman, Douglas M. and David A. Aaker (1988), "Are All the Effects of Ad-Induced Feelings Mediated by Aad?" *Journal of Consumer Research*, 15 (December), 368-373.

Steptoe, Andrew, Tessa M. Pollard, and Jane Wardle (1995), "Development of a Measure of the Motives Underlying the Selection of Food: the Food Choice Questionnaire." *Appetite,*, 25, 267-284.

Till, Brian. D., and Michael Busler (1990). "The Match-Up Hypothesis: Physical Attractiveness, Expertise, and the Role of Fit on Brand Attitude, Purchase Intent and Brand Beliefs." *Journal of Advertising*, 29, (3), 1-13.

Teisl, Mario F., Alan S. Levy, and Brenda M. Derby (1999). "The Effects of Education and

Information Source on Consumer Awareness of Diet-Disease Relationships." *Journal of Public Policy & Marketing*, 18(2), 197-207.

Thorndike, E.L. (1920), "A Constant Error in Psychological Ratings." *Journal of Applied Psychology*, 4(1): 25-29.

Urala, Nina, and Liisa Lahteenmaki. (2003), "Reasons Behind Consumers' Functional Food Choices." *Nutrition and Food Science*, 33(3), 148-158.

Van Kleef, Ellen, Hans van Trijp, and Pieternel Luning (2005). Functional Foods: Health Claim-Food Product Compatibility and the Impact of Health Claim Framing on Consumer Evaluation, *Appetite*, *44*(3), 299-308.

Vakratsas, Demetrios and Tim Ambler (1999), "How Advertsing Works: What Do We Really Know?" *Journal of Marketing*, Vol. 63, No. 1, pp. 26-43.

Verbeke, Wim (2006) "Functional foods: Consumer willingness to compromise on taste for health?" *Food Quality and Preference*, 17, 126-131.

Wansink, Brian and Pierre Chandon (2006), "Can Low-Fat Nutrition Labels Lead to Obesity?" *Journal of Marketing Research,* 43(4), 605-617.

Wimmer, Roger D., and Joseph R. Dominick (2006), *Mass Media Research: An Introduction, Eighth Edition*, Belmont, CA: Thompson Wadsworth.

World Health Organization (WHO) (2013), *BMI Classification,* Retrieved March 30, 2013, from http://apps.who.int/bmi/index.jsp?introPage=intro_3.html

Yoon, Hye-Jin.,Hye-JinPaek, HoyoungAhn,and Hojoon Choi (2010), "Are Food Ads Healthy? Examination of Television Food Advertising on Claims and Persuasion Strategies." *Health Communication Research*.1(1), 65-91.

Zanoli, R., and Naspetti, Liisa (2003), "Consumer motivations in the purchase of organic food. A means-end approach." *British Food Journal*, 8(8): 645-653.

Zhao, Xinshu, John G. Lynch, and Qimei Chen (2010). "Reconsidering Baron and Kenny: Myths and Truths about Mediation Analysis." *Journal of Consumer Research*, *37*(2), 197-206.

Zinkhan, G. M.,and J. W. Hong (1991). "Self-concept and Advertising Effectiveness: A Conceptual Model of Congruency, Conspicuousness, and Response Mode" in *Advances in Consumer Research*, Eds. R. H. Holman and M. R. Solomon, 18:348-354. Prove: UT: Association for Consumer Research.

Table 2-1: Classification of HNR Claims

	Classification	Definition	Example	Referenced Law
HNR Claims	Nutrient content claim	A claim that has absolute and comparative terms to communicate the level of a particular nutrient found in foods	"Fat free" "Calcium added" "Nutritious"	Nutrition Labeling and Education Act (NLEA) of 1990
	Health claim	A claim emphasizing that a particular food will protect the consumer from diseases	"Reduce the risk of heart disease"	
	Structure/function claim	A claim explaining that a food product affects the structure or function of the body without mentioning a specific disease	"Calcium builds strong bones"	Dietary Supplement Health and Education Act (DSHEA) of 1994

Sources: Parker, 2003; Choi, 2008, p. 16

Table 2-2: Determinants of Attitude Formation, Arousal, and Change in Relation to Type of Function from Katz's Functional Attitude Theory

Psychological Functions	Origin and Dynamics	Arousal Conditions	Change Conditions
Ego-defensive	Protecting against internal conflicts and external dangers	1. Posing of threats 2. Appeals to hatred and repressed impulses 3. Rise in frustration 4. Use of authoritarian suggestion	1. Removal of threats 2. Catharsis 3. Development of self-insight
Knowledge	Need for understanding, for meaningful cognitive organization, for consistency and clarity	1. Reinstatement of cues associated with old problem or of old problem itself	1. Ambiguity created by new information or change in environment 2. More meaningful information about problems
Utilitarian (adjustment)	Utility of attitudinal object in need satisfaction. Maximizing external rewards and minimizing punishments	1. Activation of needs 2. Salience of cues associated with need satisfaction	1. Need deprivation 2. Creation of new needs and new levels of aspiration 3. Shifting rewards and punishments 4. Emphasis on new and better paths for need satisfaction
Value-expressive	Maintaining self identity; enhancing favorable self-image; self-expression and self-determination	1. Salience of cues associated with values 2. Appeals to individual to reassert self-image 3. Ambiguities that threaten self-concept	1. Some degree of dissatisfaction with self 2. Greater appropriateness of new attitude for the self 3. Control of all environmental supports to undermine old values

Source: Katz, 1960, p. 192

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Table 2-3: Different Terms for the Value-expressive and Utilitarian Function Attitude

Researchers	Value-Expressive Function	Utilitarian Function
Snyder and DeBono (1985, 1987)	Image appeal	Quality appeal
Shavitt (1989, 1990)	Social-identity function	Utilitarian function
Sirgy, et al. (1991)	Self-congruity	Functional-congruity

Source: Choi 2008, p. 29

Table 2-4: Development of Self-congruity Measurement

Traditional Method	New Method
Product-user image (5-point semantic differential scales): "Do you believe the typical person who wears Reebok tennis shoes in casual situations is: [active/not active, health oriented/not health oriented, comfort oriented/not comfort oriented, style oriented/not style oriented, athletic/not athletic, young/old, casual/formal, easygoing/not easygoing]?" **Self-image (5-point semantic differential scales):** "Please indicate how you see yourself in casual situations using the adjectives below. I see myself as: [same image dimensions used to measure product-user image]."	**Self-image congruence (5-point likert scale);** "Wearing Reebok shoes in casual situations is consistent with how I see myself." "Wearing Reebok shoes in casual situations reflects who I am." "People similar to me wear Reebok shoes in casual situations."

Source: Sirgy et al., 1997, p. 235

Table 4-1: Coding Scheme and Operational Definitions

HNR Attributes
a. Benefit-seeking HNR attributes
(e.g., fortified vitamins, enhanced protein, calcium builds strong bones) (.97)
1. No
2. Fiber
3. Protein
4. Vitamins
5. Other benefit-seeking attributes (specify:_____)

b. Risk-avoidance HNR attributes
(e.g., low calories, reduced fat content, reduced risk of high blood pressure) (.99)
1. No
2. Reduced fat
3. Reduced sugar
4. Reduced calories
5. Other risk-avoidance attributes (specify:_____)

Table 4-2: Descriptive Statistics of Benefit-seeking vs. Risk avoidance attributes

Type of HNR attributes	N (%)
Benefit-seeking attributes	**245 (36.0%)**
Fiber	103 (15.1%)
Protein	67 (9.8%)
Vitamins	40 (5.9%)
Other benefit-seeking attributes (e.g.: Omega 3, Glucosamine)	35 (5.1%)
Risk-avoidance attributes	**436 (64.0%)**
Reduced fat	189 (27.8%)
Reduced calories	174 (25.6%)
Reduced sugar	43 (6.3%)
Other risk-avoidance attributes (e.g.: reduced carbohydrate, cholesterol)	30 (4.4%)
Total	**681 (100%)**

Table 4-3: The Mean Values of Each Food's Perceived Health and Taste

Food Categories	Perceived Healthiness			Perceived Taste			T-test	P-value
	Mean	Std. deviation	Inter-item correlation	Mean	Std. deviation	Inter-item correlation		
Multigrain Grain Cereal	6.33	0.52	0.98	3.63	1.43	0.94	7.99	0.00
Plain Yogurt	6.09	0.93	0.94	3.67	1.92	0.95	7.52	0.00
Whole Wheat Bread	6.07	1.05	0.98	5.38	1.47	0.94	2.53	0.02
Dried Fruits	5.83	1.15	0.98	5.32	1.47	0.95	2.07	0.05
Grilled Chicken	5.71	1.26	0.96	5.71	1.40	0.98	0.00	1.00
Multigrain Granola Bar	5.63	1.03	0.95	5.27	1.32	0.94	1.54	0.13
Whole Wheat Bagel	5.16	1.37	0.97	4.73	1.36	0.93	1.36	0.18
A Whole Milk	4.12	1.73	0.83	4.41	1.77	0.95	-0.89	0.38
Chocolate Chipped Bagel	2.51	1.37	0.93	4.94	1.95	1.00	-7.08	0.00
Ranch Dressing	2.37	1.34	0.96	5.13	1.76	0.97	-8.78	0.00
Chocolate Ice Cream	2.01	1.13	0.99	6.13	1.43	1.00	-16.07	0.00
Pepperoni Pizza	1.80	0.84	0.85	5.68	1.59	0.95	-15.45	0.00
Fried Chicken	1.79	0.94	0.75	5.76	1.42	0.95	-15.43	0.00
Chocolate Chipped Cookie	1.78	1.03	0.98	6.32	1.02	0.90	-18.45	0.00
French Fries	1.55	0.86	0.84	6.02	1.11	0.79	-16.83	0.00
Donut	1.22	0.65	1.00	6.27	1.39	0.97	-22.67	0.00

Table 4-4: The Mean Values of Each Food's Perceived Healthy Benefit and Unhealthy Risk

Food Categories	Perceived Benefit		Perceived Risk		T-test	P-value
	Mean	Std. deviation	Mean	Std. deviation		
Plain Yogurt	5.93	1.15	1.98	1.19	11.61	0.00
Whole Wheat Bread	5.78	1.26	1.95	1.28	10.71	0.00
Dried Fruits	5.73	1.07	2.22	0.96	11.68	0.00
Multigrain Grain Cereal	5.37	1.00	2.37	1.04	9.60	0.00
Multigrain Granola Bar	5.37	1.04	2.37	1.04	9.61	0.00
Grilled Chicken	5.00	1.69	2.46	1.43	6.55	0.00
Whole Wheat Bagel	4.88	1.25	2.93	1.35	5.31	0.00
A Whole Milk	4.54	1.58	3.88	1.52	1.61	0.12
Ranch Dressing	2.80	1.40	4.83	1.46	-5.08	0.00
Chocolate Chipped Bagel	2.71	1.33	4.71	1.25	-5.44	0.00
Chocolate Ice Cream	2.51	1.14	4.61	1.45	-6.48	0.00
Chocolate Chipped Cookie	2.41	1.30	4.90	1.58	-6.39	0.00
Pepperoni Pizza	2.24	1.11	5.12	1.32	-8.78	0.00
Fried Chicken	1.98	1.06	5.73	1.36	-12.28	0.00
French Fries	1.78	1.04	5.59	1.61	-11.17	0.00
Donut	1.24	0.49	6.46	1.05	-25.82	0.00

Table 4-5: Mean Values of Consumers' Motivations for Food Choice

Factors	Mean	Std.	Cronbach-A
Sensory Appeal	5.57	0.87	0.70
Health	5.35	1.15	0.91
Weight Control	5.20	1.47	0.92
Convenience	5.18	1.33	0.88
Price	4.99	1.20	0.75
Natural Content	4.79	1.72	0.96
Familiarity	4.28	1.41	0.79
Mood	4.04	1.42	0.90
Ethical Concern	3.10	1.73	0.85

Table 4-6: Claim Combinations and Sequences for Pretest 2

Set	1st ad	2nd ad	3rd ad	4th ad
1	Yogurt ad with calcium (YogCal)	Cereal ad with taste (CerT)	Cookie ad with vitamins (CookV)	Pizza ad with taste (PizT)
2	Yogurt ad with taste (YogT)	Cereal ad with protein (CerP)	Cookie ad with taste (CookT)	Pizza ad with calcium (PizCa)

Set	5th ad	6th ad	7th ad	8th ad
1	Yogurt ad with fiber (YogFib)	Cereal ad with vitamins (CerV)	Cookie ad with less sugar (CookS)	Pizza ad with less cholesterol (PizChol)
2	Yogurt ad with less fat (YogFat)	Cereal ad with less sugar (CerS)	Cookie ad with protein (CookP)	Pizza ad with less fat (PizFat)

Set	9th ad	10th ad
1	Yogurt ad with less cholesterol (YogChol)	Cookie ad with less calories (CookCal)
2	Cereal ad with less calories (CerCal)	Pizza ad with Fiber (PizFib)

Table 4-7: Manipulation Check in Pretest 2 – Plain Yogurt vs. Pepperoni Pizza

Products	Attributes	N	Fiber content	Calcium content	Fat content	Cholesterol content
Plain Yogurt	Taste	38	3.84 (1.15)	4.24 (1.03)	3.89 (1.31)	3.63 (1.13)
	More fiber	34	5.29 (1.12)			
	More calcium	34		5.94 (0.89)		
	Low fat	38			2.66 (1.12)	
	Low cholesterol	34				2.65 (0.77)
	t-value		5.42 ($p < .001$)	7.51 ($p < .001$)	-4.42 ($p < .001$)	-4.28 ($p < .001$)
Pepperoni Pizza	Taste	34	3.71 (0.71)	3.71 (0.72)	4.09 (0.57)	3.79 (0.85)
	More fiber	38	5.16 (0.44)			
	More calcium	38		5.76 (0.91)		
	Low fat	38			2.66 (0.91)	
	Low cholesterol	34				2.59 (0.86)
	t-value		5.06 ($p < .001$)	10.67 ($p < .001$)	-8.09 ($p < .001$)	-5.84 ($p < .001$)

Table 4-8: Manipulation Check in Pretest 2 – Multigrain Cereal vs. Chocolate Chip Cookie

Products	Attributes	N	Protein content	Vitamin content	Sugar content	Calories
Multigrain Cereal	Taste	34	4.47 (1.13)	4.47 (1.02)	3.71 (0.97)	3.53 (0.99)
	More protein	34	5.74 (1.01)			
	More vitamins	38		5.68 (1.01)		
	Low sugar	38			2.76 (1.12)	
	Low calories	38				2.68 (0.90)
	t-value		4.90 ($p < .001$)	5.02 ($p < .001$)	3.65 ($p < .001$)	3.69 ($p < .001$)
Chocolate Chip Cookie	Taste	38	3.42 (1.06)	3.34 (1.07)	4.63 (1.10)	4.58 (1.13)
	More protein	38	5.11 (1.35)			
	More vitamins	34		5.56 (1.08)		
	Low sugar	34			2.59 (0.93)	
	Low calories	34				2.65 (0.88)
	t-value		6.05 ($p < .001$)	8.73 ($p < .001$)	-8.47 ($p < .001$)	-8.01 ($p < .001$)

Table 4-9: Manipulation check in Pretest 2 – Mean Difference between Experimental Groups

		N	Perceived Benefit	Perceived Risk	Perceived Healthiness	Perceived Taste
Healthy product	Benefit seeking attributes	140	5.14 (0.93)	3.39 (1.01)	5.51 (0.85)	4.01 (0.99)
	Risk-avoidance attributes	148	4.70 (0.82)	3.44 (0.79)	5.14 (0.88)	3.93 (1.00)
	Taste attributes	72	4.43 (0.96)	3.60 (0.91)	4.99 (1.22)	4.33 (1.52)
Unhealthy product	Benefit seeking attributes	148	4.59 (0.75)	3.64 (0.68)	3.74 (1.26)	4.64 (1.33)
	Risk-avoidance attributes	140	4.51 (0.68)	3.49 (0.69)	3.84 (1.10)	4.30 (1.16)
	Taste attributes	72	3.69 (0.85)	4.11 (0.70)	2.32 (1.05)	4.95 (1.52)

Table 4-10: Main Experimental Design

	Healthy Product	**Unhealthy Product**
Taste Attribute	- Plain Yogurt Ad with Better Taste - Multi Grain Cereal Ad with Better Taste	- Pepperoni Pizza Ad with Better Taste - Chocolate Chip Cookie with Better Taste
Benefit-seeking Attributes	- Plain Yogurt Ad with More Calcium - Plain Yogurt Ad with More Protein - Multi Grain Cereal Ad with More Vitamins - Multi Grain Granola Bar Ad with More Fiber	- Pepperoni Pizza Ad with More Calcium - Pepperoni Pizza Ad with More Protein - Chocolate Chip Cookie with More Vitamins - Chocolate Chip Cookie with More Fiber
Risk-avoidance Attributes	- Plain Yogurt Ad with Less Cholesterol - Plain Yogurt Ad with Less Fat - Multi Grain Cereal Ad with Less Sugar - Multi Grain Cereal Ad with Less Calories	- Pepperoni Pizza Ad with Less Cholesterol - Pepperoni Pizza Ad with Less Fat - Chocolate Chip Cookie with Less Sugar - Chocolate Chip Cookie with Less Calories

Table 4-11: Attribute Combinations and Sequences for Main Experiment

Set	**Ad 1**	**Ad 2**	**Ad 3**	**Ad 4**
1	Yogurt ad with better taste (YogT)	Cookie ad with better taste (CookT)	Cereal ad with better taste (CerT)	Pizza ad with better taste (PizT)
2	Pizza ad with more fiber (PizF)	Yogurt ad with more calcium (YogC)	Cookie ad with more vitamins (CookV)	Cereal ad with more protein (CerP)
3	Yogurt ad with more fiber (YogF)	Cookie ad with more protein (CookP)	Cereal ad with more vitamins (CerV)	Pizza ad with more calcium (PizC)
4	Cookie ad with less sugar (CookS)	Cereal ad with less calorie (CerCal)	Pizza ad with less cholesterol (PizChol)	Yogurt ad with less fat (YogFat)
5	Cereal ad with less sugar (CerS)	Pizza ad with less fat (PizFat)	Yogurt ad with less cholesterol (YogChol)	Cookie ad with less calorie (CookCal)

Notes:

- 5 survey sets as 1 taste + 2 benefit-seeking + 2 risk-avoidance attribute-based appeals.

- Order is fixed, but the starting point is randomized in on-line survey.

Table 4-12: Examples of Question Items measuring Actual- and Ideal- Self-congruity

Type of Self-congruity	Modified Items
Actual Self-Congruity	Eating the low-fat yogurt advertised is consistent with how I see myself.
	The kind of person who typically eats the low-fat yogurt advertised is very much like me.
	Eating the low-fat yogurt advertised reflects who I am.
	My actual self-image is consistent with overall image of people who eat the low-fat yogurt advertised.
Ideal Self-Congruity	Eating the low-fat yogurt advertised is consistent with I would like to be.
	The kind of person who typically eats the low-fat yogurt advertised is like how I would like to be.
	Eating low-fat yogurt advertised reflects who I would like to be.
	My ideal self-image is consistent with overall image of people who eat the low-fat yogurt advertised.

Table 4-13: 2011 HHS Poverty Guidelines

(Dollars)

Persons in Family	Annual Income	Alaska	Hawaii
1	$10,890	$13,600	$12,540
2	14,710	18,380	16,930
3	18,530	23,160	21,320
4	22,350	27,940	25,710
5	26,170	32,720	30,100
6	29,990	37,500	34,490
7	33,810	42,280	38,880
8	37,630	47,060	43,270
For each additional person, add	3,820	4,780	4,390

Source: *Federal Register*, Vol. 76, No. 13, January 20, 2011, pp. 3637-3638

Table 5-1: Manipulation Check in Experiment 1 – Plain Yogurt vs. Pepperoni Pizza

Products	Attributes	N	Fiber content	Calcium content	Fat content	Cholesterol content
Plain Yogurt	Taste	104	4.18 (0.72)	4.17 (0.77)	3.88 (0.96)	3.95 (0.81)
	More fiber	120	5.66 (1.14)			
	More calcium	105		5.62 (1.09)		
	Low fat	126			2.86 (1.11)	
	Low cholesterol	126				2.81 (1.12)
	t-value		11.72 ($p < .001$)	11.11 ($p < .001$)	7.44 ($p < .001$)	8.97 ($p < .001$)
Pepperoni Pizza	Taste	89	3.89 (0.65)	3.71 (0.72)	4.39 (0.90)	4.30 (0.87)
	More fiber	89	5.54 (1.24)			
	More calcium	114		5.27 (1.14)		
	Low fat	118			3.03 (1.13)	
	Low cholesterol	117				2.92 (1.15)
	t-value		11.11 ($p < .001$)	10.67 ($p < .001$)	-9.40 ($p < .001$)	-9.82 ($p < .001$)

Table 5-2: Manipulation Check in Experiment 1 – Multigrain Cereal vs. Chocolate Chip Cookie

Products	Attributes	N	Protein content	Vitamin content	Sugar content	Calories
Multigrain Cereal	Taste	97	4.42 (0.96)	4.44 (1.01)	3.66 (0.84)	3.79 (0.79)
	More protein	100	5.38 (1.27)			
	More vitamins	116		5.43 (1.04)		
	Low sugar	117			2.54 (1.29)	
	Low calories	121				3.01 (1.07)
	t-value		5.99 ($p < .001$)	6.99 ($p < .001$)	7.65 ($p < .001$)	6.24 ($p < .001$)
Chocolate Chip Cookie	Taste	87	3.82 (0.88)	3.79 (0.84)	4.41 (0.95)	4.49 (0.96)
	More protein	114	5.59 (1.20)			
	More vitamins	97		5.42 (1.27)		
	Low sugar	120			2.63 (1.37)	
	Low calories	119				2.60 (0.94)
	t-value		12.08 ($p < .001$)	10.40 ($p < .001$)	-11.05 ($p < .001$)	-14.15 ($p < .001$)

Table 5-3: Manipulation Check in Experiment 1- Health Halos and Unhealthy=Tasty Intuition

		N	Perceived Benefit	Perceived Risk	Perceived Healthiness	Perceived Taste
Healthy product	Benefit seeking attributes	441	4.99 (1.04)	3.43 (1.04)	5.50 (1.14)	3.83 (1.48)
	Risk-avoidance attributes	490	4.80 (0.98)	3.47 (0.99)	5.42 (1.14)	3.58 (1.51)
	Taste attributes	201	4.31 (0.90)	3.75 (0.76)	5.22 (1.16)	4.09 (1.49)
Unhealthy product	Benefit seeking attributes	414	4.69 (0.96)	3.63 (0.92)	3.87 (1.45)	4.29 (1.50)
	Risk-avoidance attributes	474	4.51 (0.95)	3.64 (0.86)	3.89 (1.36)	3.93 (1.59)
	Taste attributes	176	3.87 (0.76)	4.06 (0.71)	3.03 (1.43)	5.09 (1.30)

Table 5-4: Univariate F-values of Experiment 1 on Perceived Benefit, Risk, Healthiness, and Taste

Factors	Perceived Benefit	Perceived Risk	Perceived Healthiness	Perceived Taste
Main Effects:				
Product Type (A)	59.94^{***}	23.62^{***}	900.70^{***}	74.96^{***}
Attribute Type (B)	79.83^{***}	24.24^{***}	28.19^{***}	42.68^{***}
Interaction Effects:				
A by B	.92	.81	9.46^{***}	6.32^{***}

Note:
Univariate d.f. = 1/2190, $^{\#}p<.10$, $*p<.05$, $**p<.01$, $***p<.001$

Table 5-5: Mean Differences of Ad Responses between Healthy and Unhealthy Food Ads (Experiment 1)

		N	Claim Believability	Attitude toward Ad	Attitude toward Product	Attitude toward Brand	Purchase Intension
Healthy product	Benefit seeking attributes	415	4.97 (1.12)	4.34 (1.16)	4.54 (1.13)	4.42 (1.18)	3.77 (1.44)
	Risk-avoidance attributes	466	4.99 (1.08)	4.33 (1.15)	4.43 (1.15)	4.36 (1.16)	3.62 (1.50)
	Taste attributes	192	4.65 (1.30)	4.13 (1.17)	4.32 (1.14)	4.17 (1.20)	3.45 (1.43)
Unhealthy product	Benefit seeking attributes	390	4.33 (1.24)	4.06 (1.16)	4.21 (1.14)	4.10 (1.14)	3.31 (1.32)
	Risk-avoidance attributes	454	4.35 (1.24)	4.15 (1.17)	4.18 (1.24)	4.05 (1.15)	3.36 (1.53)
	Taste attributes	166	4.47 (1.15)	4.31 (1.14)	4.46 (1.12)	4.15 (1.20)	3.63 (1.43)

Table 5-6: Univariate F-values of Experiment 1: Ad Responses

Factors	Claim Believability	Attitude toward Ad	Attitude toward Product	Attitude toward Brand	Purchase Intension
Covariates:					
Diet	.38	.48	$2.90^{\#}$	$2.81^{\#}$	5.68^{*}
BMI	2.59	1.21	1.05	6.65^{*}	4.23^{*}
BE-Appearance	.43	.28	.01	.12	.80
BE-Attribution	4.49*	.07	1.05	1.09	$3.33^{\#}$
BE-Weight	1.07	.71	$3.78^{\#}$	$2.82^{\#}$	$3.54^{\#}$
Health Consciousness	.19	22.42^{***}	29.77^{***}	17.19^{***}	53.14^{***}
Main Effects:					
Product Type (A)	72.95^{***}	$2.82^{\#}$	6.93^{**}	14.99^{***}	6.96^{**}
Attribute Type (B)	.97	.54	.38	1.37	.05
Interaction Effects:					
A by B	5.61^{**}	5.24^{**}	5.46^{**}	$2.58^{\#}$	6.35^{**}

Note:
Univariate d.f. = 1/2071, $^{\#}p<.10$, *p<.05, **p<.01, ***p<.001

Table 5-7: Manipulation Check in Experiment 2 – Plain Yogurt vs. Pepperoni Pizza

Products	Attributes	N	Fiber content	Calcium content	Fat content	Cholesterol content
Plain Yogurt	Taste	55	4.07 (0.33)	4.04 (0.54)	4.07 (0.26)	4.07 (0.33)
	More fiber	54	5.15 (1.30)			
	More calcium	42		5.50 (1.15)		
	Low fat	70			3.16 (1.42)	
	Low cholesterol	61				3.39 (1.53)
	t-value		5.92 ($p < .001$)	7.61 ($p < .001$)	-5.28 ($p < .001$)	-3.38 ($p < .01$)
Pepperoni Pizza	Taste	51	4.18 (0.68)	4.16 (0.54)	4.25 (0.60)	4.20 (0.60)
	More fiber	42	5.05 (1.01)			
	More calcium	43		5.30 (1.12)		
	Low fat	51			3.52 (1.13)	
	Low cholesterol	49				3.12 (1.25)
	t-value		4.76 ($p < .001$)	6.44 ($p < .001$)	-4.34 ($p < .001$)	-5.43 ($p < .001$)

Table 5-8: Manipulation Check in Experiment 2 – Multigrain Cereal vs. Chocolate Chip Cookie

Products	Attributes	N	Protein content	Vitamin content	Sugar content	Calories
Multigrain Cereal	Taste	54	4.13 (0.55)	4.15 (0.53)	4.06 (0.60)	4.09 (0.59)
	More protein	49	5.37 (1.07)			
	More vitamins	52		4.81 (0.95)		
	Low sugar	58			2.93 (1.31)	
	Low calories	74				3.53 (1.19)
	t-value		7.25 ($p < .001$)	4.39 ($p < .001$)	-5.92 ($p < .001$)	-3.55 ($p < .01$)
Chocolate Chip Cookie	Taste	56	3.96 (0.38)	4.00 (0.47)	4.16 (0.50)	4.16 (0.57)
	More protein	56	5.23 (1.50)			
	More vitamins	56		4.77 (1.11)		
	Low sugar	57			2.91 (1.31)	
	Low calories	67				3.64 (1.36)
	t-value		6.13 ($p < .001$)	4.77 ($p < .001$)	-6.71 ($p < .001$)	-2.85 ($p < .01$)

Table 5-9: Manipulation Check in Experiment 2- Health Halos and Unhealthy=Tasty Intuition

		N	Perceived Benefit	Perceived Risk	Perceived Healthiness	Perceived Taste
Healthy product	Benefit seeking attributes	197	4.93 (1.03)	3.88 (0.80)	4.84. (1.34)	4.17 (1.20)
	Risk-avoidance attributes	263	4.88 (1.13)	3.82 (1.15)	4.82 (1.43)	4.17 (1.56)
	Taste attributes	109	4.21 (0.67)	3.99 (0.55)	4.47 (1.09)	4.37 (0.88)
Unhealthy product	Benefit seeking attributes	197	4.62 (1.06)	3.83 (0.79)	3.97 (1.36)	4.28 (1.55)
	Risk-avoidance attributes	231	4.61 (1.15)	3.75 (1.05)	4.09 (1.40)	4.26 (1.49)
	Taste attributes	107	4.16 (0.52)	4.10 (0.53)	3.57 (0.96)	4.69 (1.29)

Table 5-10: Univariate F-values of Experiment 2 on Perceived Benefit, Risk, Healthiness, and Taste

Factors	Perceived Benefit	Perceived Risk	Perceived Healthiness	Perceived Taste
Main Effects:				
Product Type (A)	10.33^{**}	.00	96.11^{***}	$3.69^{\#}$
Attribute Type (B)	27.47^{***}	6.13^{**}	8.58^{***}	4.21^{*}
Interaction Effects:				
A by B	1.17	.78	.46	.59

Note:
Univariate d.f. = 1/1098, $^{\#}p<.10$, $^{*}p<.05$, $^{**}p<.01$, $^{***}p<.001$

Table 5-11: Mean Difference of Ad Responses between Healthy and Unhealthy Food Ads (Experiment 2)

		N	Claim Believability	Attitude toward Ad	Attitude toward Product	Attitude toward Brand	Purchase Intension
Healthy product	Benefit seeking attributes	182	4.83 (1.10)	4.60 (1.06)	4.57 (1.19)	4.58 (1.18)	3.99 (1.34)
	Risk-avoidance attributes	235	4.88 (1.33)	4.73 (1.35)	4.74 (1.39)	4.71 (1.43)	4.19 (1.65)
	Taste attributes	101	4.37 (0.99)	4.17 (0.91)	4.03 (0.99)	4.01 (0.92)	3.37 (1.41)
Unhealthy product	Benefit seeking attributes	184	4.34 (1.35)	4.35 (1.30)	4.28 (1.33)	4.28 (1.31)	3.76 (1.55)
	Risk-avoidance attributes	205	4.51 (1.29)	4.60 (1.32)	4.57 (1.17)	4.47 (1.31)	3.93 (1.49)
	Taste attributes	99	4.53 (0.94)	4.48 (0.96)	4.52 (1.05)	4.36 (1.04)	3.95 (1.33)

Table 5-12: Univariate F-values of Experiment 2: Ad Responses

Factors	Claim Believability	Attitude toward Ad	Attitude toward Product	Attitude toward Brand	Purchase Intension
Blocking/Covariates:					
Diet	1.90	.35	1.40	.15	3.61$^{\#}$
BMI	1.37	1.90	3.75#	.06	1.63
BE-Appearance	1.57	4.28*	6.57*	.60	17.50***
BE-Attribution	5.84*	2.06	3.08#	1.72	7.97***
BE-Weight	.03	.80	1.60	.89	3.43#
Health Consciousness	7.01***	25.61***	26.31***	29.06***	58.75***
Poverty line	3.08#	3.60#	5.63*	4.38*	7.80**
Education	.59	.50	5.20*	3.64#	1.25
Main Effects:					
Product Type (A)	8.41**	.10	.02	.66	.10
Attribute Type (B)	1.40	3.48*	3.86*	3.54*	1.65
Interaction Effects:					
A by B	4.27*	3.14*	5.88**	4.41*	5.22**

Note:
Univariate d.f. = 1/992, $^{\#}$p<.10, *p<.05, **p<.01, ***p<.001

Table 5-13: Construct Correlations in Experiment 2

	Case of Ad Evalution	Self-congruity	Functional-congruity
Self-congruity	Claim Believability		
	Attitude toward Ad		
	Attitude toward Product		
	Attitude toward Brand		
	Purchase Intension		
Fuctional-congruity	Claim Believability	.39***	
	Attitude toward Ad	.39***	
	Attitude toward Product	.38***	
	Attitude toward Brand	.39***	
	Purchase Intension	.37***	
Ad response	Claim Believability	.30***	.38***
	Attitude toward Ad	.40***	.36***
	Attitude toward Product	.45***	.41***
	Attitude toward Brand	.34***	.35***
	Purchase Intension	.50***	.37***

Note:
***p<.001

Table 5-14: Overall Model Fit in Experiment 2

Case of Ad Response	Chi-square	SRMR	IFI	GFI	AGFI	NFI	CFI	RMSEA
Claim Believability	449.65 (p<.001, df = 50)	0.0167	0.986	0.966	0.946	0.985	0.986	0.06
Attitude toward Ad	860.12 (p<.001, df = 73)	0.0230	0.975	0.945	0.921	0.973	0.975	0.07
Attitude toward Product	779.83 (p<.001, df = 73)	0.0252	0.978	0.973	0.926	0.976	0.978	0.07
Attitude toward Brand	539.42 (p<.001, df = 61)	0.0159	0.986	0.963	0.945	0.984	0.986	0.06
Purchase Intension	627.90 (p<.001, df = 61)	0.023	0.983	0.956	0.934	0.981	0.983	0.07

Table 5-15: Model Fit for Hypotheses Testing in Experiment 2

Case of Ad Response	Chi-square	SRMR	IFI	GFI	AGFI	NFI	CFI	RMSEA
Claim Believability	449.65 (p<.001, df = 50)	0.0167	0.986	0.966	0.946	0.985	0.986	0.06
Attitude toward Ad	860.12 (p<.001, df = 73)	0.023	0.975	0.945	0.921	0.973	0.975	0.07
Attitude toward Product	779.83 (p<.001, df = 73)	0.0252	0.978	0.973	0.926	0.976	0.978	0.07
Attitude toward Brand	539.42 (p<.001, df = 61)	0.0159	0.986	0.963	0.945	0.984	0.986	0.06
Purchase Intension	627.90 (p<.001, df = 61)	0.0230	0.983	0.956	0.934	0.981	0.983	0.07

Table 5-16: Results of Hypotheses Testing and Research Question in Experiment 2

Case of DV	Path Coefficients					Bootstrapping	
	ASC ← SC	ISC ← SC	SC→FC	SC→DV	FC→ DV	Lower	Upper
Claim Believability	.908***	.974***	.385***	.176***	.311***	.1696	.2362
Attitude toward Ad	.948***	.934***	.387***	.302***	.246***	.1597	.2211
Attitude toward Product	.959***	.922***	.384***	.342***	.274***	.1630	.2294
Attitude toward Brand	.933***	.946***	.388***	.244***	.251***	.0804	.1136
Purchase Intension	.984***	.899***	.374***	.425***	.207***	.1214	.1915

Note:
***p<.001
ASC = Actual self-congruity
ISC = Ideal self-congruity
FC = Functional-congruity
DV = Ad responses

Table 5-17: Comparisons of Direct Effects in Experiment 2

Case of Ad Responses	Product Type	Attribute Type	Direct Effects		Higher Congruity
			Self-congruity on Ad Responses	Functional-congruity on Ad Responses	
Claim Believability	Healthy Food	Benefit-seeking	.026	.486***	Functional-congruity
		Risk-avoidance	.208***	.518***	Functional-congruity
		Taste	.024	.478***	Functional-congruity
	Unhealthy Food	Benefit-seeking	.223**	.455***	Functional-congruity
		Risk-avoidance	.123#	.555***	Functional-congruity
		Taste	.427***	.391***	Self-congruity
Attitude toward Ad	Healthy Food	Benefit-seeking	.297***	.441***	Functional-congruity
		Risk-avoidance	.327***	.496***	Functional-congruity
		Taste	.340***	.420***	Functional-congruity
	Unhealthy Food	Benefit-seeking	.342***	.460***	Functional-congruity
		Risk-avoidance	.182***	.535***	Functional-congruity
		Taste	.399***	.387***	Self-congruity
Attitude toward Product	Healthy Food	Benefit-seeking	.349***	.425***	Functional-congruity
		Risk-avoidance	.336***	.488***	Functional-congruity
		Taste	.468***	.342***	Self-congruity
	Unhealthy Food	Benefit-seeking	.399***	.477***	Functional-congruity
		Risk-avoidance	.181**	.559***	Functional-congruity
		Taste	.485***	.212***	Self-congruity
Attitude toward Brand	Healthy Food	Benefit-seeking	.275***	.416***	Functional-congruity
		Risk-avoidance	.239***	.471***	Functional-congruity
		Taste	.275***	.438***	Functional-congruity
	Unhealthy Food	Benefit-seeking	.326***	.443***	Functional-congruity
		Risk-avoidance	.057	.552***	Functional-congruity
		Taste	.322***	.408***	Functional-congruity
Purchase Intension	Healthy Food	Benefit-seeking	.646***	.117*	Self-congruity
		Risk-avoidance	.499***	.375***	Self-congruity
		Taste	.632***	.105*	Self-congruity
	Unhealthy Food	Benefit-seeking	.554***	.267***	Self-congruity
		Risk-avoidance	.346***	.434***	Functional-congruity
		Taste	.373***	.249***	Self-congruity

Note:
#p<.10, *p<.05, **p<.01, ***p<.001

Table 5-18: Moderating Effects of Poverty Level on the Prediction Model of Self- and Functional-congruities –Healthy Product Ads

Case of Ad Response	Groups	Self-congruity→ Functional-congruity		Self-congruity→ Ad Response		Functional -congruity→ Ad Response		Bootstrapping	
		Standardized Estimate	Δx^2	Standardized Estimate	Δx^2	Standardized Estimate	Δx^2	Lower	Upper
Claim believability	Below Poverty	.476***	1.291	.077	3.437#	.542***	0.025	.1242	.2528
	Above Poverty	.540***		.207***		.466***		.1124	.2462
Attitude toward ad	Below Poverty	.472***	1.349	.232***	13.103***	.544***	2.000	.1244	.2599
	Above Poverty	.541***		.458***		.364***		.0902	.2101
Attitude toward product	Below Poverty	.479***	0.685	.271***	17.647***	.514***	2.192	.1458	.2693
	Above Poverty	.539***		.533***		.323***		.0763	.1934
Attitude toward brand	Below Poverty	.478***	0.913	.195***	6.021*	.521***	2.162	.1366	.2778
	Above Poverty	.541***		.360***		.352***		.0782	.2130
Purchase intension	Below Poverty	.480***	0.008	.467***	5.363*	.363***	8.108**	.1063	.2440
	Above Poverty	.509***		.681***		.143***		.0166	.1319

Note:
#p<.10, *p<.05, **p<.01, ***p<.001

Table 5-19: Moderating Effects of Poverty Level on the Prediction Model of Self- and Functional-congruities – HNR Claimed Ads

Case of Ad Response	Groups	Self-congruity→ Functional-congruity		Self-congruity→ Ad Response		Functional -congruity→ Ad Response		Bootstrapping	
		Standardized Estimate	Δx^2	Standardized Estimate	Δx^2	Standardized Estimate	Δx^2	Lower	Upper
Claim believability	Below Poverty	.517***	0.373	.068	7.606**	.582***	1.746	.1864	.3134
	Above Poverty	.553***		.240***		.443***		.1421	.2358
Attitude toward ad	Below Poverty	.513***	0.314	.167***	22.444***	.582***	10.293**	.1942	.3228
	Above Poverty	.553***		.452***		.350***		.1117	.2012
Attitude toward product	Below Poverty	.517***	0.107	.183***	28.077***	.592***	12.506***	.2180	.3448
	Above Poverty	.551***		.497***		.338***		.1159	.2056
Attitude toward brand	Below Poverty	.519***	0.179	.079#	19.962***	.617***	15.843***	.2104	.3479
	Above Poverty	.554***		.367***		.338***		.1059	.2015
Purchase intension	Below Poverty	.521***	0.084	.372***	16.426***	.462***	14.202***	.1717	.3047
	Above Poverty	.613***		.613***		.184***		.0615	.1611

Note:
#$p<.10$, *$p<.05$, **$p<.01$, ***$p<.001$

Table 5-20: Moderating Effects of Education Level on the Prediction Model of Self- and Functional-congruities– Healthy Product Ads

Case of Ad Response	Groups	Self-congruity→ Functional-congruity		Self-congruity→ Ad Response		Functional -congruity→ Ad Response		Bootstrapping	
		Standardized Estimate	Δx^2	Standardized Estimate	Δx^2	Standardized Estimate	Δx^2	Lower	Upper
Claim believability	Lower Education	.411***	0.182	.015	3.437#	.510***	0.182	.0359	.2391
	Higher Education	.534***		.177***		.500***		.1424	.2538
Attitude toward ad	Lower Education	.377***	4.169*	.176***	13.103***	.463***	0.020	.0332	.2300
	Higher Education	.533***		.399***		.453***		.1453	.2588
Attitude toward product	Lower Education	.408***	2.633	.120	17.647***	.441***	0.004	.0463	.2291
	Higher Education	.534***		.470***		.415***		.1541	.2660
Attitude toward brand	Lower Education	.409***	2.689	.104	6.021*	.507***	1.510	.0511	.2795
	Higher Education	.534***		.327***		.421***		.1332	.2625
Purchase intension	Lower Education	.351***	5.800*	.371***	5.363*	.400***	8.818**	.0567	.2694
	Higher Education	.531***		.638***		.206***		.0821	.2025

Note:
#p<.10, *p<.05, **p<.01, ***p<.001

Table 5-21: Moderating Effects of Education Level on the Prediction Model of Self- and Functional-congruities - HNR Claimed Ads

Case of Ad Response	Groups	Self-congruity→ Functional-congruity Standardized Estimate	Δx^2	Self-congruity→ Ad Response Standardized Estimate	Δx^2	Functional -congruity→ Ad Response Standardized Estimate	Δx^2	Bootstrapping Lower	Upper
Claim believability	Lower Education	.345***	0.373	.032	4.524*	.523***	1.951	.0815	.2348
	Higher Education	.589***		.216***		.497***		.1835	.2708
Attitude toward ad	Lower Education	.329***	0.314	.124***	13.532***	.513***	2.402	.0816	.2353
	Higher Education	.589***		.379***		.447***		.1716	.2519
Attitude toward product	Lower Education	.341***	0.107	.08	24.518***	.554***	4.956*	.0956	.2534
	Higher Education	.587***		.436***		.425***		.1723	.2509
Attitude toward brand	Lower Education	.342***	0.179	.067	9.444**	.598***	11.868**	.1005	.2804
	Higher Education	.590***		.299***		.429***		.1586	.2498
Purchase intension	Lower Education	.278***	0.084	.266***	13.012***	.516***	30.465***	.0922	.2584
	Higher Education	.588***		.609***		.226***		.0997	.1899

Note:
[#]p<.10, *p<.05, **p<.01, ***p<.001

Table 5-22: Moderating Effects of BMI Level on the Prediction Model of Self- and Functional-congruities - Healthy Product Ads

Case of Ad Response	Groups	Self-congruity→ Functional-congruity		Self-congruity→ Ad Response		Functional -congruity→ Ad Response		Bootstrapping	
		Standardized Estimate	Δx^2	Standardized Estimate	Δx^2	Standardized Estimate	Δx^2	Lower	Upper
Claim believability	Not Overweight	.547***	0.016	.194***	1.580	.396***	2.139	.0892	.2381
	Overweight	.522***		.066		.556***		.1509	.2805
Attitude toward ad	Not Overweight	.553***	0.100	.348***	0.109	.377***	5.679*	.0710	.2113
	Overweight	.521***		.311***		.510***		.1415	.2679
Attitude toward product	Not Overweight	.545***	0.017	.389***	0.881	.338***	5.952*	.0770	.2174
	Overweight	.521***		.391***		.479***		.1527	.2654
Attitude toward brand	Not Overweight	.548***	0.042	.241***	1.343	.334***	3.672#	.0645	.2169
	Overweight	.521***		.313***		.464***		.0927	.2153
Purchase intension	Not Overweight	.547***	0.227	.642***	0.297	.134***	2.472	.0049	.1536
	Overweight	.510***		.588***		.269***		.0955	.2109

Note:
#p<.10, *p<.05, **p<.01, ***p<.001

Table 5-23: Moderating Effects of BMI Level on the Prediction Model of Self- and Functional-congruities - HNR Claimed Ads

Case of Ad Response	Groups	Self-congruity→ Functional-congruity		Self-congruity→ Ad Response		Functional-congruity→ Ad Response		Bootstrapping	
		Standardized Estimate	Δx^2	Standardized Estimate	Δx^2	Standardized Estimate	Δx^2	Lower	Upper
Claim believability	Not Overweight	.591***	1.010	.203***	2.023	.436***	1.137	.1360	.2749
	Overweight	.517***		.093*		.540***		.1729	.2820
Attitude toward ad	Not Overweight	.592***	1.605	.305***	0.028	.419***	3.015#	.1281	.2660
	Overweight	.511***		.268***		.503***		.1574	.2611
Attitude toward product	Not Overweight	.591***	1.468	.374***	0.986	.410***	2.554	.1447	.2809
	Overweight	.512***		.297***		.512***		.1762	.2801
Attitude toward brand	Not Overweight	.592***	1.170	.239***	0.162	.392***	3.370#	.1282	.2695
	Overweight	.516***		.200***		.516***		.1713	.2843
Purchase intension	Not Overweight	.590***	2.221	.586***	2.404	.237***	1.576	.0673	.2195
	Overweight	.501***		.493***		.332***		.1232	.2338

Note:
#p<.10, *p<.05, **p<.01, ***p<.001

Table 5-24: Moderating Effects of Health Consciousness Level on the Prediction Model of Self- and Functional-congruities - Healthy Product Ads

Case of Ad Response	Groups	Self-congruity→ Functional-congruity		Self-congruity→ Ad Response		Functional -congruity→ Ad Response		Bootstrapping	
		Standardized Estimate	Δx^2	Standardized Estimate	Δx^2	Standardized Estimate	Δx^2	Lower	Upper
Claim believability	Low Health Consciousness	.524***	2.375	.116	0.152	.474***	0.204	.1295	.3349
	High Health Consciousness	.470***		.191***		.526***		.1243	.2344
Attitude toward ad	Low Health Consciousness	.542***	1.798	.562***	10.138**	.268***	9.538**	.0795	.2238
	High Health Consciousness	.474***		.256***		.517***		.1266	.2430
Attitude toward product	Low Health Consciousness	.532***	0.877	.590***	8.383**	.265***	8.161**	.0811	.2192
	High Health Consciousness	.476***		.303***		.486***		.1272	.2419
Attitude toward brand	Low Health Consciousness	.542***	1.490	.381***	2.148	.293***	6.437*	.0545	.2191
	High Health Consciousness	.476***		.224***		.493***		.1264	.2533
Purchase intension	Low Health Consciousness	.466***	0.005	.771***	0.590	.022	22.535***	-.0604	.0852
	High Health Consciousness	.476***		.454***		.361***		.1104	.2291

Note:
[#]p<.10, *p<.05, **p<.01, ***p<.001

Table 5-25: Moderating Effects of Health Consciousness Level on the Prediction Model of Self- and Functional-congruities - HNR Claimed Ads

Case of Ad Response	Groups	Self-congruity→ Functional-congruity		Self-congruity→ Ad Response		Functional -congruity→ Ad Response		Bootstrapping	
		Standardized Estimate	Δx^2	Standardized Estimate	Δx^2	Standardized Estimate	Δx^2	Lower	Upper
Claim believability	Low Health Consciousness	.527***	0.503	.163*	0.213	.505***	0.094	.1574	.3282
	High Health Consciousness	.525***		.162***		.544***		.1744	.2725
Attitude toward ad	Low Health Consciousness	.536***	0.023	.527***	17.771***	.358***	4.762***	.1163	.2535
	High Health Consciousness	.527***		.211***		.519***		.1709	.2939
Attitude toward product	Low Health Consciousness	.532***	0.877	.590***	8.383**	.265***	8.161**	.1244	.2543
	High Health Consciousness	.476***		.303***		.486***		.1847	.2847
Attitude toward brand	Low Health Consciousness	.542***	0.398	.289***	2.458	.367***	3.891*	.0863	.2525
	High Health Consciousness	.528***		.174***		.532***		.1878	.2864
Purchase intension	Low Health Consciousness	.503***	0.290	.791***	4.643*	.029	41.650***	-.0290	.0954
	High Health Consciousness	.528***		.375***		.422***		.1629	.2665

Note:
[#]p<.10, *p<.05, **p<.01, ***p<.001

Table 5-26: Moderating Effects of BE Appearance Level on the Prediction Model of Self- and Functional-congruities - Healthy Product Ads

Case of Ad Response	Groups	Self-congruity→ Functional-congruity		Self-congruity→ Ad Response		Functional -congruity→ Ad Response		Bootstrapping	
		Standardized Estimate	Δx^2	Standardized Estimate	Δx^2	Standardized Estimate	Δx^2	Lower	Upper
Claim believability	Low BE Appearance	.537***	0.004	0.069	0.981	.524***	0.127	.1314	.2880
	High BE Appearance	.510***		.160**		.499***		.1243	.2463
Attitude toward ad	Low BE Appearance	.537***	0.006	.361***	1.132	.447***	0.389	.1160	.2660
	High BE Appearance	.510***		.306***		.480***		.1267	.2530
Attitude toward product	Low BE Appearance	.537***	0.000	.422***	1.657	.413***	0.175	.1026	.2726
	High BE Appearance	.508***		.355***		.454***		.1354	.2480
Attitude toward brand	Low BE Appearance	.536***	0.005	.359***	3.591#	.388***	0.396	.0941	.2669
	High BE Appearance	.509***		.201***		.496***		.1367	.2694
Purchase intension	Low BE Appearance	.536***	0.093	.653***	8.129**	.252***	0.020	.0854	.2537
	High BE Appearance	.493***		.479***		.294***		.0860	.2100

Note:
#p<.10, *p<.05, **p<.01, ***p<.001

Table 5-27: Moderating Effects of BE Appearance Level on the Prediction Model of Self- and Functional-congruities - HNR Claimed Ads

Case of Ad Response	Groups	Self-congruity→ Functional-congruity		Self-congruity→ Ad Response		Functional -congruity→ Ad Response		Bootstrapping	
		Standardized Estimate	Δx^2	Standardized Estimate	Δx^2	Standardized Estimate	Δx^2	Lower	Upper
Claim believability	Low BE Appearance	.563***	0.455	.192**	0.582	.489***	0.039	.1419	.3028
	High BE Appearance	.502***		.137**		.528***		.1563	.2616
Attitude toward ad	Low BE Appearance	.561***	0.468	.342***	2.593	.442***	0.061	.1453	.3065
	High BE Appearance	.499***		.271***		.508***		.1545	.2525
Attitude toward product	Low BE Appearance	.562***	0.585	.375***	2.409	.449***	0.004	.1570	.3172
	High BE Appearance	.498***		.298***		.498***		.1641	.2636
Attitude toward brand	Low BE Appearance	.563***	0.664	.254***	1.251	.464***	0.06	.1597	.3245
	High BE Appearance	.500***		.199***		.515***		.1580	.2648
Purchase intension	Low BE Appearance	.563***	1.539	.517***	3.002#	.343***	0.916	.1299	.2878
	High BE Appearance	.481***		.465***		.328***		.1083	.2172

Note:
#p<.10, *p<.05, **p<.01, ***p<.001

Table 5-28: Moderating Effects of BE Attribution Level on the Prediction Model of Self- and Functional-congruities - Healthy Product Ads

Case of Ad Response	Groups	Self-congruity→ Functional-congruity		Self-congruity→ Ad Response		Functional -congruity→ Ad Response		Bootstrapping	
		Standardized Estimate	Δx^2	Standardized Estimate	Δx^2	Standardized Estimate	Δx^2	Lower	Upper
Claim believability	Low BE Attribution	.463***	0.600	.173*	0.429	.393***	3.474#	.0789	.2206
	High BE Attribution	.492***		.133*		.558***		.1732	.2832
Attitude toward ad	Low BE Attribution	.485***	0.441	.342***	0.240	.422***	1.398	.0772	.1923
	High BE Attribution	.495***		.313***		.491***		.1644	.2788
Attitude toward product	Low BE Attribution	.486***	0.238	.293***	0.572	.402***	0.511	.0770	.2130
	High BE Attribution	.502***		.403***		.454***		.1683	.2775
Attitude toward brand	Low BE Attribution	.484***	0.338	.272***	0.128	.391***	2.182	.0712	.2159
	High BE Attribution	.500***		.238***		.470***		.1539	.2735
Purchase intension	Low BE Attribution	.445***	0.084	.736***	6.296*	0.087	10.369**	.0049	.1284
	High BE Attribution	.496***		.458***		.358***		.1477	.2618

Note:
#p<.10, *p<.05, **p<.01, ***p<.001

Table 5-29: Moderating Effects of BE Attribution Level on the Prediction Model of Self- and Functional-congruities - HNR Claimed Ads

Case of Ad Response	Groups	Self-congruity→ Functional-congruity		Self-congruity→ Ad Response		Functional -congruity→ Ad Response		Bootstrapping	
		Standardized Estimate	Δx^2	Standardized Estimate	Δx^2	Standardized Estimate	Δx^2	Lower	Upper
Claim believability	Low BE Attribution	.430***	0.760	.255***	1.706	.320***	0.458	.0950	.2162
	High BE Attribution	.417***		.193***		.294***		.0311	.1491
Attitude toward ad	Low BE Attribution	.484***	0.017	.401***	7.524**	.391***	1.753	.0984	.2098
	High BE Attribution	.495***		.221***		.514***		.0956	.2093
Attitude toward product	Low BE Attribution	.483***	0.000	.361***	2.728#	.417***	0.754	.1106	.2337
	High BE Attribution	.500***		.269***		.514***		.1081	.2302
Attitude toward brand	Low BE Attribution	.487***	0.089	.277***	2.987#	.439***	1.243	.1163	.2416
	High BE Attribution	.500***		.149***		.501***		.1180	.2428
Purchase intension	Low BE Attribution	.464***	0.091	.680***	18.437***	.142***	11.784**	.0304	.1469
	High BE Attribution	.492***		.381***		.408***		.0303	.1437

Note:
#p<.10, *p<.05, **p<.01, ***p<.001

Table 5-30: Moderating Effects of BE Weight Level on the Prediction Model of Self- and Functional-congruities - Healthy Product Ads

Case of Ad Response	Groups	Self-congruity→ Functional-congruity		Self-congruity→ Ad Response		Functional -congruity→ Ad Response		Bootstrapping	
		Standardized Estimate	Δx^2	Standardized Estimate	Δx^2	Standardized Estimate	Δx^2	Lower	Upper
Claim believability	Low BE Weight	.505***	0.085	.309***	12.577***	.376***	8.261**	.0848	.1912
	High BE Weight	.560***		-.020		.619***		.1730	.3373
Attitude toward ad	Low BE Weight	.505***	0.203	.464***	14.131***	.346***	8.109**	.0842	.1919
	High BE Weight	.560***		.161**		.608***		.1716	.3188
Attitude toward product	Low BE Weight	.503***	0.396	.499***	11.887**	.327***	7.270**	.0896	.1999
	High BE Weight	.564***		.232***		.578***		.1857	.3321
Attitude toward brand	Low BE Weight	.501***	0.359	.442***	24.524***	.336***	12.309***	.0857	.2176
	High BE Weight	.561***		.012		.643***		.1981	.3600
Purchase intension	Low BE Weight	.486***	0.973	.735***	24.515***	.147**	10.864**	.0345	.1496
	High BE Weight	.561***		.326***		.446***		.1738	.3248

Note:
[#]p<.10, *p<.05, **p<.01, ***p<.001

Table 5-31: Moderating Effects of BE Weight Level on the Prediction Model of Self- and Functional-congruities - HNR Claimed Ads

Case of Ad Response	Groups	Self-congruity→ Functional-congruity		Self-congruity→ Ad Response		Functional -congruity→ Ad Response		Bootstrapping	
		Standardized Estimate	Δx^2	Standardized Estimate	Δx^2	Standardized Estimate	Δx^2	Lower	Upper
Claim believability	Low BE Weight	.572***	1.561	.350***	23.064***	.384***	15.468***	.1247	.2382
	High BE Weight	.529***		-.006		.605***		.2035	.3215
Attitude toward ad	Low BE Weight	.572***	1.251	.465***	29.877***	.355***	11.396**	.1235	.2332
	High BE Weight	.527***		.127**		.604***		.1983	.3087
Attitude toward product	Low BE Weight	.571***	1.055	.477***	22.057***	.368***	12.469***	.1372	.2459
	High BE Weight	.529***		.181***		.593***		.2126	.3258
Attitude toward brand	Low BE Weight	.573***	1.128	.391***	27.267***	.400***	13.628***	.1379	.2549
	High BE Weight	.530***		.033		.615***		.2126	.3380
Purchase intension	Low BE Weight	.560***	0.653	.704***	57.013***	.171***	15.649***	.0635	.1639
	High BE Weight	.524***		.285***		.489***		.1904	.3195

Note:
[#]p<.10, *p<.05, **p<.01, ***p<.001

Table 5-32: Moderating Effects of Current Dieting Status on the Prediction Model of Self- and Functional-congruities - Healthy Product Ads

Case of Ad Response	Groups	Self-congruity→ Functional-congruity		Self-congruity→ Ad Response		Functional -congruity→ Ad Response		Bootstrapping	
		Standardized Estimate	Δx^2	Standardized Estimate	Δx^2	Standardized Estimate	Δx^2	Lower	Upper
Claim believability	Not Dieting	.491***	0.128	.118*	0.000	.464***	3.892*	.1174	.2268
	Dieting	.541***		.137#		.646***		.1663	.3262
Attitude toward ad	Not Dieting	.491***	0.130	.350***	2.006	.430***	3.841*	.1189	.2163
	Dieting	.546***		.245***		.573***		.1415	.3059
Attitude toward product	Not Dieting	.491***	0.228	.425***	3.495#	.403***	4.540*	.1244	.2203
	Dieting	.534***		.275***		.530***		.1394	.3257
Attitude toward brand	Not Dieting	.491***	0.063	.291***	1.756	.403***	9.125**	.1105	.2124
	Dieting	.545***		.174**		.594***		.1720	.3714
Purchase intension	Not Dieting	.482***	0.000	.557***	0.008	.252***	1.916	.0714	.1789
	Dieting	.538***		.548***		.328***		.1108	.2825

Note:
#p<.10, *p<.05, **p<.01, ***p<.001

Table 5-33: Moderating Effects of Current Dieting Status on the Prediction Model of Self- and Functional-congruities - HNR Claimed Ads

Case of Ad Response	Groups	Self-congruity→ Functional-congruity		Self-congruity→ Ad Response		Functional -congruity→ Ad Response		Bootstrapping	
		Standardized Estimate	Δx^2	Standardized Estimate	Δx^2	Standardized Estimate	Δx^2	Lower	Upper
Claim believability	Not Dieting	.494***	0.650	.189***	1.307	.494***	1.436	.1557	.2521
	Dieting	.514***		.120		.603***		.1746	.3166
Attitude toward ad	Not Dieting	.494***	0.355	.333***	5.086*	.486***	1.338	.1588	.2476
	Dieting	.513***		.162*		.580***		.1636	.3111
Attitude toward product	Not Dieting	.494***	0.398	.362***	9.191**	.469***	3.148#	.1625	.2458
	Dieting	.514***		.107		.611***		.1821	.3418
Attitude toward brand	Not Dieting	.495***	0.484	.243***	7.303**	.464***	0.683	.1520	.2444
	Dieting	.514***		.007		.571***		.1913	.3629
Purchase intension	Not Dieting	.462***	0.003	.459***	1.037	.382***	4.872*	.1101	.2108
	Dieting	.513***		.349***		.515***		.1602	.3183

Note:
#p<.10, *p<.05, **p<.01, ***p<.001

Table 6-1: Summary of Hypotheses Testing Results – H1 & H2 across two experiments

		Product Types	Attribute Type	Claim Believability	Attitude toward Ad	Attitude toward Product	Attitude toward Brand	Purchase Intension
Experiment 1	H1	Healthy products	Benefit-seeking	●	●	●	●	●
			Taste					
		Unhealthy products	Benefit-seeking					
			Taste	○	○	○	○	●
	H2	Healthy products	Risk-avoidance	●	●	○	●	○
			Taste					
		Unhealthy products	Risk-avoidance					
			Taste	○	○	●	○	○
Experiment 2	H1	Healthy products	Benefit-seeking	●	○	●	●	●
			Taste					
		Unhealthy products	Benefit-seeking					
			Taste	○	○	○	○	○
	H2	Healthy products	Risk-avoidance	●	●	●	●	●
			Taste					
		Unhealthy products	Risk-avoidance					
			Taste	○				○

Note:
●= Higher ad response than compared group at significant level ($p < .05$).
○= Higher ad response than compared group, but not at significant level ($p > .05$).

Table 6-2: Summary of Hypotheses Testing Results – H5 to H10

Product Groups	Respondent Groups	Stronger Self-congruity Effect					Stronger Functional-congruity Effect				
		Cb	Aad	Ap	Ab	PI	Cb	Aad	Ap	Ab	PI
Healthy Products (H5a)	Below Poverty										●
	Above Poverty		●	●	●	●					
HNR claimed Products (H5b)	Below Poverty							●	●	●	●
	Above Poverty	●	●	●	●	●					
Healthy Products (H6a)	Low Education										●
	Higher Education		●	●	●	●					
HNR claimed Products (H6b)	Low Education								●	●	●
	Higher Education	●	●	●	●	●					
Healthy Products (H7a)	Not Overweight										
	Overweight							●	●		
HNR claimed Products (H7b)	Not Overweight										
	Overweight										
Healthy Products (H8a)	Low Health Consciousness		●	●							
	High Health Consciousness							●	●	●	●
HNR claimed Products (H8b)	Low Health Consciousness		●	●		●					
	High Health Consciousness							●	●	●	●
Healthy Products (H9a)	Low BE Appearance					●					
	High BE Appearance										
HNR claimed Products (H9b)	Low BE Appearance										
	High BE Appearance										
Healthy Products (H9a)	Low BE Attribution					●					
	High BE Attribution										●
HNR claimed Products (H9b)	Low BE Attribution		●			●					
	High BE Attribution										●
Healthy Products (H9a)	Low BE Weight	●	●	●	●	●					
	High BE Weight						●	●	●	●	●
HNR claimed Products (H9b)	Low BE Weight	●	●	●	●	●					
	High BE Weight						●	●	●	●	●
Healthy Products (H10a)	Not Dieting										
	Dieting						●	●	●	●	
HNR claimed Products (H10b)	Not Dieting		●	●	●						
	Dieting										●

Note:

● = Higher predictive effect on ad response at significant level (p<.05).

Figure 1-1: Prediction Model of the Moderators, Mediators, and Outcomes in the Proposed Dissertation (Modified from Sirgy et al., 1991)
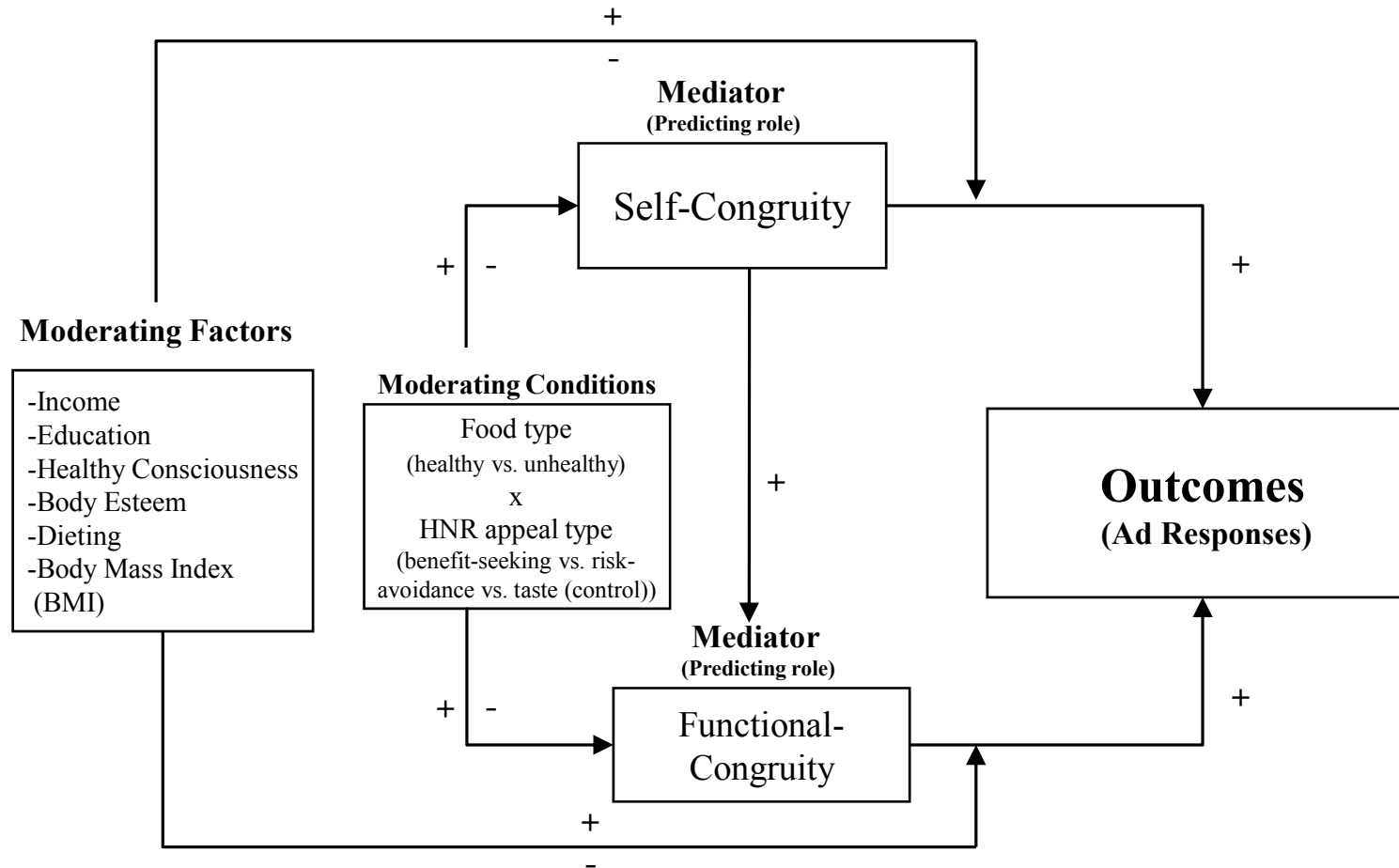
*For manipulation check, perceived benefit/risk for health, perceived healthiness/tastiness will be measured.

Figure 2-1:

Prediction Model of Self- and Functional-Congruity
(Source from Sirgy et al., 1991; Han 2006; Choi 2008)
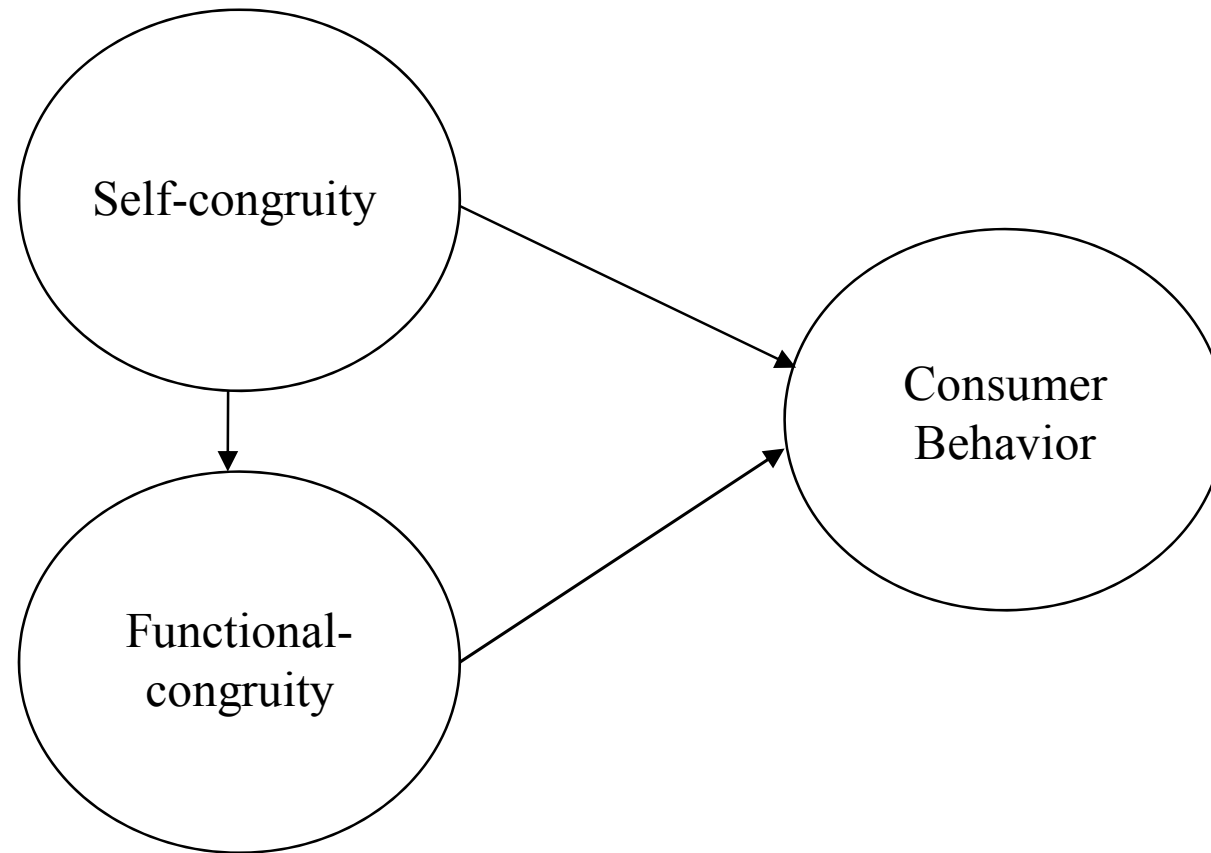
Figure 3-1: The Prediction Model of Self- and Functional-Congruity in the Proposed Dissertation (Modified from Sirgy, et al., 1991)
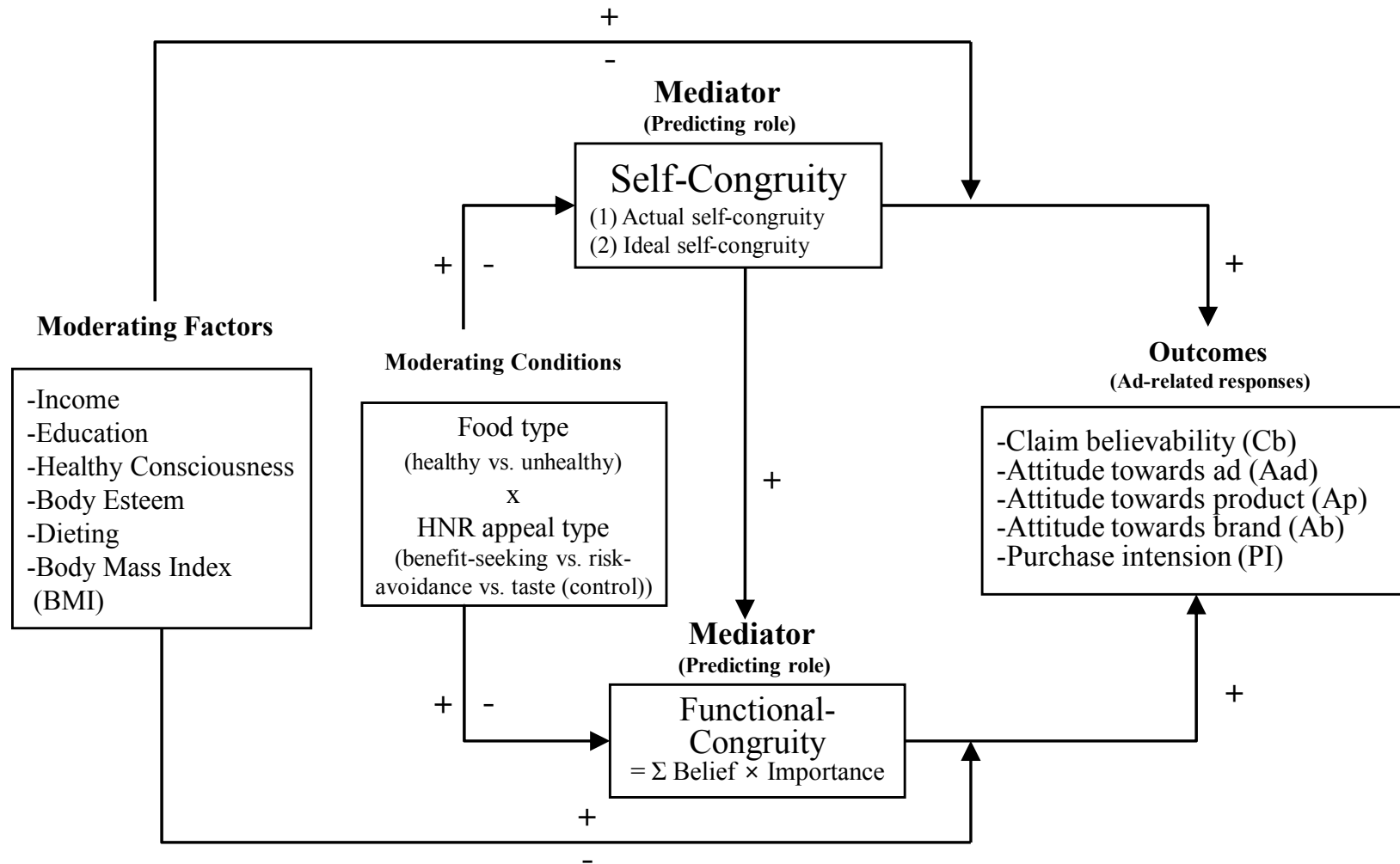
*For manipulation check, perceived benefit/risk for health, perceived healthiness/tastiness will be measured.

Figure 4-1: Research Framework

Preparing Stage

Content Analysis: Finding representative HNR claims

-A content analysis of 10 most circulated magazines in the U.S.
-Find frequently used benefit-seeking and risk-avoidance appeals

Pretest 1-1: Selecting perceived healthy and unhealthy food products

-Measure perceived healthiness and taste
- Measure perceived benefit and risk for health
- Select 2 perceivably healthy- and unhealthy food products

A survey of 60 college students and adults

Pretest 1-2: Selecting utilitarian evaluative criteria when purchasing food products

-Measure important utilitarian consideration factors for food purchase

Developmental Stage

Pretest 2: Developing ad stimuli and manipulation check

-Create 5 ad stimuli for each product (2 benefit-seeking vs. 2 risk-avoidance vs. 1 taste attribute)
-Attributes are selected based on the result of content analysis and products' Nutrition Facts
-A survey of 60 college students and adults
-Same measures with pretest 1-1

Executing Stage

Main experiment 1

-2 (healthy vs. unhealthy food) x 3 (benefit-seeking vs. risk-avoidance vs. taste attribute) factorial design
-500-600 college students
- Five ad stimuli will be shown to each subject randomly
-Assess subjects' ad-responses.
-Assess subjects' individual propensities except for income and education level.

Main experiment 2

-Same experimental design, measures with main experiment 1
- 500-600 adults from 20-65
-Assess subjects' self- and functional-congruity, and ad-responses.
-Assess subjects' all individual propensities.

Figure 4-2: Mean Differences between Experimental Groups in Pretest 2
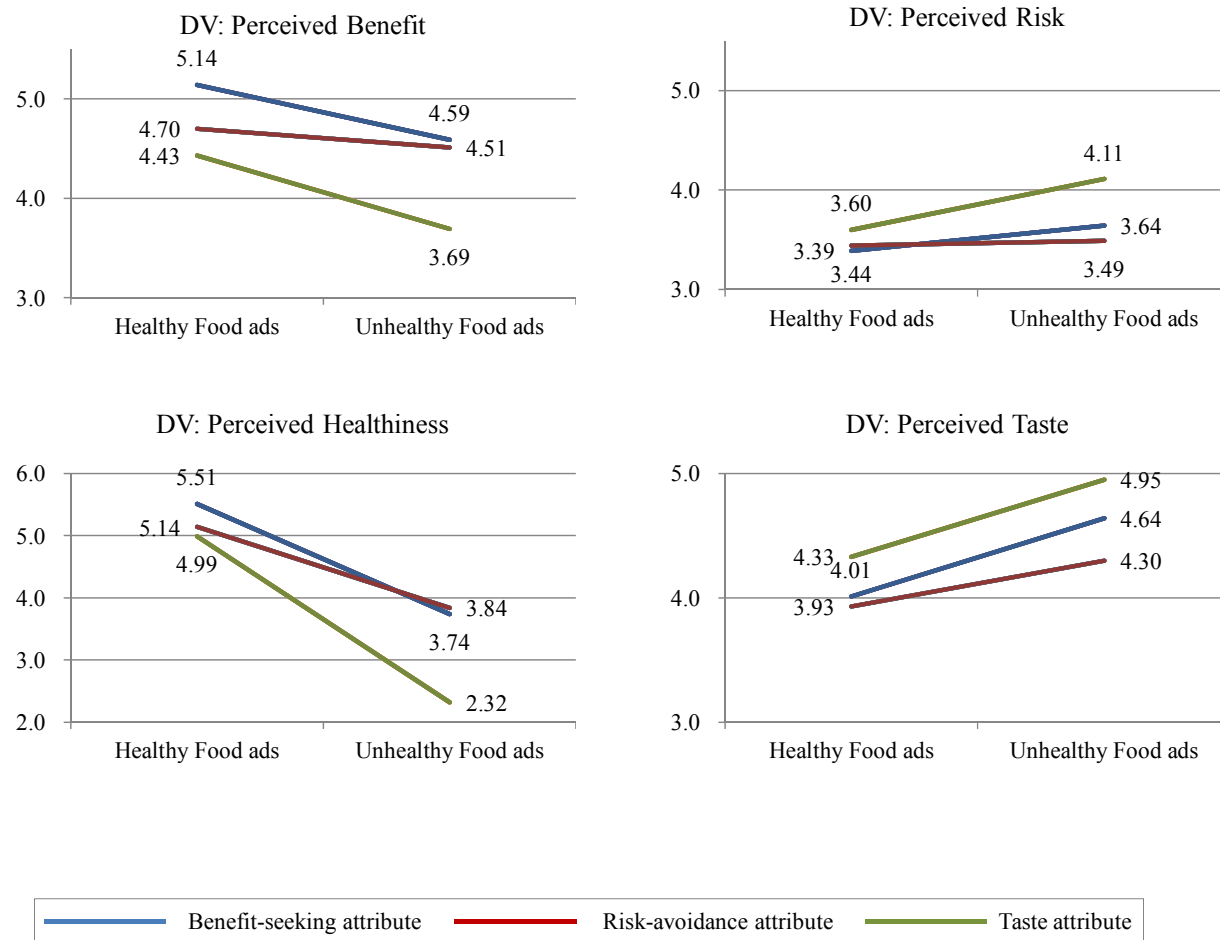
Figure 5-1: Mean Differences between Experimental Groups in Experiment 1 – Perceived Benefit, Risk, Healthiness, and Taste
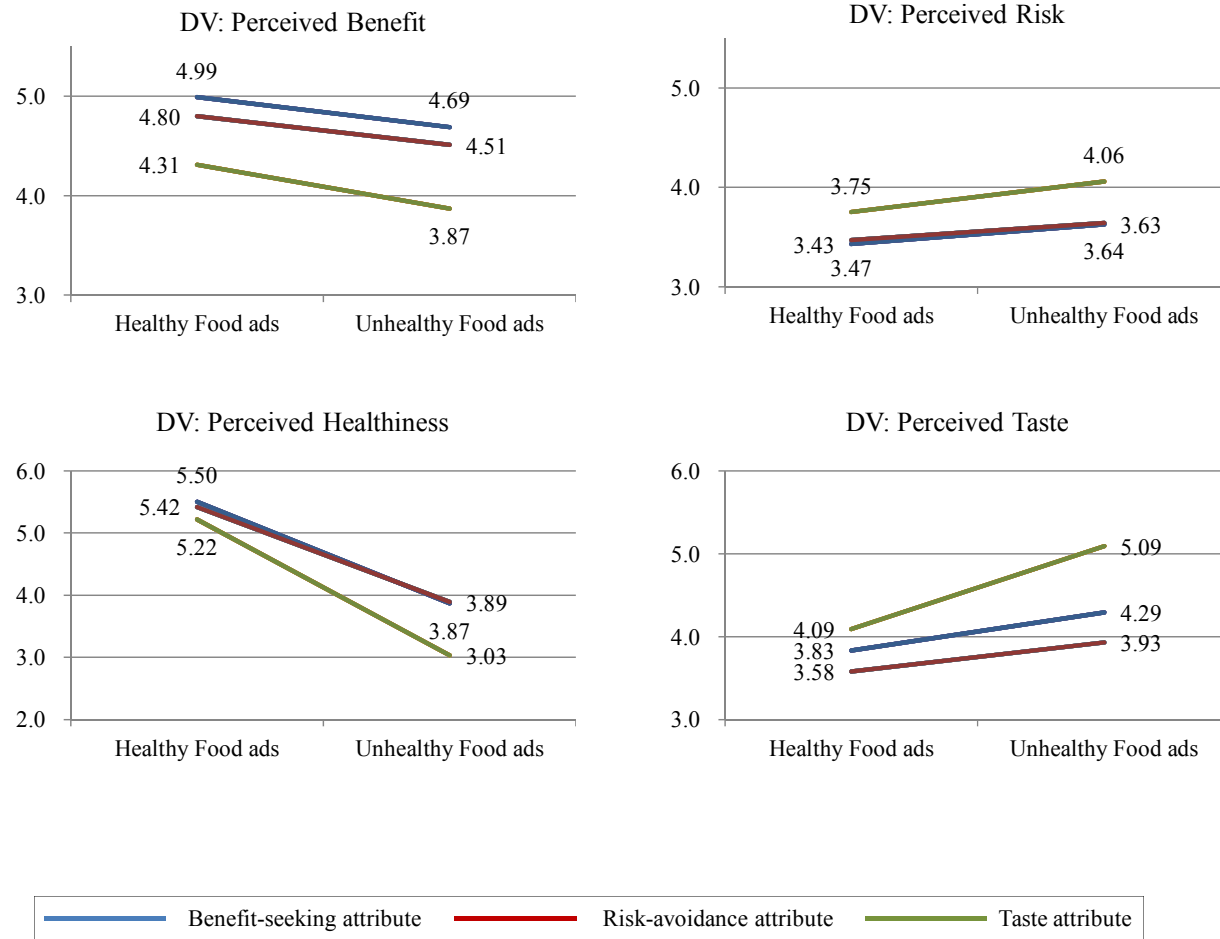
Figure 5-2: The Differences of Estimated Marginal Means of Ad Responses in Experiment 1

DV: Claim Believability

4.99
4.97
4.65
4.47
4.35
4.33

5.0

4.0

Healthy Food ads   Unhealthy Food ads

DV: Attitude toward Ad

4.34   4.31
4.33
4.15
4.13
4.06

4.5

3.5

Healthy Food ads   Unhealthy Food ads

DV: Attitude toward Product

5.0

4.53   4.44
4.45
4.32   4.21
4.20

4.0

3.0

Healthy Food ads   Unhealthy Food ads

DV: Attitude toward Brand

4.42
4.36
4.15
4.10
4.17
4.05

4.5

3.5

Healthy Food ads   Unhealthy Food ads

DV: Purchase Intension

4.0

3.77
3.62
3.63
3.45
3.36
3.31

3.0

Healthy Food ads   Unhealthy Food ads

——— Benefit-seeking attribute   ——— Risk-avoidance attribute   ——— Taste attribute

Figure 5-3: Mean Differences between Experimental Groups in Experiment 2 – Perceived Benefit, Risk, Healthiness, and Taste
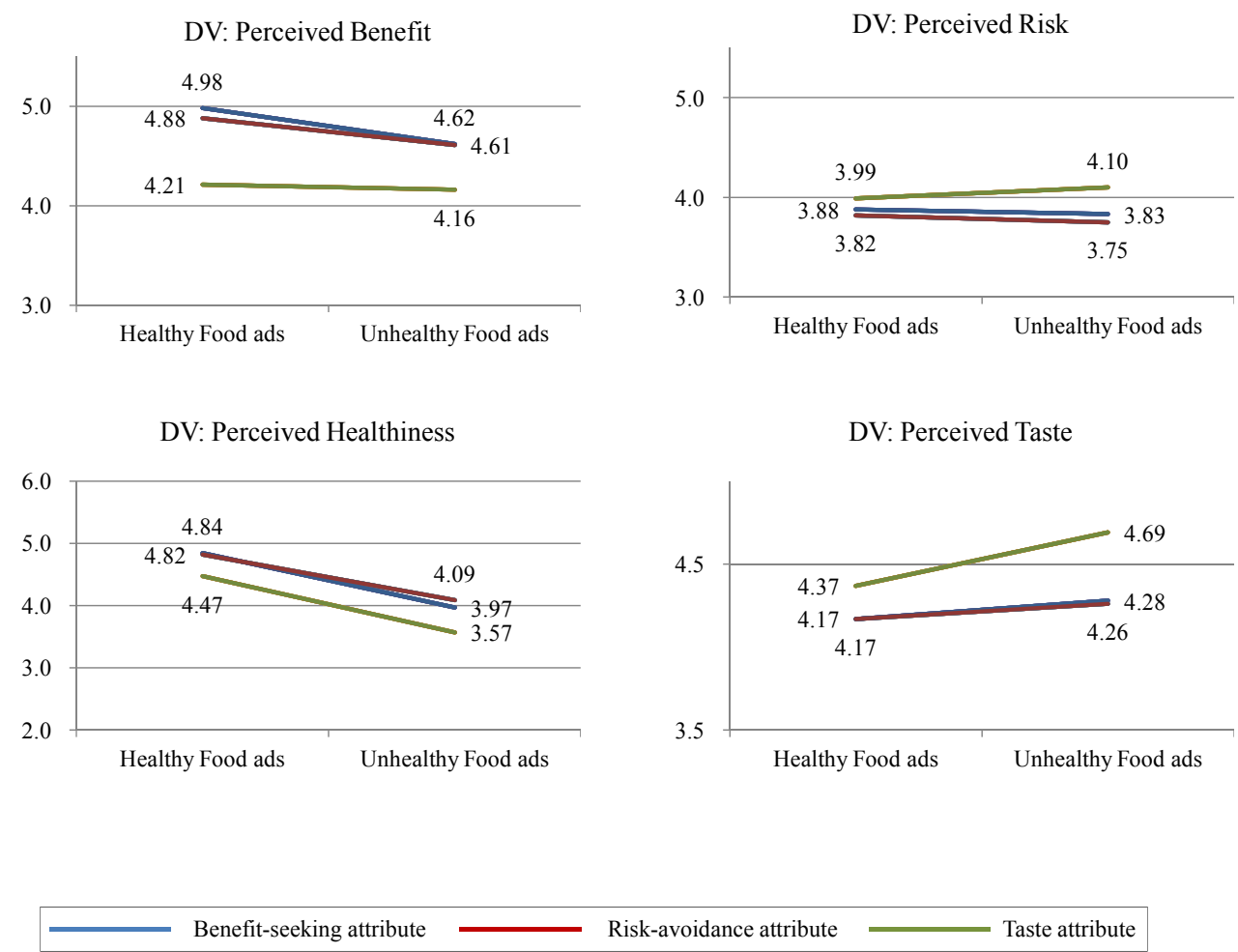
Figure 5-4: The Differences of Estimated Marginal Means of Ad Evaluations in Experiment 2
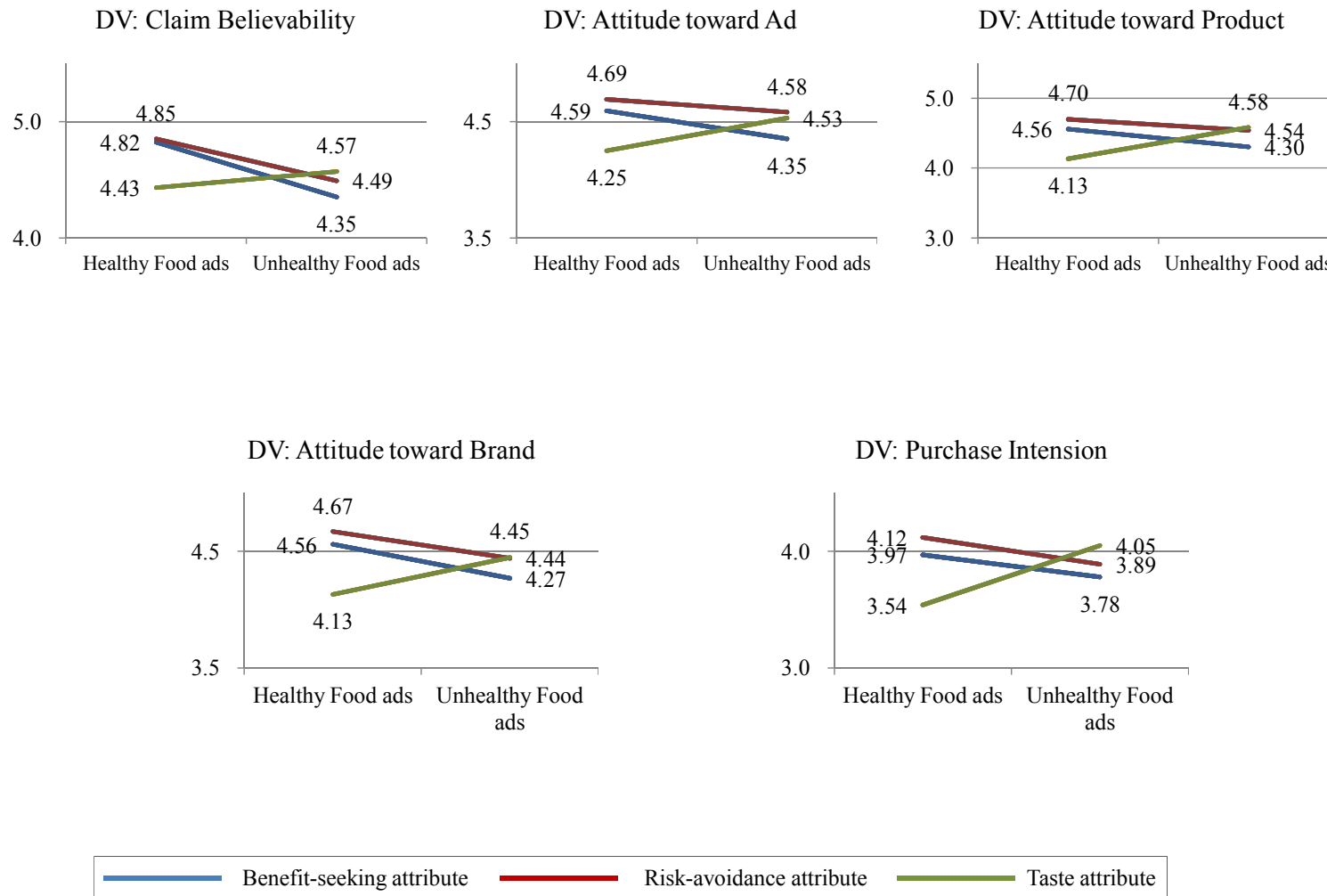
Figure 5-5: Proposed Self- and Functional- Congruity Model Predicting Ad Responses
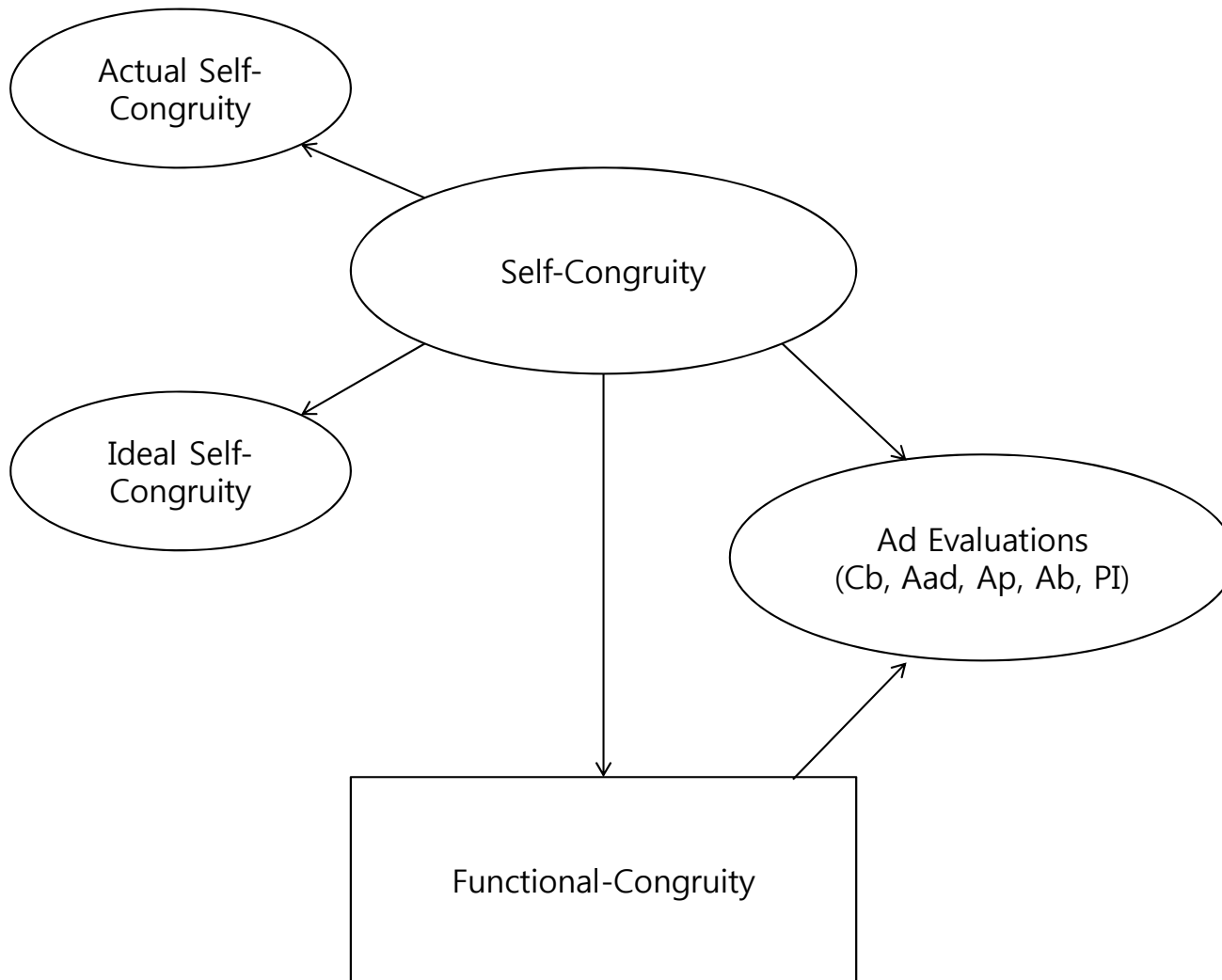
Figure 5-6: Second-order CFA Model for Self-congruity in Experiment 2

Figure 5-7: Path Model of Experiment 2
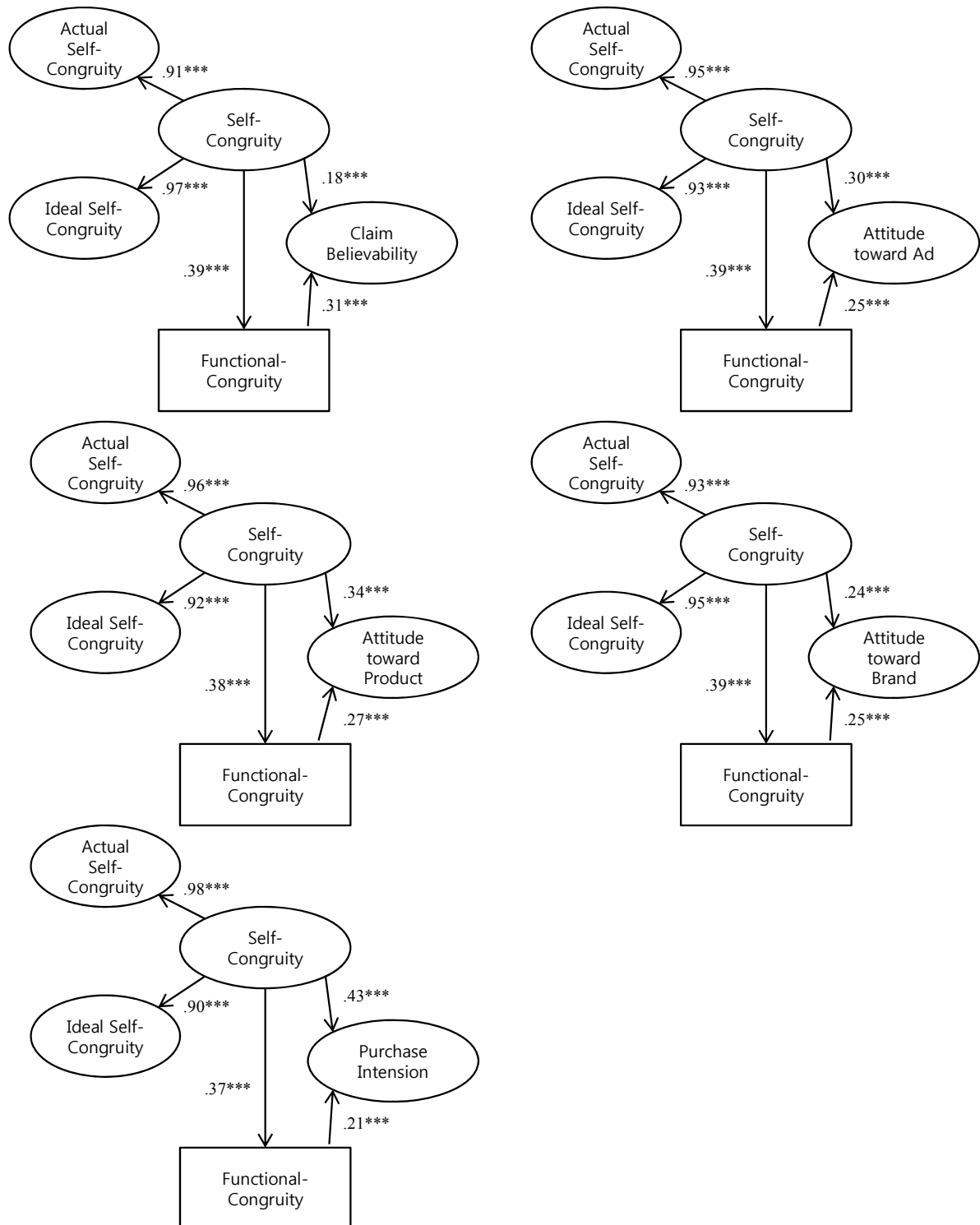
<Appendix A>
Ad Stimuli for Main Experiment

1. Chocolate Chip Cookie Ads

a. Taste appeal

b. Benefit-seeking appeal (more vitamins)

c. Benefit-seeking attribute (more protein)

d. Risk-avoidance attribute (less sugar)

e. Risk-avoidance attribute (fewer calories)

2. Multigrain Cereal Ads

a. Taste attribute

b. Benefit-seeking attribute (more vitamins)

c. Benefit-seeking attribute (more protein)

d. Risk-avoidance attribute (less sugar)

e. Risk-avoidance attribute (fewer calories)

3. Pepperoni Pizza Ads

a. Taste attribute

OUR PEPPERONI PIZZA CAN BE SUMMED UP IN TWO WORDS:
MORE TASTY, FLAVORFUL, DELICIOUS.

... SORRY, WE HAVE PROBLEMS STOPPING AT JUST TWO.

There just aren't enough adjectives to describe
the appetizing value of *Familia pepperoni pizza.*

b. Benefit-seeking attribute (more calcium)

OUR PEPPERONI PIZZA CAN BE SUMMED UP IN TWO WORDS:
MORE-CALCIUM, WHOLESOME, NUTRITIOUS.

... SORRY, WE HAVE PROBLEMS STOPPING AT JUST TWO.

There just aren't enough adjectives to describe
the value of *Familia pepperoni pizza.*
And, with **more calcium** than regular pepperoni pizza.

c. Benefit-seeking attribute (more fiber)

OUR PEPPERONI PIZZA CAN BE SUMMED UP IN TWO WORDS:
MORE-FIBER, WHOLESOME, NUTRITIOUS.

... SORRY, WE HAVE PROBLEMS STOPPING AT JUST TWO.

There just aren't enough adjectives to describe
the value of *Familia pepperoni pizza*.
And, with **more fiber** than regular pepperoni pizza.

d. Risk-avoidance attribute (less cholesterol)

OUR PEPPERONI PIZZA CAN BE SUMMED UP IN TWO WORDS:
LOW-CHOLESTEROL, WHOLESOME, NUTRITIOUS.

... SORRY, WE HAVE PROBLEMS STOPPING AT JUST TWO.

There just aren't enough adjectives to describe
the value of *Familia pepperoni pizza*.
And, with **less cholesterol** than regular pepperoni pizza.

e. Risk-avoidance attribute (less fat)

OUR PEPPERONI PIZZA CAN BE SUMMED UP IN TWO WORDS:
LOW-FAT, WHOLESOME, NUTRITIOUS.

... SORRY, WE HAVE PROBLEMS STOPPING AT JUST TWO.

There just aren't enough adjectives to describe
the value of *Familia pepperoni pizza*.
And, with **less fat** than regular pepperoni pizza.

4. Plain Yogurt Ads

a. Taste attribute

More delicious Yogurt. It's just better. familia

b. Benefit-seeking attribute (more calcium)

c. Benefit-seeking attribute (more fiber)

d. Risk-avoidance attribute (less cholesterol)

e. Risk-avoidance attribute (less fat)

\<Appendix B\>

Measurements of the Variables

Antecedent Predictor variables		
Model Variables	**Description (definition)**	**Operation**
Income & Education	Low income decreases the chance of receiving health education, so the highest rates of obesity occur among the population groups with the highest poverty rates and the least amount of education (Drenowski, et al. 2004, 2005).	"Including yourself, how many people live in your household?" "Thinking about members of your family living in this household, what is your combined annual income, meaning the total pre-tax income from all sources earned in the past year?" "What is the highest level of school you completed?"
Body Mass Index (BMI)	How extent individuals are physiologically under- or over-weighed (WHO, 2006)	"About how tall are you without shoes?" "About how much do you weigh without shoes?"
Health consciousness	The consumer's intrinsic motivation to maintain good health, reflecting his or her enduring involvement in health matters (Dutta-Bergman, 2004, 2005)	1. Living life in the best possible health is very important to me. 2. Eating right, exercising, and taking preventive measures will keep me healthy for life. 3. My health depends on how well I take care of myself. 4. I actively try to prevent disease and illness. 5. I do everything I can to stay healthy. 6. I try to avoid foods that are high in fat. 7. I try to avoid foods that are high in cholesterol. 8. I try to avoid foods with a high salt content. 9. I am concerned about how much sugar I eat. 10. I make a special effort to get enough fiber in my diet. 11. I use a lot of low calorie or calorie reduced products. 12. I try to select foods that are fortified with vitamins and minerals. 13. I am careful about what I eat in order to keep my weight under control. 14. I try to avoid foods that have additives in them. 15. I am concerned about getting enough calcium in my diet.
Body esteem	Self-evaluation of one's body or appearance (Mendelson, et al., 1996)	11. I wish I looked like someone else. 13. My looks upset me. 7. There are lots of things I'd change about my looks if I could. 9. I wish I looked better. 17. I feel ashamed of how I look. 21. I worry about the way I look. 23. I'm looking as nice as I'd like to. 6. I like what I see when I look in the mirror. 15. I'm pretty happy about the way I look. 1. I like what I look like in pictures. 22. I think I have a good body. 3. I am proud of my body.

		14. I'm as nice looking as most people.
		20. My looks help me to get dates.
		12. People my own age like my looks.
		5. I think my appearance would help me get a job.
		2. Other people consider me good looking.
		8. I am satisfied with my weight.
		10. I really like what I weigh.
		4. I am preoccupied with trying to change my body weight.
		18. Weighing myself depresses me.
		19. My weight makes me unhappy.
		16. I feel I weigh the right amount for my height.
Dieting (Lindberg, et al. 2006)	The extent of participants' diet behavior	"Are you currently dieting?"

Mediating variables

Model Variables	Description (definition)	Operation
Self-congruity	the congruence between a product's value-expressive attributes and a recipient's self-concept	
(1) Actual self-congruity	The congruence between the product user image and the actual self-image	(e.g.) "Eating the low-fat yogurt advertised is consistent with how I see myself." "The kind of person who typically eats the low-fat yogurt advertised is very much like me." "Eating the low-fat yogurt advertised reflects who I am." "My actual self-image is consistent with overall image of people who eat the low-fat yogurt advertised."
(2) Ideal self-congruity	The congruence between the product user image and the ideal self-image	(e.g.) "Eating the low-fat yogurt advertised is consistent with I would like to be." "The kind of person who typically eats the low-fat yogurt advertised is like how I would like to be." "Eating low-fat yogurt advertised reflects who I would like to be." "My ideal self-image is consistent with overall image of people who eat the low-fat yogurt advertised."
Functional congruity	the congruence between the beliefs of product utilitarian attributes and a recipient's referent attributes	If you were considering purchasing a yogurt, how important or unimportant would the following characteristics be to you? Listed below are possible attributes of a low fat yogurt. For each of these attributes, please indicate how likely or unlikely it is that a low yogurt would possess each attribute.

Dependent Criterion variables

Model Variables	Description (definition)	Operation
Attitude toward food ad (Aad) (Mitchell & Olson, 1981; Ramaparasad, 2001; Pollay & Mittal; 1993)	Consumers' response to ads by claim/food types combinations.	How do you feel about the ad that you just saw? a. Bad/Good b. Dislike/Like c. Uninteresting/Interesting d. Irritating/Not Irritating e. Unfavorable/Favorable
Attitude toward	Consumers' response to	How do you feel about the advertised product that

product (Ap) (modified from Aad)	products by HNR claims.	you just saw? a. Bad/Good b. Dislike/Like c. Uninteresting/Interesting d. Irritating/Not Irritating e. Unfavorable/Favorable
Attitude toward brand (Ab)	Consumers' response to specific brand in food ad stimuli. (only for the third stage experiment)	How do you feel about the advertised brand, ____? a. Bad/Good b. Dislike/Like c. Negative/Positive d. Unfavorable/Favorable)
Purchase intension (PI) (Bearden et al. 1984)		(e.g.) "How likely would you purchase advertised product? Please place a check mark on the space that best reflects your intentions." a. Unlikely/Likely b. Improbable/Probable c. Uncertain/Certain d. Definitely not/Definitely

<APPENDIX C>

SURVEY DESIGN FOR THE PRETEST 1

A. Questions for Selecting Evaluative Criteria

The following items refer to **1) how you evaluate several criteria when you choose food products, and 2) how frequently you buy such food products**. Please evaluate the primary product attributes of the following products using a 7-point scale ranging from **1 to 7. Click the numerical value (e.g., 1, 7, etc.) that best represents your feeling about the item statement.**

1. Pepperoni Pizza
a. In general, how risky do you consider the above product to be your health as a whole?
Not at all risky (1) (2) (3) (4) (5) (6) (7) Very risky

b. In general, how beneficial do you consider the above product to be your health as a whole?
Not at all beneficial (1) (2) (3) (4) (5) (6) (7) Very beneficial

c. How do you feel about the above product when you choose it?
a. Not very nutritious   (1) (2) (3) (4) (5) (6) (7) Very nutritious
b. Not very healthy   (1) (2) (3) (4) (5) (6) (7) Very healthy
c. Not very tasty   (1) (2) (3) (4) (5) (6) (7) Very tasty
b. Not very delicious   (1) (2) (3) (4) (5) (6) (7) Very delicious

d. In the least 30 days, how many times have you eaten/drunk the above food/beverage?
a. 10 or more
b. 8-9
c. 5-7
d. 3-4
e. 1-2
f. none

2. A Whole milk
a. In general, how risky do you consider the above product to be your health as a whole?
Not at all risky (1) (2) (3) (4) (5) (6) (7) Very risky

b. In general, how beneficial do you consider the above product to be your health as a whole?
Not at all beneficial (1) (2) (3) (4) (5) (6) (7) Very beneficial

c. How do you feel about the above product when you choose it?
a. Not very nutritious   (1) (2) (3) (4) (5) (6) (7) Very nutritious
b. Not very healthy   (1) (2) (3) (4) (5) (6) (7) Very healthy
c. Not very tasty   (1) (2) (3) (4) (5) (6) (7) Very tasty

b. Not very delicious   (1) (2) (3) (4) (5) (6) (7) Very delicious

d. In the least 30 days, how many times have you eaten/drunk the above food/beverage?
a. 10 or more
b. 8-9
c. 5-7
d. 3-4
e. 1-2
f. none

3. Plain Yogurt

a. In general, how risky do you consider the above product to be your health as a whole?
Not at all risky (1) (2) (3) (4) (5) (6) (7) Very risky

b. In general, how beneficial do you consider the above product to be your health as a whole?
Not at all beneficial (1) (2) (3) (4) (5) (6) (7) Very beneficial

c. How do you feel about the above product when you choose it?
a. Not very nutritious   (1) (2) (3) (4) (5) (6) (7) Very nutritious
b. Not very healthy   (1) (2) (3) (4) (5) (6) (7) Very healthy
c. Not very tasty   (1) (2) (3) (4) (5) (6) (7) Very tasty
b. Not very delicious   (1) (2) (3) (4) (5) (6) (7) Very delicious

d. In the least 30 days, how many times have you eaten/drunk the above food/beverage?
a. 10 or more
b. 8-9
c. 5-7
d. 3-4
e. 1-2
f. none

d. In the least 30 days, how many times have you eaten/drunk the above food/beverage?
a. 10 or more
b. 8-9
c. 5-7
d. 3-4
e. 1-2
f. none

4. Whole Wheat Bread

a. In general, how risky do you consider the above product to be your health as a whole?
Not at all risky (1) (2) (3) (4) (5) (6) (7) Very risky

b. In general, how beneficial do you consider the above product to be your health as a whole?
Not at all beneficial (1) (2) (3) (4) (5) (6) (7) Very beneficial

c. How do you feel about the above product when you choose it?
a. Not very nutritious   (1) (2) (3) (4) (5) (6) (7) Very nutritious
b. Not very healthy   (1) (2) (3) (4) (5) (6) (7) Very healthy
c. Not very tasty   (1) (2) (3) (4) (5) (6) (7) Very tasty
b. Not very delicious   (1) (2) (3) (4) (5) (6) (7) Very delicious

d. In the least 30 days, how many times have you eaten/drunk the above food/beverage?
a. 10 or more
b. 8-9
c. 5-7
d. 3-4
e. 1-2
f. none

5. Fried Chicken
a. In general, how risky do you consider the above product to be your health as a whole?
Not at all risky (1) (2) (3) (4) (5) (6) (7) Very risky

b. In general, how beneficial do you consider the above product to be your health as a whole?
Not at all beneficial (1) (2) (3) (4) (5) (6) (7) Very beneficial

c. How do you feel about the above product when you choose it?
a. Not very nutritious   (1) (2) (3) (4) (5) (6) (7) Very nutritious
b. Not very healthy   (1) (2) (3) (4) (5) (6) (7) Very healthy
c. Not very tasty   (1) (2) (3) (4) (5) (6) (7) Very tasty
b. Not very delicious   (1) (2) (3) (4) (5) (6) (7) Very delicious

d. In the least 30 days, how many times have you eaten/drunk the above food/beverage?
a. 10 or more
b. 8-9
c. 5-7
d. 3-4
e. 1-2
f. none

6. Grilled Chicken
a. In general, how risky do you consider the above product to be your health as a whole?
Not at all risky (1) (2) (3) (4) (5) (6) (7) Very risky

b. In general, how beneficial do you consider the above product to be your health as a whole?
Not at all beneficial (1) (2) (3) (4) (5) (6) (7) Very beneficial

c. How do you feel about the above product when you choose it?
a. Not very nutritious   (1) (2) (3) (4) (5) (6) (7) Very nutritious
b. Not very healthy   (1) (2) (3) (4) (5) (6) (7) Very healthy
c. Not very tasty   (1) (2) (3) (4) (5) (6) (7) Very tasty
b. Not very delicious   (1) (2) (3) (4) (5) (6) (7) Very delicious

d. In the least 30 days, how many times have you eaten/drunk the above food/beverage?
a. 10 or more
b. 8-9
c. 5-7
d. 3-4
e. 1-2
f. none

7. Multigrain Cereal
a. In general, how risky do you consider the above product to be your health as a whole?
Not at all risky (1) (2) (3) (4) (5) (6) (7) Very risky

b. In general, how beneficial do you consider the above product to be your health as a whole?
Not at all beneficial (1) (2) (3) (4) (5) (6) (7) Very beneficial

c. How do you feel about the above product when you choose it?
a. Not very nutritious   (1) (2) (3) (4) (5) (6) (7) Very nutritious
b. Not very healthy   (1) (2) (3) (4) (5) (6) (7) Very healthy
c. Not very tasty   (1) (2) (3) (4) (5) (6) (7) Very tasty
b. Not very delicious   (1) (2) (3) (4) (5) (6) (7) Very delicious

d. In the least 30 days, how many times have you eaten/drunk the above food/beverage?
a. 10 or more
b. 8-9
c. 5-7
d. 3-4
e. 1-2
f. none

8. French Fries
a. In general, how risky do you consider the above product to be your health as a whole?
Not at all risky (1) (2) (3) (4) (5) (6) (7) Very risky

b. In general, how beneficial do you consider the above product to be your health as a whole?
Not at all beneficial (1) (2) (3) (4) (5) (6) (7) Very beneficial

c. How do you feel about the above product when you choose it?
a. Not very nutritious   (1) (2) (3) (4) (5) (6) (7) Very nutritious
b. Not very healthy   (1) (2) (3) (4) (5) (6) (7) Very healthy
c. Not very tasty   (1) (2) (3) (4) (5) (6) (7) Very tasty
b. Not very delicious   (1) (2) (3) (4) (5) (6) (7) Very delicious

d. In the least 30 days, how many times have you eaten/drunk the above food/beverage?
a. 10 or more
b. 8-9
c. 5-7
d. 3-4
e. 1-2
f. none

9. Dried Fruits
a. In general, how risky do you consider the above product to be your health as a whole?
Not at all risky (1) (2) (3) (4) (5) (6) (7) Very risky

b. In general, how beneficial do you consider the above product to be your health as a whole?
Not at all beneficial (1) (2) (3) (4) (5) (6) (7) Very beneficial

c. How do you feel about the above product when you choose it?
a. Not very nutritious   (1) (2) (3) (4) (5) (6) (7) Very nutritious
b. Not very healthy   (1) (2) (3) (4) (5) (6) (7) Very healthy
c. Not very tasty   (1) (2) (3) (4) (5) (6) (7) Very tasty
b. Not very delicious   (1) (2) (3) (4) (5) (6) (7) Very delicious

d. In the least 30 days, how many times have you eaten/drunk the above food/beverage?
a. 10 or more
b. 8-9
c. 5-7
d. 3-4
e. 1-2
f. none

10. Chocolate Chipped Bagel
a. In general, how risky do you consider the above product to be your health as a whole?
Not at all risky (1) (2) (3) (4) (5) (6) (7) Very risky

b. In general, how beneficial do you consider the above product to be your health as a whole?
Not at all beneficial (1) (2) (3) (4) (5) (6) (7) Very beneficial

c. How do you feel about the above product when you choose it?
a. Not very nutritious   (1) (2) (3) (4) (5) (6) (7) Very nutritious
b. Not very healthy   (1) (2) (3) (4) (5) (6) (7) Very healthy
c. Not very tasty   (1) (2) (3) (4) (5) (6) (7) Very tasty
b. Not very delicious   (1) (2) (3) (4) (5) (6) (7) Very delicious

d. In the least 30 days, how many times have you eaten/drunk the above food/beverage?
a. 10 or more
b. 8-9
c. 5-7
d. 3-4
e. 1-2
f. none

11. Whole Wheat Bagel
a. In general, how risky do you consider the above product to be your health as a whole?
Not at all risky (1) (2) (3) (4) (5) (6) (7) Very risky

b. In general, how beneficial do you consider the above product to be your health as a whole?
Not at all beneficial (1) (2) (3) (4) (5) (6) (7) Very beneficial

c. How do you feel about the above product when you choose it?
a. Not very nutritious   (1) (2) (3) (4) (5) (6) (7) Very nutritious
b. Not very healthy   (1) (2) (3) (4) (5) (6) (7) Very healthy
c. Not very tasty   (1) (2) (3) (4) (5) (6) (7) Very tasty
b. Not very delicious   (1) (2) (3) (4) (5) (6) (7) Very delicious

d. In the least 30 days, how many times have you eaten/drunk the above food/beverage?
a. 10 or more
b. 8-9
c. 5-7
d. 3-4
e. 1-2
f. none

12. Chocolate Ice Cream
a. In general, how risky do you consider the above product to be your health as a whole?
Not at all risky (-3) (-2) (-1) (0) (+1) (+2) (+3) Very risky

b. In general, how beneficial do you consider the above product to be your health as a whole?

Not at all beneficial (-3) (-2) (-1) (0) (+1) (+2) (+3) Very beneficial

c. How do you feel about the above product when you choose it?
a. Not very nutritious   (-3) (-2) (-1) (0) (+1) (+2) (+3) Very nutritious   b. Not very
healthy   (-3) (-2) (-1) (0) (+1) (+2) (+3) Very healthy
c. Not very tasty   (-3) (-2) (-1) (0) (+1) (+2) (+3) Very tasty
b. Not very delicious   (-3) (-2) (-1) (0) (+1) (+2) (+3) Very delicious

d. In the least 30 days, how many times have you eaten/drunk the above food/beverage?
a. 10 or more
b. 8-9
c. 5-7
d. 3-4
e. 1-2
f. none

13. Chocolate Chip Cookie
a. In general, how risky do you consider the above product to be your health as a whole?
Not at all risky (1) (2) (3) (4) (5) (6) (7) Very risky

b. In general, how beneficial do you consider the above product to be your health as a whole?
Not at all beneficial (1) (2) (3) (4) (5) (6) (7) Very beneficial

c. How do you feel about the above product when you choose it?
a. Not very nutritious   (1) (2) (3) (4) (5) (6) (7) Very nutritious
b. Not very healthy   (1) (2) (3) (4) (5) (6) (7) Very healthy
c. Not very tasty   (1) (2) (3) (4) (5) (6) (7) Very tasty
b. Not very delicious   (1) (2) (3) (4) (5) (6) (7) Very delicious

d. In the least 30 days, how many times have you eaten/drunk the above food/beverage?
a. 10 or more
b. 8-9
c. 5-7
d. 3-4
e. 1-2
f. none

14. Multi Grain Granola bar
a. In general, how risky do you consider the above product to be your health as a whole?
Not at all risky (1) (2) (3) (4) (5) (6) (7) Very risky

b. In general, how beneficial do you consider the above product to be your health as a whole?
Not at all beneficial (1) (2) (3) (4) (5) (6) (7) Very beneficial

c. How do you feel about the above product when you choose it?
a. Not very nutritious   (1) (2) (3) (4) (5) (6) (7) Very nutritious
b. Not very healthy   (1) (2) (3) (4) (5) (6) (7) Very healthy
c. Not very tasty   (1) (2) (3) (4) (5) (6) (7) Very tasty
b. Not very delicious   (1) (2) (3) (4) (5) (6) (7) Very delicious

d. In the least 30 days, how many times have you eaten/drunk the above food/beverage?
a. 10 or more
b. 8-9
c. 5-7
d. 3-4
e. 1-2
f. none

15. Ranch Dressing
a. In general, how risky do you consider the above product to be your health as a whole?
Not at all risky (1) (2) (3) (4) (5) (6) (7) Very risky

b. In general, how beneficial do you consider the above product to be your health as a whole?
Not at all beneficial (1) (2) (3) (4) (5) (6) (7) Very beneficial

c. How do you feel about the above product when you choose it?
a. Not very nutritious   (1) (2) (3) (4) (5) (6) (7) Very nutritious
b. Not very healthy   (1) (2) (3) (4) (5) (6) (7) Very healthy
c. Not very tasty   (1) (2) (3) (4) (5) (6) (7) Very tasty
b. Not very delicious   (1) (2) (3) (4) (5) (6) (7) Very delicious

d. In the least 30 days, how many times have you eaten/drunk the above food/beverage?
a. 10 or more
b. 8-9
c. 5-7
d. 3-4
e. 1-2
f. none

B. **Food Selection Evaluative Criteria**

The following set of question is designed to elicit your evaluative criteria when purchasing food products.

Please think about yourself, and **indicate how much the following criteria are important to you when purchasing a food product on a typical day.**

Factors	It is important to me that the food I purchase on a typical day:
	1 (Not at all Important) ~ 4 (Moderately Important) ~7 (Very Important)
Health	1. Contains a lot of vitamins and minerals
	2. Keeps me healthy
	3. Is nutritious
	4. Is high in protein
	5. Is good for my skin/teeth/hair/nails etc
	6. Is high in fiber and roughage
Mood	7. Helps me cope with stress
	8. Helps me to cope with life
	9. Helps me relax
	10. Keeps me awake/alert
	11. Cheers me up
	12. Makes me feel good
Convenience	13. s easy to prepare
	14. Can be cooked very simply
	15. Takes no time to prepare
	16. Can be bought in shops close to where I live or work
	17. Is easily available in shops and supermarkets
Sensory Appeal	18. Smells nice
	19. Looks nice
	20. Has a pleasant texture
	21. Tastes good
Natural Content	22. Contains no additives
	23. Contains natural ingredients
	24. Contains no artificial ingredients
Price	25. Is not expensive
	26. Is cheap
	27. Is good value for money
Weight Control	28. Is low in calories
	29. Helps me control my weight
	30. Is low in fat
Familiarity	31. Is what I usually eat
	32. Is familiar
	33. Is like the food I ate when I was a child
Ethical Concern	34. Comes from countries I approve of politically
	35. Has the country of origin clearly marked
	36. Is packaged in an environmentally friendly way

C. Personal information

1. What was your age on your last birthday (please provide in numbers; e.g., if you're 20 years old, 20)? _____
2. Your sex is:
     a. male
     b. female

SURVEY DESIGN FOR PRETEST 2 (Example- Set 1)

A. Food Ad Evaluation Questions

In this section, I'd like to get your opinions about ten food ads. Please evaluate each of the following product ads. Indicate your perceptions of the listed product attributes by marking each of the 7-point scales under each ad.

1. Yogurt Ad with Calcium

a. Compared with a <u>regular plain yogurt product</u>, please indicate how likely or unlikely is that the <u>advertised product</u> possesses each of listed attributes.

	1 Much lower than regular product	2	3	4 Same as regular product	5	6	7 Much more than regular product
Calcium	☉	☐	☐	☐	☐	☐	☐

	1	2	3	4	5	6	7
Fiber	○	●	○	○	○	○	○
Cholesterol	○	●	○	○	○	○	○
Fat	○	●	○	○	○	○	○
Protein	○	○	○	○	○	○	○
Vitamins	○	○	○	○	○	○	○
Sugar	○	○	○	○	○	○	○
Calories	○	○	○	○	○	○	○

b. Listed below are possible attributes of the food product advertised above.
Please indicate how likely or unlikely is it that the above advertised product possesses each of the listed attributes.

	1	2	3	4	5	6	7	
Not very nutritious	○	○	○	○	○	○	○	Very nutritious
Not very healthy	○	○	○	○	○	○	○	Very healthy
Not very tasty	○	○	○	○	○	○	○	Very tasty
Not very delicious	○	○	○	○	○	○	○	Very delicious
Not at all risky for health	○	○	○	○	○	○	○	Very risky for health
Not at all beneficial for health	○	○	○	○	○	○	○	Very beneficial for health

c. Compared with a regular plain yogurt product, how beneficial or risky do you think the above advertised product is to your overall health?

- benefit:

1 Much less beneficial	2	3	4 Same as regular product	5	6	7 Much more beneficial
○	○	○	○	○	○	○

- risk:

1 Much less risky	2	3	4 Same as regular product	5	6	7 Much more risky
○	○	○	○	○	○	○

d. Have you seen this brand before?
a. Yes
b. No

2. Multigrain Cereal Ad with Taste

a. Compared with a <u>regular multigrain cereal product</u>, please indicate how likely or unlikely is that the <u>advertised product</u> possesses each of listed attributes.

	1 Much lower than regular product	2	3	4 Same as regular product	5	6	7 Much more than regular product
Calcium	⊙	☐	☐	☐	☐	☐	☐

Fiber	☐	☉	☐	☐	☐	☐	☐
Cholesterol	☐	☉	☐	☐	☐	☐	☐
Fat	☐	☉	☐	☐	☐	☐	☐
Protein	☐	☐	☐	☐	☐	☐	☐
Vitamins	☐	☐	☐	☐	☐	☐	☐
Sugar	☐	☐	☐	☐	☐	☐	☐
Calories	☐	☐	☐	☐	☐	☐	☐

b. Listed below are possible attributes of the food product advertised above. Please indicate how likely or unlikely is it that the above advertised product possesses each of the listed attributes.

Not very nutritious	☐	☐	☐	☐	☐	☐	☐	Very nutritious
Not very healthy	☐	☐	☐	☐	☐	☐	☐	Very healthy
Not very tasty	☐	☐	☐	☐	☐	☐	☐	Very tasty
Not very delicious	☐	☐	☐	☐	☐	☐	☐	Very delicious
Not at all risky for health	☐	☐	☐	☐	☐	☐	☐	Very risky for health
Not at all beneficial for health	☐	☐	☐	☐	☐	☐	☐	Very beneficial for health

c. Compared with a <u>regular multigrain cereal product</u>, <u>how beneficial or risky</u> do you think the above advertised product is to your overall health?

- benefit:

1 Much less beneficial	2	3	4 Same as regular product	5	6	7 Much more beneficial
☐	☐	☐	☐	☐	☐	☐

- risk:

1 Much less risky	2	3	4 Same as regular product	5	6	7 Much more risky
☐	☐	☐	☐	☐	☐	☐

d. Have you seen this brand before?
a. Yes
b. No

3. Chocolate Chip Cookie Ad with Vitamins

a. Compared with a <u>regular chocolate chip cookie product</u>, please indicate how likely or unlikely is that the <u>advertised product</u> possesses each of listed attributes.

	1 Much lower than regular product	2	3	4 Same as regular product	5	6	7 Much more than regular product
Calcium	●	○	○	○	○	○	○
Fiber	○	●	○	○	○	○	○
Cholesterol	○	●	○	○	○	○	○
Fat	○	●	○	○	○	○	○
Protein	○	○	○	○	○	○	○
Vitamins	○	○	○	○	○	○	○
Sugar	○	○	○	○	○	○	○

Calories   ☐   ☐   ☐   ☐   ☐   ☐   ☐

b. Listed below are possible attributes of the food product advertised above. Please indicate how likely or unlikely is it that the above advertised product possesses each of the listed attributes.

Not very nutritious	☐	☐	☐	☐	☐	☐	☐	Very nutritious
Not very healthy	☐	☐	☐	☐	☐	☐	☐	Very healthy
Not very tasty	☐	☐	☐	☐	☐	☐	☐	Very tasty
Not very delicious	☐	☐	☐	☐	☐	☐	☐	Very delicious
Not at all risky for health	☐	☐	☐	☐	☐	☐	☐	Very risky for health
Not at all beneficial for health	☐	☐	☐	☐	☐	☐	☐	Very beneficial for health

c. Compared with a <u>regular chocolate chip cookie product</u>, <u>how beneficial or risky</u> do you think the above advertised product is to your overall health?

- benefit:

1 Much less beneficial	2	3	4 Same as regular product	5	6	7 Much more beneficial
☐	☐	☐	☐	☐	☐	☐

- risk:

1 Much less risky	2	3	4 Same as regular product	5	6	7 Much more risky
☐	☐	☐	☐	☐	☐	☐

d. Have you seen this brand before?
a. Yes
b. No

4. Pepperoni Pizza Ad with Taste

OUR PEPPERONI PIZZA CAN BE SUMMED UP IN TWO WORDS:
TASTY, FLAVORFUL, DELICIOUS.

... SORRY, WE HAVE PROBLEMS STOPPING AT JUST TWO.

There just aren't enough adjectives to describe
the value of *Familia pepperoni pizza.*

a. Compared with a <u>regular pepperoni pizza product</u>, please indicate how likely or unlikely is that the <u>advertised product</u> possesses each of listed attributes.

	1 Much lower than regular product	2	3	4 Same as regular product	5	6	7 Much more than regular product
Calcium	◉	◻	◻	◻	◻	◻	◻

Fiber	☐	☉	☐	☐	☐	☐	☐
Cholesterol	☐	☉	☐	☐	☐	☐	☐
Fat	☐	☉	☐	☐	☐	☐	☐
Protein	☐	☐	☐	☐	☐	☐	☐
Vitamins	☐	☐	☐	☐	☐	☐	☐
Sugar	☐	☐	☐	☐	☐	☐	☐
Calories	☐	☐	☐	☐	☐	☐	☐

b. Listed below are possible attributes of the food product advertised above.
Please indicate how likely or unlikely is it that the above advertised product possesses each of the listed attributes.

Not very nutritious	☐	☐	☐	☐	☐	☐	☐	Very nutritious
Not very healthy	☐	☐	☐	☐	☐	☐	☐	Very healthy
Not very tasty	☐	☐	☐	☐	☐	☐	☐	Very tasty
Not very delicious	☐	☐	☐	☐	☐	☐	☐	Very delicious
Not at all risky for health	☐	☐	☐	☐	☐	☐	☐	Very risky for health
Not at all beneficial for health	☐	☐	☐	☐	☐	☐	☐	Very beneficial for health

c. Compared with a <u>regular pepperoni pizza product</u>, <u>how beneficial or risky</u> do you think the above advertised product is to your overall health?

- benefit:

1 Much less beneficial	2	3	4 Same as regular product	5	6	7 Much more beneficial
☐	☐	☐	☐	☐	☐	☐

- risk:

1 Much less risky	2	3	4 Same as regular product	5	6	7 Much more risky
☐	☐	☐	☐	☐	☐	☐

d. Have you seen this brand before?
a. Yes
b. No

5. Yogurt Ad with Fiber

a. Compared with a <u>regular plain yogurt product</u>, please indicate how likely or unlikely is that the <u>advertised product</u> possesses each of listed attributes.

	1 Much lower than regular product	2	3	4 Same as regular product	5	6	7 Much more than regular product
Calcium	◉	☐	☐	☐	☐	☐	☐
Fiber	☐	◉	☐	☐	☐	☐	☐
Cholesterol	☐	◉	☐	☐	☐	☐	☐
Fat	☐	◉	☐	☐	☐	☐	☐
Protein	☐	☐	☐	☐	☐	☐	☐
Vitamins	☐	☐	☐	☐	☐	☐	☐

Sugar   ☐   ☐   ☐   ☐   ☐   ☐   ☐

Calories   ☐   ☐   ☐   ☐   ☐   ☐   ☐

b. Listed below are possible attributes of the food product advertised above. Please indicate how likely or unlikely is it that the above advertised product possesses each of the listed attributes.

Not very nutritious	☐	☐	☐	☐	☐	☐	☐	Very nutritious
Not very healthy	☐	☐	☐	☐	☐	☐	☐	Very healthy
Not very tasty	☐	☐	☐	☐	☐	☐	☐	Very tasty
Not very delicious	☐	☐	☐	☐	☐	☐	☐	Very delicious
Not at all risky for health	☐	☐	☐	☐	☐	☐	☐	Very risky for health
Not at all beneficial for health	☐	☐	☐	☐	☐	☐	☐	Very beneficial for health

c. Compared with a <u>regular plain yogurt product</u>, <u>how beneficial or risky</u> do you think the above advertised product is to your overall health?

- benefit:

1 Much less beneficial	2	3	4 Same as regular product	5	6	7 Much more beneficial
☐	☐	☐	☐	☐	☐	☐

- risk:

1 Much less risky	2	3	4 Same as regular product	5	6	7 Much more risky
☐	☐	☐	☐	☐	☐	☐

d. Have you seen this brand before?
a. Yes
b. No

6. Multigrain Cereal Ad with Vitamins

a. Compared with a <u>regular multigrain cereal product</u>, please indicate how likely or unlikely is that the <u>advertised product</u> possesses each of listed attributes.

1 Much lower than regular product	2	3	4 Same as regular product	5	6	7 Much more than regular product

Calcium	◉	○	○	○	○	○	○
Fiber	○	◉	○	○	○	○	○
Cholesterol	○	◉	○	○	○	○	○
Fat	○	◉	○	○	○	○	○
Protein	○	○	○	○	○	○	○
Vitamins	○	○	○	○	○	○	○
Sugar	○	○	○	○	○	○	○
Calories	○	○	○	○	○	○	○

b. Listed below are possible attributes of the food product advertised above.
Please indicate how likely or unlikely is it that the above advertised product possesses each of the listed attributes.

Not very nutritious	○	○	○	○	○	○	○	Very nutritious
Not very healthy	○	○	○	○	○	○	○	Very healthy
Not very tasty	○	○	○	○	○	○	○	Very tasty
Not very delicious	○	○	○	○	○	○	○	Very delicious
Not at all risky for health	○	○	○	○	○	○	○	Very risky for health
Not at all beneficial for health	○	○	○	○	○	○	○	Very beneficial for health

c. Compared with a <u>regular multigrain cereal product</u>, <u>how beneficial or risky</u> do you think the above advertised product is to your overall health?

- benefit:

1 Much less beneficial	2	3	4 Same as regular product	5	6	7 Much more beneficial
○	○	○	○	○	○	○

- risk:

1 Much less risky	2	3	4 Same as regular product	5	6	7 Much more risky
○	○	○	○	○	○	○

d. Have you seen this brand before?
a. Yes
b. No

7. Chocolate Chip Cookie Ad with Low Sugar

a. Compared with a <u>regular chocolate chip cookie product</u>, please indicate how likely or unlikely is that the <u>advertised product</u> possesses each of listed attributes.

	1 Much lower than regular product	2	3	4 Same as regular product	5	6	7 Much more than regular product
Calcium	◉	○	○	○	○	○	○
Fiber	○	◉	○	○	○	○	○
Cholesterol	○	◉	○	○	○	○	○
Fat	○	◉	○	○	○	○	○
Protein	○	○	○	○	○	○	○

Vitamins	☐	☐	☐	☐	☐	☐	☐
Sugar	☐	☐	☐	☐	☐	☐	☐
Calories	☐	☐	☐	☐	☐	☐	☐

b. Listed below are possible attributes of the food product advertised above. Please indicate how likely or unlikely is it that the above advertised product possesses each of the listed attributes.

Not very nutritious	☐	☐	☐	☐	☐	☐	☐	Very nutritious
Not very healthy	☐	☐	☐	☐	☐	☐	☐	Very healthy
Not very tasty	☐	☐	☐	☐	☐	☐	☐	Very tasty
Not very delicious	☐	☐	☐	☐	☐	☐	☐	Very delicious
Not at all risky for health	☐	☐	☐	☐	☐	☐	☐	Very risky for health
Not at all beneficial for health	☐	☐	☐	☐	☐	☐	☐	Very beneficial for health

c. Compared with a <u>regular chocolate chip cookie product</u>, <u>how beneficial or risky</u> do you think the above advertised product is to your overall health?

- benefit:

1 Much less beneficial	2	3	4 Same as regular product	5	6	7 Much more beneficial
☐	☐	☐	☐	☐	☐	☐

- risk:

1 Much less risky	2	3	4 Same as regular product	5	6	7 Much more risky
☐	☐	☐	☐	☐	☐	☐

d. Have you seen this brand before?
a. Yes
b. No

8. Pepperoni Pizza Ad with Low Cholesterol

OUR PEPPERONI PIZZA CAN BE SUMMED UP IN TWO WORDS:
LOW-CHOLESTEROL, WHOLESOME, NUTRITIOUS.

... SORRY, WE HAVE PROBLEMS STOPPING AT JUST TWO.

There just aren't enough adjectives to describe
the value of *Familia pepperoni pizza*.
And, with **less cholesterol** than regular pepperoni pizza.

a. Compared with a <u>regular pepperoni pizza product</u>, please indicate how likely or unlikely is that the <u>advertised product</u> possesses each of listed attributes.

1 Much lower than regular product	2	3	4 Same as regular product	5	6	7 Much more than regular product

Calcium	●	○	○	○	○	○	○
Fiber	○	●	○	○	○	○	○
Cholesterol	○	●	○	○	○	○	○
Fat	○	●	○	○	○	○	○
Protein	○	○	○	○	○	○	○
Vitamins	○	○	○	○	○	○	○
Sugar	○	○	○	○	○	○	○
Calories	○	○	○	○	○	○	○

b. Listed below are possible attributes of the food product advertised above.
Please indicate how likely or unlikely is it that the above advertised product possesses each of the listed attributes.

Not very nutritious	○	○	○	○	○	○	○	Very nutritious
Not very healthy	○	○	○	○	○	○	○	Very healthy
Not very tasty	○	○	○	○	○	○	○	Very tasty
Not very delicious	○	○	○	○	○	○	○	Very delicious
Not at all risky for health	○	○	○	○	○	○	○	Very risky for health
Not at all beneficial for health	○	○	○	○	○	○	○	Very beneficial for health

c. Compared with a <u>regular pepperoni pizza product</u>, <u>how beneficial or risky</u> do you think the above advertised product is to your overall health?

- benefit:

1 Much less beneficial	2	3	4 Same as regular product	5	6	7 Much more beneficial
○	○	○	○	○	○	○

- risk:

1 Much less risky	2	3	4 Same as regular product	5	6	7 Much more risky
○	○	○	○	○	○	○

d. Have you seen this brand before?
a. Yes
b. No

9. Yogurt Ad with Low Cholesterol

a. Compared with a <u>regular plain yogurt product</u>, please indicate how likely or unlikely is that the <u>advertised product</u> possesses each of listed attributes.

	1 Much lower than regular product	2	3	4 Same as regular product	5	6	7 Much more than regular product
Calcium	⦿	▢	▢	▢	▢	▢	▢
Fiber	▢	⦿	▢	▢	▢	▢	▢
Cholesterol	▢	⦿	▢	▢	▢	▢	▢
Fat	▢	⦿	▢	▢	▢	▢	▢

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Protein	☐	☐	☐	☐	☐	☐	☐
Vitamins	☐	☐	☐	☐	☐	☐	☐
Sugar	☐	☐	☐	☐	☐	☐	☐
Calories	☐	☐	☐	☐	☐	☐	☐

b. Listed below are possible attributes of the food product advertised above. Please indicate how likely or unlikely is it that the above advertised product possesses each of the listed attributes.

Not very nutritious	☐	☐	☐	☐	☐	☐	☐	Very nutritious
Not very healthy	☐	☐	☐	☐	☐	☐	☐	Very healthy
Not very tasty	☐	☐	☐	☐	☐	☐	☐	Very tasty
Not very delicious	☐	☐	☐	☐	☐	☐	☐	Very delicious
Not at all risky for health	☐	☐	☐	☐	☐	☐	☐	Very risky for health
Not at all beneficial for health	☐	☐	☐	☐	☐	☐	☐	Very beneficial for health

c. Compared with a <u>regular plain yogurt product</u>, <u>how beneficial or risky</u> do you think the above advertised product is to your overall health?

- benefit:

1 Much less beneficial	2	3	4 Same as regular product	5	6	7 Much more beneficial
☐	☐	☐	☐	☐	☐	☐

- risk:

1 Much less risky	2	3	4 Same as regular product	5	6	7 Much more risky
☐	☐	☐	☐	☐	☐	☐

d. Have you seen this brand before?
a. Yes
b. No

10. Chocolate Chip Cookie Ad with Low Calories

a. Compared with a <u>regular chocolate chip cookie product</u>, please indicate how likely or unlikely is that the <u>advertised product</u> possesses each of listed attributes.

	1 Much lower than regular product	2	3	4 Same as regular product	5	6	7 Much more than regular product
Calcium	●	○	○	○	○	○	○
Fiber	○	●	○	○	○	○	○
Cholesterol	○	●	○	○	○	○	○
Fat	○	●	○	○	○	○	○
Protein	○	○	○	○	○	○	○

Vitamins	☐	☐	☐	☐	☐	☐	☐
Sugar	☐	☐	☐	☐	☐	☐	☐
Calories	☐	☐	☐	☐	☐	☐	☐

b. Listed below are possible attributes of the food product advertised above. Please indicate how likely or unlikely is it that the above advertised product possesses each of the listed attributes.

Not very nutritious	☐	☐	☐	☐	☐	☐	☐	Very nutritious
Not very healthy	☐	☐	☐	☐	☐	☐	☐	Very healthy
Not very tasty	☐	☐	☐	☐	☐	☐	☐	Very tasty
Not very delicious	☐	☐	☐	☐	☐	☐	☐	Very delicious
Not at all risky for health	☐	☐	☐	☐	☐	☐	☐	Very risky for health
Not at all beneficial for health	☐	☐	☐	☐	☐	☐	☐	Very beneficial for health

c. Compared with a <u>regular chocolate chip cookie product</u>, <u>how beneficial or risky</u> do you think the above advertised product is to your overall health?

- benefit:

1 Much less beneficial	2	3	4 Same as regular product	5	6	7 Much more beneficial
☐	☐	☐	☐	☐	☐	☐

- risk:

1 Much less risky	2	3	4 Same as regular product	5	6	7 Much more risky
☐	☐	☐	☐	☐	☐	☐

d. Have you seen this brand before?
a. Yes
b. No

B. Frequency of Eating Food Products.
Have you eaten the following food categories <u>in the last six months?</u>

	Yes	No
Plain Yogurt	☐	☐
Pepperoni Pizza	☐	☐

	Yes	No
Multigrain Cereal	☐	☐
Chocolate Chip Cookie	☐	☐

C. Personal information

1. What was your age on your last birthday (please provide in numbers; e.g., if you're 20 years old, 20)?

2. Your sex is:

- ☐ Male
- ☐ Female

D. THE FOLLOWING INFORMATION WILL BE USED ONLY FOR EXTRA CREDIT ASSIGNMENT. **If you are not UGA student, you don't have to answer the following questions.**

1. What is your name?

First Name_____
Last Name_____

2. What is your student ID number (the last 10-digits on your UGA card, e.g., 8102122345)?

_____

3. Which class do you wish to get extra credit for?

Please specify:_____

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<div align="center">

Thank you very much,
This concludes the survey. Pressing the "Done" button will take you back to the SurveyMonkey main page.

</div>

SURVEY DESIGN FOR THE MAIN EXPERIMENT (Example- Set 1)

I. THE FOLLOWING SET OF QUESTIONS ASKS ABOUT YOUR LIFESTYLES

1. Have you eaten foods from the following food categories <u>in the last six months?</u>

	Yes	No
Plain Yogurt	☐	☐
Pepperoni Pizza	☐	☐
Multigrain Cereal	☐	☐
Chocolate Chip Cookie	☐	☐

2. If you were considering purchasing the following products, how important or unimportant would the following characteristics be to you?

1) Plain Yogurt

	Not at all Important						Very Important
Taste	1	2	3	4	5	6	7
Health	1	2	3	4	5	6	7
Weight control	1	2	3	4	5	6	7
Convenience	1	2	3	4	5	6	7
Price	1	2	3	4	5	6	7
Natural content	1	2	3	4	5	6	7

2) Pepperoni Pizza

	Not at all Important						Very Important
Taste	1	2	3	4	5	6	7
Health	1	2	3	4	5	6	7
Weight control	1	2	3	4	5	6	7
Convenience	1	2	3	4	5	6	7
Price	1	2	3	4	5	6	7
Natural content	1	2	3	4	5	6	7

3) Multigrain Cereal

	Not at all Important						Very Important
Taste	1	2	3	4	5	6	7
Health	1	2	3	4	5	6	7

Weight control	1	2	3	4	5	6	7
Convenience	1	2	3	4	5	6	7
Price	1	2	3	4	5	6	7
Natural content	1	2	3	4	5	6	7

4) Chocolate Chip Cookie

	Not at all Important						Very Important
Taste	1	2	3	4	5	6	7
Health	1	2	3	4	5	6	7
Weight control	1	2	3	4	5	6	7
Convenience	1	2	3	4	5	6	7
Price	1	2	3	4	5	6	7
Natural content	1	2	3	4	5	6	7

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II. FOOD AD EVALUATION

Familia **Foods Inc. is a confectionery, food and beverage company. The company plans to launch several food products in the U.S. market. In this section, the research group of Familia's advertising agency is soliciting feedback from consumers on early-stage advertisements. The advertisements might eventually appear in magazines and newspapers across the U.S. The** *Familia* **brand name will be associated with a number of sub-brands.**

- **Have you seen this brand before?**
  a. Yes
  b. No

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A. Yogurt ad with taste appeal (YogT)

IN THIS SECTION, I'D LIKE TO GET YOUR OPINIONS ABOUT A SERIES OF ADS FOR FOOD PRODUCTS. Please evaluate the ads for the following products.

1. Have you seen the advertisement before?

a. Yes

b. No

2. Compared with a <u>regular plain yogurt product</u>, please indicate how likely or unlikely it is the <u>advertised product</u> possesses each of the listed attributes.

	1 Much lower than regular product	2	3	4 Same as regular product	5	6	7 Much more than regular product
Calcium	◉	▢	▢	▢	▢	▢	▢
Fiber	▢	◉	▢	▢	▢	▢	▢
Cholesterol	▢	◉	▢	▢	▢	▢	▢
Fat	▢	◉	▢	▢	▢	▢	▢
Protein	▢	▢	▢	▢	▢	▢	▢
Vitamins	▢	▢	▢	▢	▢	▢	▢
Sugar	▢	▢	▢	▢	▢	▢	▢

	1 Much lower than regular product	2	3	4 Same as regular product	5	6	7 Much more than regular product
Calories	☐	☐	☐	☐	☐	☐	☐

3. Listed below are possible attributes of the food product advertised <u>above</u>. Please indicate how likely or unlikely is it that <u>the above advertised product</u> possesses each of the listed attributes.

	1	2	3	4	5	6	7	
Not very tasty	☐	☐	☐	☐	☐	☐	☐	Very tasty
Not very healthy	☐	☐	☐	☐	☐	☐	☐	Very healthy
Not very helpful to control weight	☐	☐	☐	☐	☐	☐	☐	Very helpful to control weight
Not very convenient to eat	☐	☐	☐	☐	☐	☐	☐	Very convenient to eat
Very expensive	☐	☐	☐	☐	☐	☐	☐	Very cheap
Contain few natural content	☐	☉	☐	☐	☐	☐	☐	Contain many natural content
Not very nutritious	☐	☉	☐	☐	☐	☐	☐	Very nutritious
Not very delicious	☐	☉	☐	☐	☐	☐	☐	Very delicious

4. Compared with a <u>regular plain yogurt product</u>, <u>how beneficial or risky</u> do you think the above advertised product is to your overall health?

- benefit:

1 Much less beneficial	2	3	4 Same as regular product	5	6	7 Much more beneficial
☐	☐	☐	☐	☐	☐	☐

- risk:

1 Much less risky	2	3	4 Same as regular product	5	6	7 Much more risky
☐	☐	☐	☐	☐	☐	☐

5. The following statements concern how you might relate to the advertised product. Using a 7-point scale where "1" means STRONGLY DISAGREE and "7" means STRONGLY AGREE, mark the number for each statement that best represents your belief.

	1 Strongly	2	3	4	5	6	7 Strongly

	disagree						agree
Eating the yogurt advertised is consistent with how I see myself.							
The kind of person who typically eats the yogurt advertised is very much like me.							
Eating the yogurt advertised reflects who I am.							
My actual self-image is consistent with overall image of people who eat the yogurt advertised.							
Eating the yogurt advertised is consistent with who I would like to be.							
The kind of person who typically eats the yogurt advertised is like how I would like to be.							
Eating the yogurt advertised reflects who I would like to be.							
My ideal self-image is consistent with overall image of people who eat the yogurt advertised.							

5. The following items ask for more of your opinions about the ad that you just saw. Please mark the number for each item that best reflects your opinion.

a. The information in the ad that you just saw was:

Unbelievable	1	2	3	4	5	6	7	Believable
Untrustworthy	1	2	3	4	5	6	7	Trustworthy
Not credible	1	2	3	4	5	6	7	Credible

b. How do you feel about the ad that you just saw?

Bad	1	2	3	4	5	6	7	Good
Dislike	1	2	3	4	5	6	7	Like
Uninteresting	1	2	3	4	5	6	7	Interesting
Irritating	1	2	3	4	5	6	7	Not Irritating
Unfavorable	1	2	3	4	5	6	7	Favorable

c. How do you feel about the advertised product that you just saw?

Bad	1	2	3	4	5	6	7	Good
Dislike	1	2	3	4	5	6	7	Like
Uninteresting	1	2	3	4	5	6	7	Interesting

Irritating	1	2	3	4	5	6	7	Not Irritating
Unfavorable	1	2	3	4	5	6	7	Favorable

d. How do you feel about <u>the advertised brand that you just saw</u>?

Bad	1	2	3	4	5	6	7	Good
Dislike	1	2	3	4	5	6	7	Like
Unfavorable	1	2	3	4	5	6	7	Favorable
Negative	1	2	3	4	5	6	7	Positive

e. How likely is it that you would <u>purchase the advertised brand that you just saw</u>? Please mark the number for each item that best reflects your intentions.

Unlikely	1	2	3	4	5	6	7	Likely
Improbable	1	2	3	4	5	6	7	Probable
Uncertain	1	2	3	4	5	6	7	Certain
Definitely not	1	2	3	4	5	6	7	Definitely

(Next page)

B. Chocolate chip cookie ad with taste appeal (CookT)

1. Have you seen the advertisement before?

a. Yes

b. No

2. Compared with a <u>regular chocolate chip cookie product</u>, please indicate how likely or unlikely it is that the <u>advertised product</u> possesses each of the listed attributes.

	1 Much lower than regular product	2	3	4 Same as regular product	5	6	7 Much more than regular product
Calcium	⦿	○	○	○	○	○	○
Fiber	○	⦿	○	○	○	○	○
Cholesterol	○	⦿	○	○	○	○	○
Fat	○	⦿	○	○	○	○	○
Protein	○	○	○	○	○	○	○
Vitamins	○	○	○	○	○	○	○
Sugar	○	○	○	○	○	○	○

	1 Much lower than regular product	2	3	4 Same as regular product	5	6	7 Much more than regular product
Calories	☐	☐	☐	☐	☐	☐	☐

3. Listed below are possible attributes of the food product advertised <u>above</u>.
Please indicate how likely or unlikely is it that <u>the above advertised product</u> possesses each of the listed attributes.

Not very tasty	☐	☐	☐	☐	☐	☐	☐	Very tasty
Not very healthy	☐	☐	☐	☐	☐	☐	☐	Very healthy
Not very helpful to control weight	☐	☐	☐	☐	☐	☐	☐	Very helpful to control weight
Not very convenient to eat	☐	☐	☐	☐	☐	☐	☐	Very convenient to eat
Expensive	☐	☐	☐	☐	☐	☐	☐	Cheap
Contain few natural content	☐	⦿	☐	☐	☐	☐	☐	Contain many natural content
Not very nutritious	☐	⦿	☐	☐	☐	☐	☐	Very nutritious
Not very delicious	☐	⦿	☐	☐	☐	☐	☐	Very delicious

4. Compared with a <u>regular chocolate chip cookie product</u>, <u>how beneficial or risky</u> do you think the above advertised product is to your overall health?

- benefit:

1 Much less beneficial	2	3	4 Same as regular product	5	6	7 Much more beneficial
☐	☐	☐	☐	☐	☐	☐

- risk:

1 Much less risky	2	3	4 Same as regular product	5	6	7 Much more risky
☐	☐	☐	☐	☐	☐	☐

5. The following statements concern how you might relate to the advertised product. Using a 7-point scale where "1" means STRONGLY DISAGREE and "7" means STRONGLY AGREE, mark the number for each statement that best represents your belief.

	1 Strongly disagree	2	3	4	5	6	7 Strongly agree

Eating the chocolate chip cookie advertised is consistent with how I see myself.	
The kind of person who typically eats the chocolate chip cookie advertised is very much like me.	
Eating the chocolate chip cookie advertised reflects who I am.	
My actual self-image is consistent with overall image of people who eat the chocolate chip cookie advertised.	
Eating the chocolate chip cookie advertised is consistent with I would like to be.	
The kind of person who typically eats the chocolate chip cookie advertised is like how I would like to be.	
Eating the chocolate chip cookie advertised reflects who I would like to be.	
My ideal self-image is consistent with overall image of people who eat the chocolate chip cookie advertised.	

5. The following items ask for more of your opinions about the ad that you just saw. Please mark the number for each item that best reflects your opinion.

a. The information in the ad that you just saw was:

Unbelievable	1	2	3	4	5	6	7	Believable
Untrustworthy	1	2	3	4	5	6	7	Trustworthy
Not credible	1	2	3	4	5	6	7	Credible

b. How do you feel about the ad that you just saw?

Bad	1	2	3	4	5	6	7	Good
Dislike	1	2	3	4	5	6	7	Like
Uninteresting	1	2	3	4	5	6	7	Interesting
Irritating	1	2	3	4	5	6	7	Not Irritating
Unfavorable	1	2	3	4	5	6	7	Favorable

c. How do you feel about the advertised product that you just saw?

Bad	1	2	3	4	5	6	7	Good

Dislike	1	2	3	4	5	6	7	Like
Uninteresting	1	2	3	4	5	6	7	Interesting
Irritating	1	2	3	4	5	6	7	Not Irritating
Unfavorable	1	2	3	4	5	6	7	Favorable

d. How do you feel about <u>the advertised brand that you just saw</u>?

Bad	1	2	3	4	5	6	7	Good
Dislike	1	2	3	4	5	6	7	Like
Unfavorable	1	2	3	4	5	6	7	Favorable
Negative	1	2	3	4	5	6	7	Positive

e. How likely would you <u>purchase the advertised brand that you just saw</u>? Please mark the number for each item that best reflects your intentions.

Unlikely	1	2	3	4	5	6	7	Likely
Improbable	1	2	3	4	5	6	7	Probable
Uncertain	1	2	3	4	5	6	7	Certain
Definitely not	1	2	3	4	5	6	7	Definitely

(Next page)

C. Multigrain cereal ad with taste appeal (CerT)

1. Have you seen the advertisement before?

a. Yes

b. No

2. Compared with a <u>regular multigrain cereal product</u>, please indicate how likely or unlikely it is that the <u>advertised product</u> possesses each of the listed attributes.

	1 Much lower than regular product	2	3	4 Same as regular product	5	6	7 Much more than regular product
Calcium	●	○	○	○	○	○	○
Fiber	○	●	○	○	○	○	○
Cholesterol	○	●	○	○	○	○	○
Fat	○	●	○	○	○	○	○
Protein	○	○	○	○	○	○	○

	1 Much lower than regular product	2	3	4 Same as regular product	5	6	7 Much more than regular product
Vitamins	☐	☐	☐	☐	☐	☐	☐
Sugar	☐	☐	☐	☐	☐	☐	☐
Calories	☐	☐	☐	☐	☐	☐	☐

3. Listed below are possible attributes of the food product advertised <u>above</u>.
Please indicate how likely or unlikely is it that <u>the above advertised product</u> possesses each of the listed attributes.

Not very tasty	☐	☐	☐	☐	☐	☐	☐	Very tasty
Not very healthy	☐	☐	☐	☐	☐	☐	☐	Very healthy
Not very helpful to control weight	☐	☐	☐	☐	☐	☐	☐	Very helpful to control weight
Not very convenient to eat	☐	☐	☐	☐	☐	☐	☐	Very convenient to eat
Expensive	☐	☐	☐	☐	☐	☐	☐	Cheap
Contain few natural content	☐	☑	☐	☐	☐	☐	☐	Contain many natural content
Not very nutritious	☐	☑	☐	☐	☐	☐	☐	Very nutritious
Not very delicious	☐	☑	☐	☐	☐	☐	☐	Very delicious

4. Compared with a <u>regular multigrain cereal product</u>, <u>how beneficial or risky</u> do you think the above advertised product is to your overall health?

- benefit:

1 Much less beneficial	2	3	4 Same as regular product	5	6	7 Much more beneficial
☐	☐	☐	☐	☐	☐	☐

- risk:

1 Much less risky	2	3	4 Same as regular product	5	6	7 Much more risky
☐	☐	☐	☐	☐	☐	☐

5. The following statements concern how you might relate to the advertised product. Using a 7-point scale where "1" means STRONGLY DISAGREE and "7" means STRONGLY AGREE, mark the number for each statement that best represents your belief.

	1	2	3	4	5	6	7
	Stron						Stron

	gly disagree						gly agree
Eating the multigrain cereal advertised is consistent with how I see myself.							
The kind of person who typically eats the multigrain cereal advertised is very much like me.							
Eating the multigrain cereal advertised reflects who I am.							
My actual self-image is consistent with overall image of people who eat the multigrain cereal advertised.							
Eating the multigrain cereal advertised is consistent with I would like to be.							
The kind of person who typically eats the multigrain cereal advertised is like how I would like to be.							
Eating the multigrain cereal advertised reflects who I would like to be.							
My ideal self-image is consistent with overall image of people who eat the multigrain cereal advertised.							

5. The following items ask for more of your opinions about the ad that you just saw. Please mark the number for each item that best reflects your opinion.

a. The information in <u>the ad that you just saw</u> was:

Unbelievable	1	2	3	4	5	6	7	Believable
Untrustworthy	1	2	3	4	5	6	7	Trustworthy
Not credible	1	2	3	4	5	6	7	Credible

b. How do you feel about <u>the ad that you just saw?</u>

Bad	1	2	3	4	5	6	7	Good
Dislike	1	2	3	4	5	6	7	Like
Uninteresting	1	2	3	4	5	6	7	Interesting
Irritating	1	2	3	4	5	6	7	Not Irritating
Unfavorable	1	2	3	4	5	6	7	Favorable

c. How do you feel about <u>the advertised product that you just saw</u>?

Bad	1	2	3	4	5	6	7	Good
Dislike	1	2	3	4	5	6	7	Like
Uninteresting	1	2	3	4	5	6	7	Interesting
Irritating	1	2	3	4	5	6	7	Not Irritating
Unfavorable	1	2	3	4	5	6	7	Favorable

d. How do you feel about <u>the advertised brand that you just saw</u>?

Bad	1	2	3	4	5	6	7	Good
Dislike	1	2	3	4	5	6	7	Like
Unfavorable	1	2	3	4	5	6	7	Favorable
Negative	1	2	3	4	5	6	7	Positive

e. How likely would you <u>purchase the advertised brand that you just saw</u>? Please mark the number for each item that best reflects your intentions.

Unlikely	1	2	3	4	5	6	7	Likely
Improbable	1	2	3	4	5	6	7	Probable
Uncertain	1	2	3	4	5	6	7	Certain
Definitely not	1	2	3	4	5	6	7	Definitely

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D. Pepperoni Pizza ad with taste appeal (PizT)

OUR PEPPERONI PIZZA CAN BE SUMMED UP IN TWO WORDS:
MORE TASTY, FLAVORFUL, DELICIOUS.

... SORRY, WE HAVE PROBLEMS STOPPING AT JUST TWO.

There just aren't enough adjectives to describe
the appetizing value of *Familia pepperoni pizza.*

1. Have you seen the advertisement before?
a. Yes
b. No

2. Compared with a <u>regular pepperoni pizza product</u>, please indicate how likely or unlikely it is that the <u>advertised product</u> possesses each of listed attributes.

	1 Much lower than regular product	2	3	4 Same as regular product	5	6	7 Much more than regular product
Calcium	◉	○	○	○	○	○	○
Fiber	○	◉	○	○	○	○	○
Cholesterol	○	◉	○	○	○	○	○
Fat	○	◉	○	○	○	○	○

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	1 Much lower than regular product	2	3	4 Same as regular product	5	6	7 Much more than regular product
Protein	☐	☐	☐	☐	☐	☐	☐
Vitamins	☐	☐	☐	☐	☐	☐	☐
Sugar	☐	☐	☐	☐	☐	☐	☐
Calories	☐	☐	☐	☐	☐	☐	☐

3. Listed below are possible attributes of the food product advertised <u>above</u>.
Please indicate how likely or unlikely is it that <u>the above advertised product</u> possesses each of the listed attributes.

Not very tasty	☐	☐	☐	☐	☐	☐	☐	Very tasty
Not very healthy	☐	☐	☐	☐	☐	☐	☐	Very healthy
Not very helpful to control weight	⦿	☐	☐	☐	☐	☐	☐	Very helpful to control weight
Not very convenient to eat	☐	☐	☐	☐	☐	☐	☐	Very convenient to eat
Expensive	☐	☐	☐	☐	☐	☐	☐	Cheap
Contain few natural content	☐	⦿	☐	☐	☐	☐	☐	Contain many natural content
Not very nutritious	☐	⦿	☐	☐	☐	☐	☐	Very nutritious
Not very delicious	☐	⦿	☐	☐	☐	☐	☐	Very delicious

4. Compared with a <u>regular pepperoni pizza product</u>, <u>how beneficial or risky</u> do you think the above advertised product is to your overall health?

- benefit:

1 Much less beneficial	2	3	4 Same as regular product	5	6	7 Much more beneficial
☐	☐	☐	☐	☐	☐	☐

- risk:

1 Much less risky	2	3	4 Same as regular product	5	6	7 Much more risky
☐	☐	☐	☐	☐	☐	☐

5. The following statements concern how you might relate to the advertised product. Using a 7-point scale where "1" means STRONGLY DISAGREE and "7" means STRONGLY AGREE, mark the number for each statement that best represents your belief.

	1	2	3	4	5	6	7

	Strongly disagree						Strongly agree
Eating the pepperoni pizza advertised is consistent with how I see myself.							
The kind of person who typically eats the pepperoni pizza advertised is very much like me.							
Eating the pepperoni pizza advertised reflects who I am.							
My actual self-image is consistent with overall image of people who eat the pepperoni pizza advertised.							
Eating the pepperoni pizza advertised is consistent with I would like to be.							
The kind of person who typically eats the pepperoni pizza advertised is like how I would like to be.							
Eating the pepperoni pizza advertised reflects who I would like to be.							
My ideal self-image is consistent with overall image of people who eat the pepperoni pizza advertised.							

5. The following items ask about your opinions on the ad that you just saw. Please mark the number for each item that best reflects your opinion.

a. The information in <u>the ad that you just saw</u> was:

Unbelievable	1	2	3	4	5	6	7	Believable
Untrustworthy	1	2	3	4	5	6	7	Trustworthy
Not credible	1	2	3	4	5	6	7	Credible

b. How do you feel about <u>the ad that you just saw?</u>

Bad	1	2	3	4	5	6	7	Good
Dislike	1	2	3	4	5	6	7	Like
Uninteresting	1	2	3	4	5	6	7	Interesting
Irritating	1	2	3	4	5	6	7	Not Irritating
Unfavorable	1	2	3	4	5	6	7	Favorable

c. How do you feel about <u>the advertised product that you just saw</u>?

Bad	1	2	3	4	5	6	7	Good
Dislike	1	2	3	4	5	6	7	Like
Uninteresting	1	2	3	4	5	6	7	Interesting
Irritating	1	2	3	4	5	6	7	Not Irritating
Unfavorable	1	2	3	4	5	6	7	Favorable

d. How do you feel about <u>the advertised brand that you just saw</u>?

Bad	1	2	3	4	5	6	7	Good
Dislike	1	2	3	4	5	6	7	Like
Unfavorable	1	2	3	4	5	6	7	Favorable
Negative	1	2	3	4	5	6	7	Positive

e. How likely would you <u>purchase the advertised brand that you just saw</u>? Please mark the number for each item that best reflects your intentions.

Unlikely	1	2	3	4	5	6	7	Likely
Improbable	1	2	3	4	5	6	7	Probable
Uncertain	1	2	3	4	5	6	7	Certain
Definitely not	1	2	3	4	5	6	7	Definitely

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III. INDIVIDUAL PROPENSITIES

1. The following set of questions asks about your life style. Please think about self, and indicate how much you agree with each statement using a 7-point scale where "1" means STRONGLY DISAGREE and "7" means STRONGLY AGREE.

	1 Strongly disagree	2	3	4	5	6	7 Strongly agree
1. I try to avoid foods that are high in fat							
2. I try to avoid foods that are high in cholesterol							
3. I try to avoid foods with a high salt content.							
4. I am concerned about how much sugar I eat.							
5. I make a special effort to get enough fiber in my diet.							
6. I use a lot of low calorie or calorie reduced products.							
7. I try to select foods that are fortified with vitamins and minerals.							
8. I am careful about what I eat in order to keep my weight under control.							
9. I try to avoid foods that have additives in them.							
10. I am concerned about getting enough calcium in my diet							
11. I am concerned about getting enough protein in my diet							

2. Below is another set of questions asks about your life style. Please think about self, and indicate how often they agree with each statement using a 5-point scale where "1" means NEVER and "7" means ALWAYS.

	1 Never	2	3	4	5 Always
1. I wish I looked like someone else.					
2. My looks upset me.					
3. There are lots of things I'd change about my					

looks if I could.
4. I wish I looked better.
5. I feel ashamed of how I look.
6. I worry about the way I look.
7. I'm looking as nice as I'd like to.
8. I like what I see when I look in the mirror.
9. I'm pretty happy about the way I look.
10. I like what I look like in pictures.
11. I think I have a good body.
12. I am proud of my body.
13. I'm as nice looking as most people.
14. My looks help me to get dates.
15. People my own age like my looks.
16. I think my appearance would help me get a job.
17. Other people consider me good looking.
18. I am satisfied with my weight.
19. I really like what I weigh.
20. I am preoccupied with trying to change my body weight.
21. Weighing myself depresses me.
22. My weight makes me unhappy.
23. I feel I weigh the right amount for my height.

3. What is your gender?
( ) Male
( ) Female

4. Are you currently dieting?
( ) Yes
( ) No

5. About how tall are you without shoes?
(Round fractions of inches to down to whole inch)
Enter Feet (   )
Enter Inches (   )

6. About how much do you weigh without shoes?
(Round fractions up to whole number)
Enter lbs. (   )

The following information will be used for extra credit purposes only.

1. What is your name?

First Name_____
Last Name_____

2. What is your student ID number (the last 10-digits on your UGA card, e.g., 8102122345)?

_____

3. Which class do you wish to get extra credit for?

Please specify:_____

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Thank you very much,
This concludes the survey. Pressing the "Done" button will take you back to the
SurveyMonkey main page.